
THE HEIGHTS REGIONAL ACTIVE TRANSPORTATION PLAN

February 2025 | FINAL





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- » South Euclid: January 27, 2025. Resolution No. 39-24



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People walking in Euclid Creek Reservation.

EXECUTIVE SUMMARY





EXECUTIVE SUMMARY

INTRODUCTION

The Heights Regional Active Transportation Plan (Heights Regional ATP) is a guide for the future of walking, biking, and rolling in Cleveland Heights, University Heights, and South Euclid. Developed with regular input and guidance from the public, and a steering committee consisting of representatives from local and regional stakeholders, the plan seeks to improve connectivity between the three cities and to the rest of the Cleveland area by building on each city's recent investments in active transportation infrastructure. The plan was created through the collaborative efforts of a core project team consisting of representatives from the cities of Cleveland Heights, University Heights, South Euclid, as well as Burton Planning Services, Burgess & Niple, Toole Design Group, and the Ohio Department of Transportation.

WHAT IS ACTIVE TRANSPORTATION AND WHY IS IT IMPORTANT?

“Active transportation” is an umbrella term used to describe all of the methods people use to travel around without 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 is a fundamental transportation mode many Ohioans use to access public transit, work, school, retail stores or any number of destinations in urban, suburban, and rural settings. In addition to personal mobility, active transportation provides many community benefits such as improved public health, economic development, greater quality of life, and enhanced environmental quality, as summarized on the next page.

Benefits of Active Transportation

Physical Health

Increased opportunities for active modes of travel can increase physical activity levels and reduce 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.¹ Active transportation can also support building friendships and community networks by walking, biking, or rolling together, 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.² 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 many quality-of-life benefits. They increase 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.³

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. For one study in Ohio, see: Econsult Solutions, Inc. (2021). *The Regional Impacts of a Completed Central Ohio Greenways in Franklin County*. Prepared for the Mid-Ohio Regional Planning Commission. <https://www.morpc.org/2023/wp-content/uploads/2023/03/08-19-22-Economic-Impact-of-the-Central-Ohio-Greenways.pdf>

3. 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

WHAT IS AN ACTIVE TRANSPORTATION PLAN?

An Active Transportation Plan (ATP) outlines the vision, goals, and strategies needed to support safe, convenient, and accessible active transportation options for a community at a local, regional, or statewide scale. It should identify a combination of infrastructure improvements, policies, and programs to address the various challenges that people may encounter to engaging in more active transportation. A regional plan like the Heights Regional ATP also focuses on linking communities together while improving local networks. This document summarizes the findings of the planning process and is organized into the following sections:

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

PROJECT TIMELINE

The process to develop the Heights Regional ATP began in September 2023 with an assessment of existing conditions and a review of other relevant plans and studies. Public input via in-person meetings, an open house, and online surveys and a technical analysis provided a foundation for proposed projects and prioritization of those recommendations. The plan's final chapter incorporates all of this input and analysis to provide guidance for implementation. The project is expected to be approved in October 2024 (see **Figure 1** for a project timeline).

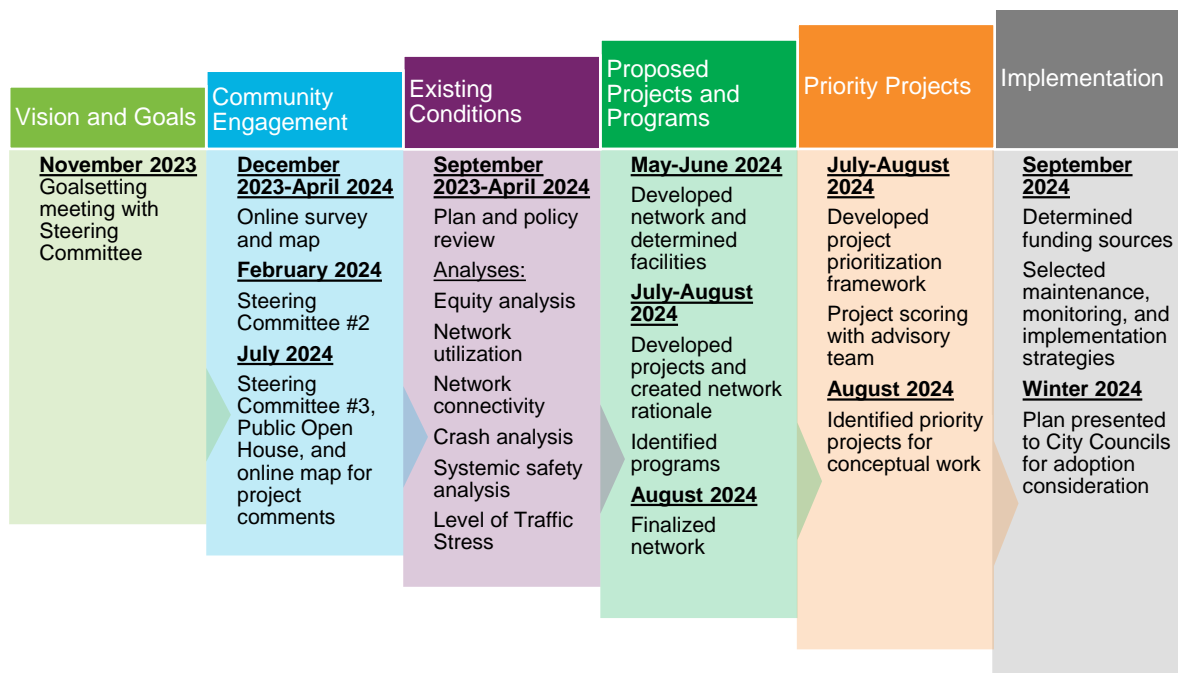


Figure 1. Project Timeline

VISION AND GOALS

The community vision statement for this plan is:

The Heights Regional Active Transportation Plan will provide a framework to increase transportation equity and allow residents to safely travel in and between Cleveland Heights, University Heights, and South Euclid. The Plan strives to create a safe, convenient, and accessible transportation system including for those walking, biking, and rolling, regardless of wealth, ability, or disability.

The vision statement is supported by the following goals:



Connectivity

Increase active transportation connections in and among the cities of Cleveland Heights, University Heights, and South Euclid, including both trips for work and everyday destinations.



Safety

Improve the safety of the transportation system with a focus on walking and biking.



Accessibility

Create mobility options for users of all ages and abilities.



Health

Use active transportation to motivate healthy lifestyles in the community.



Education

Educate the public on mobility options such as walking, biking, rolling, and driving options.



Equity

Support well-maintained walking and biking infrastructure in areas of the greatest need (lowest income, highest transportation burden).

PUBLIC ENGAGEMENT

Community engagement was included at key milestones in the plan process to gain input on the vision and goals for the plan, any barriers to walking or biking, potential new walking or biking facilities, and project prioritization. Engagement activities included two online surveys, a public open house, three Steering Committee meetings, and additional outreach at community-focused events such as local bicycle rides and community workshops. Early public engagement identified avenues to encourage more walking and biking, which included more bicycle facilities and trails, more separation for pedestrians and bicyclists from vehicles, and better maintenance of sidewalks and trails. The later public open house and accompanying online survey collected input on how to prioritize the various projects, programs, and policies. Community input indicated the greatest enthusiasm for bicycle boulevards such as Silsby Road and improvements to major corridors such as Cedar Road, Lee Road, and Mayfield Road. The Steering Committee assisted in the development of the vision and goals for the ATP, suggested implementation action items, and identified potential focus projects for further development. Those discussions consistently highlighted safety as an important consideration in plan development and project selection. Additional details about all aspects of public engagement are located in the Community Engagement section.

Public Engagement Activities

- Two online surveys
- One public open house
- Three steering committee meetings
- Additional outreach at community events



Source: Toole Design Group

Attendees at the public open house.

EXISTING CONDITIONS

The project team completed an existing conditions analysis to understand the current transportation system and where improvements could be made for people who travel by walking and biking. The analysis revealed high concentrations of bicycle and pedestrian crashes from 2018 to 2022 on major arterials including Cedar Road, Coventry Road, Lee Road, Noble Road, and Warrensville Center Road/Noble Road. In addition, the project team reviewed ODOT's Demand and Needs Analyses, which identified areas with strong potential for biking and walking. High demand and high need areas in Cleveland Heights, University Heights, and South Euclid include many of the census tracts bounded by Mayfield Road, Lee Road, Cedar Road, and Green Road, as well as some adjacent areas. Smartphone mobility data, provided by the firm Streetlight), was used to review areas with high walking and biking activity in 2019. High levels of walking activity include major key corridors such as Coventry Road, Lee Road, Mayfield Road, and Warrensville Center Road. High levels of existing bicycling activity include Edgehill Road, North Park Boulevard, and Taylor Road. Additional details about the existing conditions data considered as part of the plan are located in the Existing Conditions section.

PROPOSED PROJECTS AND PROGRAMS

The combined result of the existing conditions analysis, community input, and Steering Committee guidance provided a recommended active transportation network plan for the region. The network includes recommendations for new walking and biking infrastructure including:

- » 21 miles of bicycle boulevards,
- » 17 miles of shared use paths,
- » 11 miles of separated bike lanes,
- » 5 miles of buffered bicycle lanes,
- » 3 miles of on-road bicycle lanes,
- » 6 miles of sidewalks; and
- » improvements to 50 intersections.

Supportive programs and policies are also recommended to assist the cities and residents in making active transportation an easy option in the future. Examples of recommended programs and policies include educational campaigns, walking and biking encouragement programs, policies that support safety, and school-related programs. See the **Community Engagement** chapter for details on the proposed bicycle and pedestrian projects and supportive programs.

PRIORITY PROJECTS

A prioritization process that included input from the community and other key metrics was used to identify projects recommended for implementation or further study in the short term (1-3 years).

Projects that ranked high in prioritization included:

- » Warrensville Center Road/Noble Road - separated bicycle lanes, crossing improvements, and sidewalk gap fill
- » Cedar Road - shared use path, separated bicycle lanes, and crossing improvements
- » Mayfield Road - shared use path, separated bicycle lanes, and crossing improvements
- » Taylor Road- bicycle improvements and crossing improvements
- » Bluestone Road- bicycle boulevard

Additionally, the following projects were selected for additional conceptual design work:

- » Warrensville Center Road/Noble Road - separated bicycle lanes, crossing improvements, and sidewalk gap fill
- » Bluestone Road - bicycle boulevard
- » Miramar Boulevard, Felton Road, Avondale Road, and Quarry Drive - bicycle boulevard
- » Belvoir Boulevard - buffered bicycle lanes



Rendering of proposed Green Road/Bluestone Road intersection improvements

VISION AND GOALS





VISION AND GOALS

COMMUNITY VISION STATEMENT

The Heights Regional Active Transportation Plan will provide a framework to increase transportation equity and allow residents to safely travel in and among the cities of Cleveland Heights, University Heights, and South Euclid. The Plan strives to create a safe, convenient, and accessible transportation system including for those walking, biking, and rolling, regardless of wealth, ability, or disability.

COMMUNITY GOALS

- » **Connectivity** – increase active transportation connections in and among the cities of Cleveland Heights, University Heights, and South Euclid, including both trips for work and everyday destinations.
- » **Safety** – improve the safety of the transportation system with a focus on walking and biking.
- » **Accessibility** – create mobility options for users of all ages and abilities.
- » **Health** – use active transportation to motivate healthy lifestyles in the community.
- » **Education** – educate the public on mobility options such as walking, biking, rolling, and driving options.
- » **Equity**– support well-maintained walking and biking infrastructure in areas of the greatest need (lowest income, highest transportation burden).

COMMUNITY ENGAGEMENT





Source: Toole Design Group

COMMUNITY ENGAGEMENT

Community engagement is an essential tool in the 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 online surveys, a public open house, Steering Committee meetings, and additional outreach at related events such as local bicycle rides or community workshops.

ENGAGEMENT TIMELINE (MILESTONE TOUCHPOINTS)

The project team hosted three Steering Committee meetings throughout the project at key milestones to gain feedback and guidance. The first Steering Committee meeting was held in November 2023 as a project kickoff meeting, the second in February 2024 to discuss the region's existing state of walking and biking, and the third meeting was held in June 2024 to review the draft active transportation network.

In addition to the Steering Committee, community engagement activities included an online map and survey in winter/spring 2024 to learn about the community's current use of trails and sidewalks along with suggestions for new facilities. A public meeting held in the summer of 2024 was supplemented by an online survey to gather feedback on new draft projects.



STRATEGIES

Steering Committee Meetings

The Steering Committee, comprised of City staff, elected officials, transit agency staff, and local stakeholders, guided the development of the Heights Regional ATP. Steering Committee members are listed under Acknowledgments at the beginning of this document. The Steering Committee met three times over the course of the plan development:

- » The first meeting introduced the project development process, with discussion focused on existing plans and policies, and included an exercise in mapping positives, negatives, and gaps in existing infrastructure.
- » The second meeting focused on the existing conditions analysis and included an exercise to determine plan goals.
- » The third meeting focused on a review of the recommended projects, programs, and policies, and Steering Committee members identified high-priority projects and preferred bicycle boulevard treatments.

Public Input

Public feedback was collected through online surveys and a public open house during the project process:

- » **An online survey** at the beginning of the planning process included questions about barriers to bicycling and walking and a web map exercise to identify opportunities and challenges. The survey ran from December 4, 2023 through April 1, 2024. The survey received 505 responses, and the web map received 234 individual comments. Examples of the user interface for the web map showing point and line comments are in **Figure 2**.
- » **An open house** was held after projects had been identified to review the draft network recommendations and plans and policies. The event took place on July 15, 2024 from 6:00pm to 8:00pm at the Noble Branch Library (2800 Noble Road) in Cleveland Heights. Approximately 50 people attended and 22 people submitted comment cards.
- » **A second online survey** allowed people to review the draft network recommendations and provide comments. The survey ran from July 15 through August 12, 2024 and received 26 responses.

The online surveys and open house were advertised by Cleveland Heights, University Heights, and South Euclid through email and social media channels. City staff also handed out fliers advertising the surveys and open house at community events such as local bicycle rides, festivals, neighborhood meetings, and meetings for other local plans.

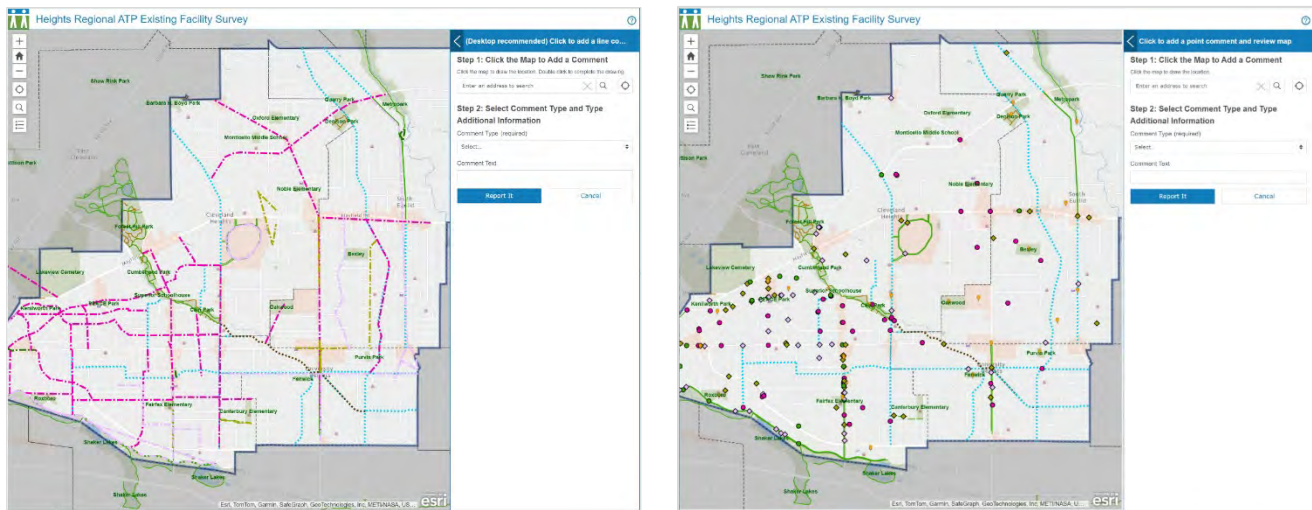


Figure 2. Example Images of Heights ATP Web Map with Public Comments as Lines (left) and Points (right)

KEY TAKEAWAYS

The first Steering Committee meeting and initial online survey helped determine popular destinations, barriers to walking and biking in Cleveland Heights, University Heights, and South Euclid, and key streets that people are currently using to bike or walk.

Popular destinations

- » Schools, including: Rowland Elementary School, Memorial Junior High, Brush High School, and Ruffing Montessori School
- » Libraries
- » Parks: Denison Park, Euclid Creek Metropark, Quarry Park, and Walter Stinson Community Park
- » Commercial corridors and districts: Lee Road, Cedar Road, Fairmount Boulevard, Coventry Road, and University Circle (in Cleveland)

Top barriers to walking

- » **Unmaintained sidewalks and trails.** Better maintenance of sidewalks and trails was a top priority, with 55 percent of survey respondents saying that this would encourage them to walk or roll more.
- » **Not enough space between vehicles and pedestrians.** Nearly half (48%) of survey respondents noted greater separation from motor vehicles would encourage them to walk or roll more.
- » **Lack of shade.** People requested more trees and shade along sidewalks and trails.
- » **Feeling unsafe.** Respondents expressed concerns about pedestrian safety from high vehicle traffic and speeds on corridors such as Cedar Road, Lee Road, and Coventry Road. Relatedly, they requested traffic calming along Coventry Road, Lee Road, and at the Cedar Road/Warrensville Center Road intersection. Community members also requested

improvements to pedestrian infrastructure such as lighting, signals, and pedestrian crossings at various intersections along Cedar Road, Coventry Road, Euclid Heights Boulevard, Fairmount Boulevard, Green Road, Lee Road, and Mayfield Road.

Top barriers to biking

- » **Lack of bicycle facilities with separation.** Over 60 percent of survey respondents said that more bicycle lanes or trails would encourage them to bike more, and 60 percent also said they would prefer more separation between cars and trucks and people biking.
- » **Bicycle facility maintenance.** Better maintenance of bicycle facilities was a concern for at least 45 percent of survey respondents, and people specifically mentioned debris in existing bicycle facilities on corridors such as Cedar Glen Road, Edgehill Road, Green Road, Lee Road, North Park Boulevard, and Warrensville Center Road
- » **More physical protection and separation.** Respondents expressed a desire for wider bicycle facilities and more physical protection on corridors with painted bicycle lanes such as Lee Road, North Park Boulevard, and Warrensville Center Road
- » **Intersections on major roads.** People mentioned various intersections as barriers for bicyclists, including: Cedar Road/Cottage Grove, Coventry Road/Euclid Heights Boulevard, Cedar Road/Euclid Heights Boulevard, Coventry Road/Scarborough Road, and Cedar Road/Fairmount Boulevard.

Streets currently serving as key routes for bicycling/walking

- » The corridors that received the most comments in the first online survey were Lee Road (35 comments), Cedar Road (25 comments) and Euclid Heights Boulevard (20 comments).
- » Other major commercial corridors such as Coventry Road, Fairmount Boulevard, Mayfield Road, and Warrensville Center Road were noted as important.
- » Bicyclists identified existing on-road bicycle facilities on Cedar Glen Road, Edgehill Road, Green Road, Lee Road, North Park Boulevard, and Warrensville Center Road as key routes.



Source: Burton Planning Services

The first Steering Committee meeting.

KEY TAKEAWAYS (cont.)

In June 2024 the draft proposed network was presented to the Steering Committee, and committee members were asked to identify priority projects based on their knowledge of the existing network and community needs. In July 2024 the draft proposed network was presented at a public open house, where community members were asked to vote on up to three priority projects and any priority programs and policies.

During the third Steering Committee meeting, committee members broke into small groups to share their preferences for project priority by city. The following project list provides a qualitative assessment of prioritization and may be considered alongside the data-driven project prioritization list (see **Priority Projects**).

Steering Committee Priority Projects by City

- » Cleveland Heights
 1. Lee Road: separated bicycle lane (Fairfax Elementary School to Cain Park)
 2. The bicycle boulevard network overall, including improving the current greenways
 3. Euclid Heights Boulevard: shared use path (Cedar Road to Taylor Road)
 4. Noble Road: separated bicycle lanes (northern City limit to Mayfield Road)
- » South Euclid
 1. Bicycle boulevards
 - a. Route along Miramar Boulevard, Felton Road, Avondale Road, and Quarry Drive (Monticello Boulevard to southern City limit)
 - b. Bluestone Road (Noble Road to shared use path entrance)
 2. South Belvoir Boulevard: buffered bicycle lanes (Bluestone Road to southern City limit)
 3. Warrensville Center Road: separated bicycle lanes (Mayfield Road to Cedar Road)
- » University Heights
 1. Washington Boulevard: shared use path (Cain Park to Silsby Road/Walter Stinson Community Park)
 2. Warrensville Center Road: separated bicycle lanes (within City limits, planned for 2027)
 3. Washington Boulevard: shared use path (extension to John Carroll University)
 4. Silsby Road bicycle boulevard (within City limits)

The final public meeting was an open house that presented the project process, vision and goals, and the proposed active transportation projects, programs, and policies. It took place on July 15, 2024, from 6:00pm to 8:00pm at the Noble Branch Library in Cleveland Heights, and was attended by people from all three project jurisdictions. Attendees could add comments to the posters noting potential changes or their support. The event also included a survey that allowed participants to indicate the projects programs, and policies they would like to see implemented first. The public identified the following projects to be prioritized:

- » Cedar Road: shared use path, separated bicycle lane, and crossing improvement zone (13 votes)
- » Lee Road: separated bicycle lane and crossing improvement zone (10 votes)
- » Mayfield Road: shared use path, separated bicycle lane, and crossing improvement zone (9 votes)

- » Washington Boulevard: shared use path (6 votes) and buffered bicycle lane (3 votes)
- » Silsby Road, Essex Road, Westminster Road, and Clarkson Road: bicycle boulevard (7 votes)
- » Taylor Road: bicycle facilities (6 votes)
- » Monticello Road: shared use path (4 votes)
- » Warrensville Center Road: separated bicycle lane and crossing improvement zone (4 votes)
- » Severance Circle: shared use path (4 votes)
- » Coventry Road: crossing improvement zone (4 votes)
- » Miramar Boulevard, Felton Road, Avondale Road, and Quarry Drive: bicycle boulevard (3 votes)
- » Belvoir Boulevard: bicycle boulevard (3 votes)
- » Liberty Road, Norma Road, and Ardmore Road: bicycle boulevard (3 votes)
- » Euclid Heights Boulevard: bicycle boulevard (3 votes)

In response to feedback from the public open house and online survey, a project was added at the Coventry Road/Clarkson Road intersection to add pedestrian crossings, and the proposed connection from Severance Circle to Crest Road was changed from a sidewalk to a shared use path. Additionally, proposed projects were added to upgrade the existing bicycle lanes along Severance Circle to a shared use path and to upgrade the existing buffered bicycle lanes along North Park Boulevard to a separated bicycle lane.

Participants in stakeholder and public engagement regularly emphasized safety as an important concern for active transportation in the Heights Regional ATP area. Full summaries and information about all public engagement can be found in **Appendix A**.



Source: Toole Design Group

People providing comments at the public open house.

EXISTING CONDITIONS





EXISTING CONDITIONS

This chapter examines several elements of University Heights, Cleveland Heights, and South Euclid's transportation system. It presents a demographic profile of this study area, 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 the study area's active transportation evolution. This chapter also summarizes existing programs that support active transportation. A set of analyses that examines the active transportation system from various perspectives (e.g., equity, safety, connectivity) is also included.

DEMOGRAPHIC PROFILE

To build the demographic profile for the cities of University Heights, Cleveland Heights, and South Euclid, data was collected from the US Census American Community Survey (ACS) 5-year estimates for 2022 and the 2020 Census. These three cities are in the Cleveland, Ohio, area and are home to about 80,405 individuals according to ACS 2022 estimates.

The study area is more diverse than the state of Ohio average with 40.8 percent of the population identifying as Black compared to the statewide average of 12.3 percent, as illustrated in **Figure 3**.¹ The age breakdowns of the study area population, illustrated in **Figure 4**, are on par with the statewide age breakdowns, with a slightly larger proportion in the study area in the 15-24 age range.² This is likely due to the presence of Case

¹ U.S. Census Bureau. "PROFILE OF GENERAL POPULATION AND HOUSING CHARACTERISTICS." Decennial Census, DEC Demographic Profile, Table DP1, 2020, <https://data.census.gov/table/DECENNIALDP2020.DP1?q=2020+census&t=Race+and+Ethnicity&g=060XX00US3903516014,3903573264,3903578932&d=DEC+Demographic+Profile>. Accessed on January 17, 2024.

² U.S. Census Bureau. "ACS Demographic and Housing Estimates." American Community Survey, ACS 5-Year Estimates Data Profiles, Table DP05, 2022, <https://data.census.gov/table/ACSDP5Y2022.DP05?q=DP05:ACS+Demographic+and+Housing+Estimates&g=060XX00US3903516014,3903573264,3903578932&moe=false>. Accessed on January 17, 2024.

Western Reserve University and John Carroll University. Car ownership rates, illustrated in **Figure 5**, are generally lower in the study area compared to Ohio overall, with 8.8 percent of households not owning a car and 41.4 percent owning one car, compared to 7.2 percent and 34.3 percent statewide, respectively.³ This lower car ownership is reflected in commute mode share. While nearly 70 percent of the University Heights, Cleveland Heights, and South Euclid working population commute to work by driving alone, as illustrated in **Figure 6**, the rates of walking, biking, and using transit are all more than double the statewide average.⁴

The largest employment industry is “Educational services, health care, and social assistance,” with 35.8 percent of the working population in the study area employed in these sectors.⁵ The average median household income for the three cities is \$79,016, higher than the state average of \$65,720.⁶ However, the study area’s unemployment rate is 6.7 percent which is higher than the state average of 3.7 percent. The percent of the population of the study area below the poverty line is 13.4 percent, the same as the state average.⁷

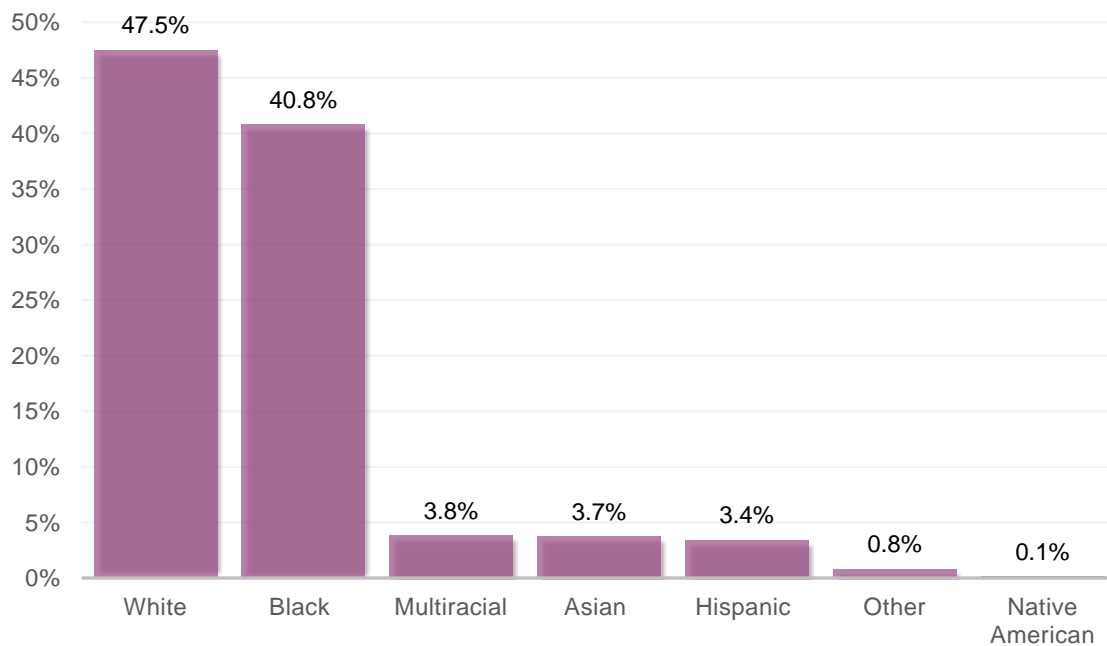


Figure 3. Study Area Race

³ U.S. Census Bureau. "Physical Housing Characteristics for Occupied Housing Units." American Community Survey, ACS 5-Year Estimates Subject Tables, Table S2504, 2022, <https://data.census.gov/table/ACSST5Y2022.S2504?q=S2504&g=160XX00US3916014,3973264,3978932&moe=false>. Accessed on January 17, 2024.

⁴ U.S. Census Bureau. "Selected Economic Characteristics." American Community Survey, ACS 5-Year Estimates Data Profiles, Table DP03, 2022, <https://data.census.gov/table/ACSDP5Y2022.DP03?q=DP03&g=160XX00US3916014,3973264,3978932&moe=false>. Accessed on January 17, 2024.

⁵ Ibid.

⁶ Ibid.

⁷ Ibid.

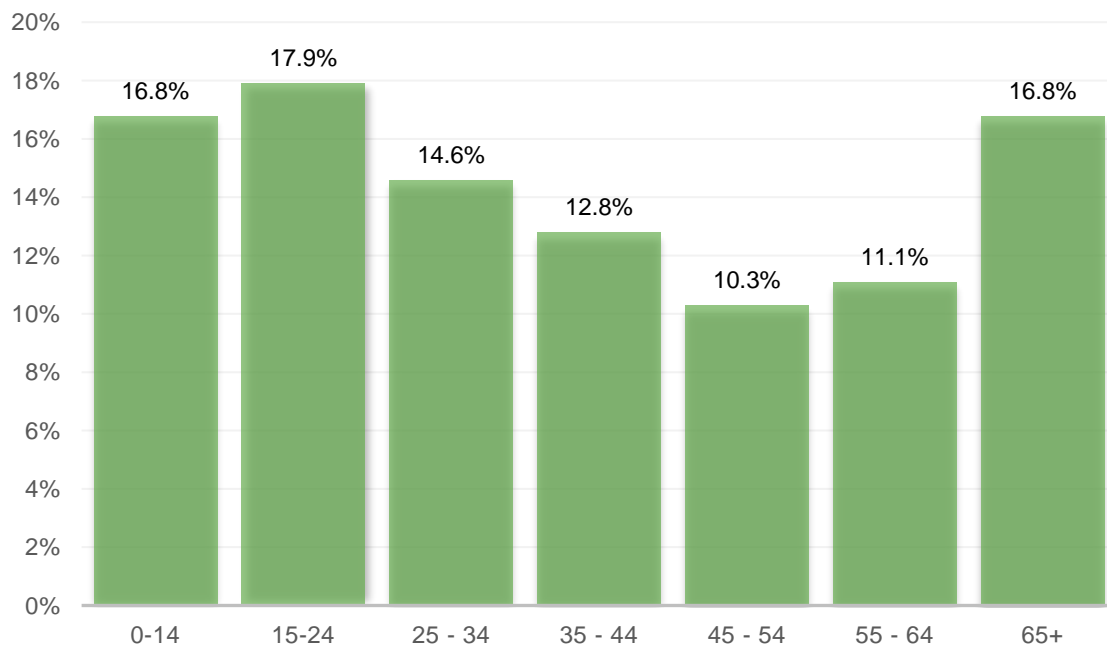


Figure 4. Study Area Age

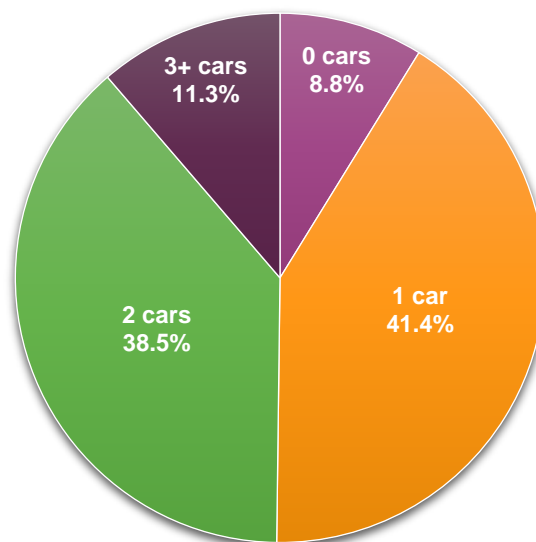


Figure 5. Study Area Car Ownership by Household

HEIGHTS REGIONAL ACTIVE TRANSPORTATION PLAN

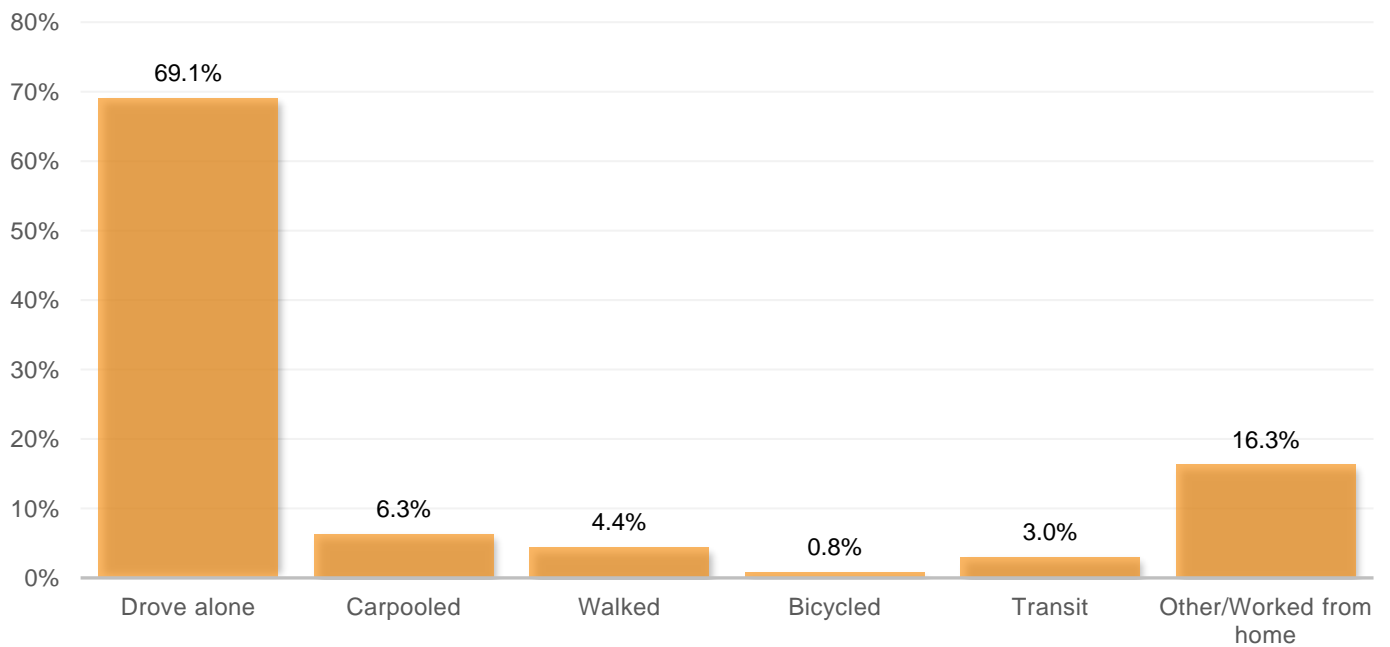


Figure 6. Study Area Commute Mode Share



Source: Burton Planning Services

People crossing Coventry Road in a crosswalk.

EXISTING PLANS, POLICIES, AND SUPPORTIVE PROGRAMS

This plan builds on prior plans (**Table 2**) and initiatives (**Table 3**) developed by regional entities and entities within Cleveland Heights, University Heights, and South Euclid. It looks to these plans for existing conditions data, issue identification, and recommendation support.

Table 1. Existing Plans and Policies

Plan/ Policy	Lead Agency	Year	Key Takeaways
Cleveland Heights Zoning Code	Cleveland Heights	2023	<p>The Cleveland Heights Zoning Code includes bicycle parking requirements applicable to new constructions or substantial additions to existing buildings. These regulations mandate the type and number of bicycle parking spaces based on the type of use and size of the development.</p> <p>The Code requires bicycle parking to be conveniently situated in relation to building entrances and street access. Short-term parking should be within 50 feet of building entrances, while long-term parking necessitates secure areas such as locked rooms, fenced spaces, or those monitored by security measures. Other requirements include minimum dimensions for bicycle spaces, design requirements for bicycle security, and signage if bicycle parking is not visible from the street.</p>
South Euclid Zoning Code	South Euclid	2023	<p>The South Euclid Zoning Code includes bicycle parking requirements that apply to most land uses except for single and two-family residential units and manufacturing/industrial uses. Required bicycle parking rates vary depending on the land use, such as one space per two units of multifamily housing and one space per 25 vehicle spaces for commercial uses. The Code includes design requirements, including that the facilities must be in accordance with the Association of Pedestrian and Bicycle Professional Bike Parking Guidelines. If a site provides structured parking, the bicycle parking is required to be inside the structure.</p>
University Heights Zoning Code	University Heights	2023	<p>The University Heights Zoning Code includes bicycle parking requirements only within the Cedar Center/Mixed-Use District (U-9) zone. The Code required one bicycle parking space for every 20 automobile parking spaces, with a minimum of two spaces. The bicycle parking is required to be clearly marked and separated from automobile parking and traffic, and businesses on the same block can provide a shared bicycle parking facility. If a site provides structured parking, the bicycle parking is required to be inside the structure.</p>
Bus Stop & Transit Street Design Guidelines	Greater Cleveland Transit Authority	2023	<p>This document provides best practices for bus stops and roadways to support transit as part of design projects. It includes a typology of local bus stops that incorporates different bus stop lengths and amenities, possible bus stop configurations, and preferred designs for bus-bike interaction areas. These guidelines should be considered whenever a new or redesigned pedestrian or bicycle facility is being considered along a transit route.</p>

HEIGHTS REGIONAL ACTIVE TRANSPORTATION PLAN

Plan/ Policy	Lead Agency	Year	Key Takeaways
Compton Greenway Project Implementation	Cleveland Heights	2022	<i>This presentation follows up on the 2019 study, detailed below, to describe recent design activity towards project implementation. The primary implementation elements are mini roundabouts and the pocket park between Berkeley Road and South Compton Road.</i>
Cedar-Lee Business District Parking Study	Cleveland Heights	2022	<p><i>The purpose of this study is to examine accessibility, usage, and management of existing on- and off-street parking in the Cedar-Lee Business District. It was primarily undertaken in response to a proposed mixed-use project and offers recommendations that include identifying potential new on-street parking spaces.</i></p> <p><i>The primary recommendations from the report that would impact active transportation are two areas along Washington Boulevard where it proposes new parking spaces that would require moving the sidewalk. It also proposes the creation of additional on-street metered spaces and new technology for payments. Additionally, the report includes recommendations for reconfiguring existing off-street parking lots and fostering shared parking agreements with entities like Cleveland Heights High School and the library.</i></p>
Cedar-Lee-Meadowbrook Traffic Memorandum	Cleveland Heights	2022	<p><i>The goal of the Cedar-Lee-Meadowbrook Traffic Study is to evaluate the traffic operations and assess the impacts on the transportation network in the Cedar-Lee District due to the proposed Cedar-Lee-Meadowbrook development.</i></p> <p><i>The proposed city recommendations from the Cedar-Lee-Meadowbrook Traffic Study prioritize improvements in signals progression and efficiency alongside coordination that ensures speed limit compliance within the Cedar-Lee District. To enhance pedestrian safety, the study suggests installing raised crosswalks at marked pedestrian crossings along Lee Road. Additionally, the study recommends replacing Rectangular Rapid Flashing Beacons (RRFBs) with Pedestrian Hybrid Beacons (HAWK signals) at pedestrian crossings.</i></p> <p><i>As part of the development project, the removal of an access drive near Wendy's is proposed. To maintain safe pedestrian access between the development and the high school, the study suggests converting the existing traffic signal at Wendy's driveway to a Pedestrian Hybrid Beacon (HAWK signal).</i></p>

HEIGHTS REGIONAL ACTIVE TRANSPORTATION PLAN

Plan/ Policy	Lead Agency	Year	Key Takeaways
Taylor Road Corridor Study	Cleveland Heights & University Heights	2021	<i>Cleveland Heights, along with the City of University Heights, obtained a Transportation for Livable Communities (TLCI) planning grant from NOACA to identify ways to make Taylor Road safer and more desirable for people biking and walking. Recommendations from the study include bicycle facilities, road diet strategies, midblock crossing improvements, walkable zoning, and streetscape standards. The study also recommends improving crosswalks, installing missing crosswalks, adding advanced stopbars, and basic crosswalk enhancements throughout the corridor. Additionally, new roadway configurations and lane widths are proposed for each segment of the corridor.</i>
Vision Zero Policy	Cleveland Heights	2021	<i>Cleveland Heights passed a Vision Zero policy that includes the goal of achieving zero annual traffic fatalities in the City. It also directs the City Manager to have City Departments cooperate and coordinate to prioritize the goals of zero traffic fatalities in the planning of future projects, facilities, or operations.</i>
South of Cedar Neighborhood Traffic and Parking Management Plan	Cleveland Heights	2020	<p><i>The purpose of the plan is to “understand, quantify, and address concerns” expressed by residents. This includes addressing perceived problems related to traffic volume and speed on neighborhood streets, as well as examining parking patterns and regulations on each street.</i></p> <p><i>The plan recommends testing bollards for bicycle lanes on North Park. Other recommendations within the South Cedar neighborhood include bicycle lanes, marked and raised crosswalks, and sharrows.</i></p> <p><i>To support traffic calming, the plan recommends corridor and intersection treatments including the introduction of mini roundabouts, chicanes, bump-outs, and choker/neckdowns, etc.</i></p>
Compton Road Greenway Study	Cleveland Heights	2019	<i>The goal of the study is to examine opportunities to create a safe, comfortable, and connected greenway that connects to Cain Park and extends into the surrounding neighborhood. The study provides designs and ideas for areas that are conceptually divided into five distinct zones. Some of the key recommendations include wayfinding, mini traffic circles, a new “pocket park” public space between Berkeley Road and South Compton Road, a shared street design in some areas, physically protected bicycle lanes in other areas, and an improved crossing to Cain Park.</i>
Cuyahoga County Greenways Plan	Cuyahoga County	2019	<p><i>Cuyahoga Greenways is a county wide initiative to envision, plan, and implement greenways and urban trails throughout Cuyahoga County. Facilities will connect public transportation and parks to offer recreational opportunities and options for getting around the county, improving the community’s mobility options, health, well-being, and economic vitality. Cuyahoga Greenways seeks to build an interconnected network that is safe and welcoming for people of all ages, abilities, and demographics, changing the way people think about and move around the county.</i></p> <p><i>Continued next page</i></p>

HEIGHTS REGIONAL ACTIVE TRANSPORTATION PLAN

Plan/ Policy	Lead Agency	Year	Key Takeaways
			<p>The plan was funded through the Northeast Ohio Areawide Coordinating Agency's (NOACA) Transportation for Livable Communities Initiative (TLCI) and powered by collaboration from the Cuyahoga County Planning Commission (CCPC), Cleveland Metroparks, and NOACA.</p> <p>The resulting Priority Projects Map takes 800 miles of candidate routes identified in the overall framework and distills them into 69 projects, (242.5 miles) divided into three categories: Critical Gaps (13.5 miles), Regional Links (122 miles), Key Supporting Routes (107 miles). Projects within the three cities in the study area are noted below by priority, with no critical gaps in the study area.</p> <p>Regional Links:</p> <ul style="list-style-type: none"> • South Belvoir Boulevard – On-street bicycle facility (Cleveland Heights, University Heights, and South Euclid) <p>Key Supporting Routes:</p> <ul style="list-style-type: none"> • Acacia Connector – Hybrid on-street and off-street bicycle facility (South Euclid) • Washington Boulevard – On-street bicycle facility (Cleveland Heights, University Heights)
Mayfield Road Multimodal Corridor Study	Cleveland Heights and South Euclid	2018	<p>The Mayfield Road Multimodal Corridor Study is designed to develop a cohesive vision for the corridor that effectively integrates transportation and land use.</p> <p>The plan recommends near-term strategies as they relate to bicyclists and pedestrians. These action steps include but are not limited to installing new markings where existing ones have faded, and assessing intersections for pedestrian crossing enhancements, especially along school routes. Additionally, the plan recommends a strategy to assess identified locations for additional new marked pedestrian crossings. To ensure ongoing effectiveness, the plan recommends an annual walk audit to be conducted along the corridor, identifying both maintenance requirements and capital improvement project needs.</p> <p>For Cleveland Heights, an evaluation and installation of shared lane markings for a short segment of Mayfield Road, east of E. 126th St with appropriate signage to be included is recommended. South Euclid has specific recommendations to assess and conduct relevant maintenance of sidewalk and ADA facilities along Mayfield Road.</p>
Green & Complete Streets Policy	Cleveland Heights	2018	<p>In May of 2018, the City of Cleveland Heights City Council adopted a Complete and Green Street Policy with a vision for the City to develop safe, comfortable, reliable, efficient, integrated and completely connected multimodal transportation network providing access, mobility, safety, and connections to all users. It was ranked #1 by the National Complete Streets Coalition in 2018 of 66 policies submitted.</p> <p>Continued next page</p>

HEIGHTS REGIONAL ACTIVE TRANSPORTATION PLAN

Plan/ Policy	Lead Agency	Year	Key Takeaways
			<i>The policy defines Complete and Green Streets as roadways designed and operated to safely and comfortably accommodate users of all ages and abilities, including cyclists, pedestrians, transit riders, elderly, wheelchair users, delivery and service personnel, and emergency responders, and to reduce, accommodate and slow stormwater runoff as part of a comprehensive stormwater management system.</i>
Cedar-Fairmount District Parking Study	Cleveland Heights	2018	<i>This report assesses existing and future parking and traffic conditions of the Cedar Fairmount Commercial District, with a specific focus on the Top-of-the-Hill (TOH) Mixed Use Development Site. Recommendations include the introduction of a mid-block crossing with pedestrian-activated flashing beacons on Euclid Heights Boulevard to the west of the parking garage access drive to facilitate pedestrian and bicycle access to the site from neighborhoods to the north. The report also recommends prohibiting certain turns such as northbound left turns from Delaware Road, eastbound left turns into the project site, and southbound left turns out of the project site during AM and PM peak hours to enhance safety.</i>
City of Cleveland Heights Master Plan	Cleveland Heights	2017	<p><i>The plan includes a vision statement for a complete transportation network and includes goals to support the development of high-quality transit connections, incorporate TOD concepts, and to develop a bicycle network that incorporates recommendations of the Eastside Greenway Plan and local bicycle plans in order to achieve silver bicycle friendly designation. Additionally, the plan includes a goal to promote biking and walking with a system of complete streets that incorporate options for all types of transportation.</i></p> <p><i>Action steps to assist in achieving the plan's goals include, but are not limited to, constructing an "Innovation Connector Trail" between University Circle and the city's Business Districts, adopting a complete and green streets policy, funding streetscape improvements in the Cedar Fairmount district, Cedar Lee district, and on Noble Road, and reviewing key intersections with high pedestrian and bicycle crash rates.</i></p> <p><i>Since plan adoption, Cleveland Heights has adopted a Complete and Green Streets Policy (2018).</i></p>
Warrensville Center Road and Cedar Road Multimodal Transportation Plan	University Heights	2015	<p><i>The plan seeks to create better multimodal transportation connectivity by improving the existing infrastructure.</i></p> <p><i>On Cedar Road, recommendations include relocating crosswalks at intersections, adding new curb ramps and refuge areas, adjusting pedestrian signal heads, and upgrading to countdown pedestrian signals. The plan proposes modification such as such as installing new curb ramps and crosswalks, relocating stop lines and some crosswalks, and upgrading to countdown pedestrian signals at the intersections of Cedar Road with University Square West and University Square East Entrance.</i></p> <p><i>Continued next page</i></p>

HEIGHTS REGIONAL ACTIVE TRANSPORTATION PLAN

Plan/ Policy	Lead Agency	Year	Key Takeaways
			<p><i>Other key location-specific within the plan related to bicycle and pedestrian facilities include:</i></p> <ul style="list-style-type: none"> • <i>Adding new crosswalks and curb extensions at key intersections such as Warrensville Center Road at Traymore Road and Hillbrook Road.</i> • <i>Installing crosswalks, curb ramps, and upgraded pedestrian signals at the intersection of Warrensville Center Road and University Square Driveway.</i> • <i>Adding new curb ramps and upgrading countdown pedestrian signal heads at the intersections of Warrensville Center Road with Silsby Road and Washington Boulevard.</i> • <i>Adding a crosswalk with new curb ramps and upgrading pedestrian signal heads at the intersection of Warrensville Center Road with Meadowbrook Boulevard and Milford Road.</i> • <i>Reducing the number of driveway curb cuts on Cedar Road within the commercial zones near South Taylor Road, Warrenville Center Road, and South Green Road.</i> • <i>Adding a pedestrian crossing island, adjusting signal timing, and upgrading to pedestrian countdown signals at the intersection of Warrensville Center Road and Fairmount Boulevard.</i>
Eastside Greenway Plan	Cuyahoga County	2015	<p><i>The goal of the Eastside Greenway Plan is to examine existing and potential greenways that can connect residents to jobs, recreation, services, etc. The plan also provides an opportunity for multi-jurisdictional coordination for connecting greenways.</i></p> <p><i>Projects within the three cities in the study area are noted below by priority.</i></p> <p><i>Transformative/high priority projects:</i></p> <ul style="list-style-type: none"> • <i>Warrensville Center Road – Reconstruction and enhancement (Noble Road south to Harvard Road or Miles Avenue, Cleveland Heights, University Heights, and South Euclid).</i> <p><i>Near-term projects:</i></p> <ul style="list-style-type: none"> • <i>South Belvoir Boulevard – Buffered bicycle lanes. (Monticello Boulevard to Warrensville Center Road, South Euclid)</i> • <i>Monticello Boulevard – Widening sidewalk into a new side path trail along south side of the road. (Mayfield Road to Euclid Creek Trail, Cleveland Heights and South Euclid)</i> • <i>Noble Road – Reconfiguration of road to accommodate dedicated bicycle facilities and streetscape enhancement. (Euclid Avenue to Warrensville Center Road, Cleveland Heights)</i> <p><i>Completed projects:</i></p> <ul style="list-style-type: none"> • <i>Martin Luther King Jr. Drive – Bicycle facility improvements along Martin Luther King Jr. Drive, including bicycle lanes. (Lake to Lakes Trail to Miles Avenue, Cleveland Heights)</i>

HEIGHTS REGIONAL ACTIVE TRANSPORTATION PLAN

Plan/ Policy	Lead Agency	Year	Key Takeaways
Facilitative Bicycle and Transit Travel in University Circle and Cleveland Heights (Bicycle Network Study and Missing Links Study)	Cleveland Heights	2013	<p>The study was conducted in response to rapid employment growth and its associated parking demand in University Circle to evaluate transportation needs and to encourage Cleveland Heights residents who live and work in University Circle to consider alternate transportation modes.</p> <p>The recommended actions are influenced by factors such as traffic volume, road geometry, and topography. Additionally, the study places specific emphasis on establishing a comprehensive network of bicycle connections between University Circle and Cleveland Heights. Bikeway corridor recommendations for Superior, Euclid, Mayfield, East Boulevard, East 105th Street, East 108th Street, among others include, but are not limited to, the installation of bicycle facilities such as bicycle lanes, buffered bicycle lanes, multi-use trails, sharrows, signage, bicycle boulevards, etc.</p> <p>A key follow-up from this study was bicycle lane improvements on Edgehill Road in 2013, with additional intersection improvements in 2019.</p>
Cedar-Taylor District Streetscape and Neighborhood Identity Improvements (presentation)	Cleveland Heights	2013	<p>This presentation provides recommendations for a successful, unique Cedar Taylor business district and was developed using Community Development Block Grant (CDBG) funds. It includes a list of "Infrastructure concepts for consideration" such as the introduction of sharrows or painted bicycle lanes along Cedar Road, pedestrian light fixtures, bus stop updates, and posted bus routes, bicycle routes, and maps. It also suggests bicycle safety signage to remind road users. Under "Development concepts for consideration," the presentation includes bicycle valet, and under "Design/streetscape concepts for consideration" it includes new street furniture, bicycle racks, and bike boxes in the Cedar Taylor district.</p>
Cedar-Fairmount Transportation & Streetscape Plan	Cleveland Heights	2009	<p>The purpose of the study is to advocate for strategic investments in public infrastructure to create a multi-modal district in Cleveland Heights, emphasizing the importance of accommodating various modes of transportation, promoting safety, and enhancing the overall appeal and vibrancy of urban areas.</p> <p>Recommendations include improvements for bicyclists and pedestrians in the Cedar-Fairmount district focusing on enhancing safety, connectivity, and overall urban experience. The plan suggests a reconfiguration of the roadway to meet ODOT standards, with wider lanes, striping, and "sharrows" for cyclist accommodation. The Avenue Concept prioritizes widened sidewalks, offering space for outdoor activities and seating, while sustainable initiatives like rain gardens contribute to environmental considerations.</p> <p>Sharrows have been added along Cedar Road and there have been various sidewalk and streetscape amenity updates since the plan was adopted, but many of the proposed pedestrian realm improvements such as wider sidewalks and reduced pedestrian crossing distances have not been implemented.</p>

Table 2. Existing Supportive Programs

Program	Lead Agency	Est. Year	Program Summary
Bike with the Mayor	Bike Cleveland, Cuyahoga Greenway Partners, and Slow Roll Cleveland	2023	This series of rides provides residents with the opportunity to engage in physical activity with their elected leaders while learning about greenspaces and trails in their area. In 2023 (the first year of the program), the series included rides in Cleveland Heights and University Heights, and was focused on locations along the Cuyahoga Greenways network.
Cuyahoga County Greenprint	Cuyahoga County	2023	This is a set of mapping and planning tools developed and maintained by Cuyahoga County to help communities and their staff, civic and environmental leaders, nature advocates, and developers do their work. The online mapping layers include bicycle facilities, bicycle and pedestrian crashes, and the Level of Traffic Stress (LTS) from NOACA.
Car Free Day	Cleveland Heights	2023	World Car-Free Day is an international event held each September that encourages people in more than 2,000 cities in 40 countries to travel car-free or car-lite by using transit, bicycling, walking, carpooling, or telecommuting.
Park(ing) Day	Cleveland Heights	2023	Park(ing) Day is an event where collaborators across the world temporarily transform parking spaces into “Park(ing)” spaces: tiny temporary parks and places for art, play, and activism.
Neighborhood Traffic Calming Program	Cleveland Heights	2022	The goal of Cleveland Heights’ Neighborhood Traffic Calming Program is to reduce excessive speeding and/or traffic volumes on local and collector streets. The process for including streets in the program must be initiated by neighborhood residents, not the city. The response to Cleveland Heights’ new Neighborhood Traffic Calming program has been overwhelming! Eight streets have successfully petitioned for traffic calming and are in the queue for traffic studies. As a result, the city is temporarily no longer accepting new applications for neighborhood traffic calming so it can focus on those streets that have already applied.
Shared Spaces Program	Cleveland Heights	2022	<p>Temporary outdoor dining facilities, parklets, and pedlets are creative and cost-effective ways to add outdoor seating and spaces. The City of Cleveland Heights’ program focuses on creating additional private seating areas managed and maintained by private businesses. Outdoor dining facilities may be located on the sidewalk or on private property; parklets and pedlets are located in the parking lane adjacent to the curb and are designed to be an extension of the sidewalk.</p> <p>The City of Cleveland Heights’ Shared Spaces Program Application Manual leads applicants through the application process for authorization to install a temporary outdoor-dining facility, parklet, or pedlet within the public right-of-way or on private property.</p>

HEIGHTS REGIONAL ACTIVE TRANSPORTATION PLAN

Program	Lead Agency	Est. Year	Program Summary
Bicycle and Scooter Share Memorandum of Understanding	Cuyahoga County, Cleveland Heights, University Heights, and South Euclid	2021	In 2021, Cleveland Heights, University Heights, and South Euclid signed memorandums of understanding with Cuyahoga County to expand bicycle- and scooter-sharing operations to the cities. The memorandum includes the county sharing revenue and data for trips that start in each city, as well as allowing each city to establish a maximum number of micromobility vehicles and specific station locations.
“Complete and Green Streets Policy” Project Checklist	Cleveland Heights	2022	This checklist is intended to assist the Cleveland Heights Planning and Public Works Departments during the planning and design phases of roadway projects to support carrying out the Complete Streets Policy. It includes a series of descriptive and yes/no questions regarding existing infrastructure and the proposed project to identify what has been included in previous plan, any inadequacies in the existing infrastructure, infrastructure needs, and design opportunities.
All Geared Up Event	Cleveland Heights	2015	This is a community cycling event in the City of Cleveland Heights with one- and two-mile family fun rides, safety demonstrations, and other fun activities.
Bicycle Friendly CommunitySM Designations	Cleveland Heights	2013	The League of American Bicyclists evaluates communities that apply for the Bicycle Friendly Community SM designation against the five Es (Equity & Accessibility, Engineering, Education, Encouragement, and Evaluation & Planning), and awards designations from Bronze to Platinum depending on a jurisdiction’s performance on each criterion. Cleveland Heights has achieved a Bronze-level designation since 2013.
Weeknight Community Rides	Cleveland Heights Bike Coalition (Bike Cleveland)	2013	Over the summer and fall, the Heights Bicycle Coalition organizes casual bicycle rides for approximately 8-10 miles. In 2023 rides were approximately every other week from June through October, and the organization is considering weekly rides in 2024.
Bike Route and Suitability Maps	Northeast Ohio Area Coordinating Agency (NOACA)	2013	NOACA develops printable maps of bicycle routes for each of the five counties within the region that are updated every three to five years and has an online GIS portal with bicycle routes updated more regularly. The organization also maintains a GIS layer of bicycle Level of Traffic Stress (LTS). The Cuyahoga County printable map was last updated in 2019.
Heights Area Bike Map	Cleveland Heights Bike Coalition (Bike Cleveland)	2013	The Heights Bicycle Coalition publishes a map of recommended routes and destinations in Cleveland Heights, University Heights, and Shaker Heights. The map includes routes for different experience levels, as well as noting significant elevation changes. It was last updated in 2018.

HEIGHTS REGIONAL ACTIVE TRANSPORTATION PLAN

Program	Lead Agency	Est. Year	Program Summary
Walk or Bike to School Day	Cleveland Heights, University Heights, South Euclid	2012	<i>Walk or Bike to School Day is an event organized nationally to encourage students to walk, bike, or roll to school. The Cleveland Heights-University Heights School District has participated since 2012, and South Euclid has participated since 2013.</i>
Bike to Work Day	Heights Bicycle Coalition, Cleveland Heights	2012	<i>Bike to Work Day is an annual event organized nationally to encourage people to bike for their commute. The Heights Bicycle Coalition supports Bike to Work Day by providing free coffee and pastries at the intersection of Edgehill and Overlook.</i>
Bicycle and Pedestrian Counts	NOACA	2004	<i>NOACA has conducted bicycle and pedestrian counts since 2004, and they reorganized the project to follow best practices from the National Bicycle and Pedestrian Documentation Project (NBPD) in 2011. Counts at three to five locations have been conducted in the plan area in the most recent five years (2019 to 2023), covering ten total locations.</i>
Safety Town	Cleveland Heights, South Euclid	Began 1980s or earlier	<i>Safety Town is a child safety program offered to children who are entering Kindergarten in the fall. In South Euclid it is offered by the Euclid Police Department in conjunction with Euclid City Schools, and in Cleveland Heights it is offered by the Cleveland Heights Community Center. Students learn valuable safety lessons from police and other safety-based organizations. Both cities have offered Safety Town for many decades, dating back to the 1980s or earlier.</i>

TRANSPORTATION FUNDING AND INVESTMENTS

RECENT INVESTMENTS

In the cities of Cleveland Heights, University Heights, and South Euclid, several active transportation-related projects have been completed, including enhanced crossings, bicycle parking, bicycle lanes, pedestrian facilities, and intersection improvements.

As a result of recent improvements, the City of Cleveland Heights was awarded a Bronze Level Bicycle Friendly Community Designation by the League of American Bicyclists, and the Edgehill Road bicycle facility was awarded the “Best Bike Lane Project” by the Greater Cleveland Trails and Greenways Conference. Improvements in University Heights have increased pedestrian access to John Carroll University and business districts in the area, and South Euclid’s Complete Streets project along Green Road connects the Euclid Creek Reservation to the South Euclid-Lyndhurst Branch Cuyahoga County Public Library, schools, and Notre Dame College via dedicated bicycle lanes along the corridor.

In Cleveland Heights, recent improvements include:

- » Cedar Road sharrows and sidewalk updates
- » Edgehill Road buffered bicycle lane (2013)
- » Intersection improvements to encourage residents to use active transportation between the city and University Circle (2019)

In University Heights, recent improvements include:

- » Warrensville Center Road bicycle lanes (2018)
- » Cedar Road / Taylor Road pedestrian improvements (2018)
- » Warrensville Center Road pedestrian crossing islands (2019)
- » Intersection improvements at Silsby Road and Washington Boulevard to reduce pedestrian crossing distances and vehicle turning speeds (2023)

In South Euclid, recent improvements include:

- » Green Road Complete Streets project with dedicated bicycle lanes (2022/23)
- » New curb cuts and accessible crosswalks with road resurfacing projects (ongoing)

CURRENT OR PLANNED INVESTMENTS

Cleveland Heights, University Heights, and South Euclid have completed various studies and plans to prepare for future investments in pedestrian and bicycle infrastructure as shown in **Table 1**. Additionally, the Heights Regional ATP will assist the three cities in prioritizing future improvements and future funding applications.

Currently, there are four projects planned and funded within the study area:

- » Warrensville Center Road / Traymore Road intersection curb bump-outs (2027, University Heights)
- » Warrensville Center Road / Hillbrook Road intersection curb bump-outs (2027, University Heights)
- » Taylor Road Corridor Project Phase 1 implementation (University Heights and Cleveland Heights)
- » Heights Regional Neighborhood Greenway Phase 1 improvements, which will add signing and striping improvements on several corridors in the plan area (Cleveland Heights, University Heights, and South Euclid)



Source: Burton Planning Services

The recently redesigned Silsby Road and Washington Boulevard intersection.

EXISTING 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. This section provides a summary of each existing conditions analysis, which consist of the following:

- » **Summary of Facility Inventory**
- » **Equity**
- » **Network Utilization**
- » **Network Connectivity**
- » **Safety** (including a crash analysis and systemic safety analysis)
- » **Level of Traffic Stress**

DATA CONSIDERATIONS AND LIMITATIONS

Existing conditions analyses were conducted with data from the following sources: Cleveland Heights, University Heights, South Euclid, Northeast Ohio Areawide Coordinating Agency (NOACA), ODOT Transportation Information Mapping System (TIMS) and GIS Crash Analysis Tool (GCAT), U.S. Census Bureau, and StreetLight Data (StreetLight). Analyses were conducted with available data and there are data limitations that should be acknowledged, particularly with crash data and StreetLight. To help fill data gaps, this planning process also relies on stakeholder and general public input.

Crash Data Limitations

Local law enforcement agencies submit the crash reports that provide the raw data for GCAT. Although crash reports are the best way to obtain information about a large quantity of crashes, they have limitations. For example, the total number of crashes may be higher than captured because of unreported crashes.

Crashes may go unreported for a variety of reasons. Some crashes go unreported because of distrust or fear of police due to negative prior experiences with law enforcement. Another reason for unreported crashes is that the police departments often do not have enough officers to respond to high crash volumes during rain, snow, or other inclement weather events. This means even when police are called, they do not have the staff to respond to all crashes. In those situations, a crash report would only be filed if one of the involved parties had the resources and ability to either self-report the crash online or to travel to police headquarters to self-report.

When crashes are reported, the data within those crash reports has limitations as well. For example, crash reports may underestimate the severity of a crash because adrenaline at the time of a crash may mask injury or the severity of an injury. Additionally, it can be difficult to determine if factors such as speed or distracted driving are involved in a crash particularly if police or other witnesses are not present at the time of the crash. It is useful to keep these limitations in mind when considering what information is presented by crash reports and what information is not documented.

StreetLight Data Limitations

StreetLight uses smartphone mobility data, also known as Location-based Services (LBS), to estimate pedestrian and bicycle volumes throughout North America. While this is a valuable source of information on pedestrian and bicycle activity in the study area, it is important to understand the data limitations. Since LBS does not include information on a person's mode of travel, StreetLight infers how a person is moving based on factors such as distance, speed, and acceleration during a trip. Mode estimates are calibrated and validated by StreetLight using permanent pedestrian and bicycle counters installed by transportation agencies, together with more manual data collection including travel diaries and surveys collected by StreetLight. However, there are relatively few permanent pedestrian and bicycle counters compared to vehicle counters, which provides less data for validation. There is also sampling bias towards people who own cell phones, which could underestimate travel for populations such as lower-income, younger, and older people.

In general, based on validation analysis developed by StreetLight, estimates for pedestrians and bicyclists are more accurate for roads with higher pedestrian and bicycle volumes because there is more data for those modes on more popular routes. Volumes for off-road trails are also more accurate because there is less potential for confusion with other modes.

SUMMARY OF FACILITY INVENTORY

The cities of Cleveland Heights, South Euclid, and University Heights are inner-ring suburbs of Cleveland. The cities include neighborhoods that easily connect to commercial areas along tree-lined streets, some with planted medians, and a thorough sidewalk network. Each city is committed to providing a road network that meets the needs of drivers, pedestrians, bicyclists, and bus riders to provide quality spaces for all people. The three cities are served not by highways, but by a system of local streets that provide connectivity to key destinations across the region. Existing transportation facilities are shown in **Figure 7** and described below.

Existing Pedestrian Infrastructure

The region has a well-connected pedestrian network with sidewalks throughout most of the area. Recent pedestrian infrastructure improvements include the installation of pedestrian crossing islands along Warrensville Center Road between Meadowbrook Road and Hillbrook Road (2019), and various pedestrian crossing improvements using Safe Routes to School funding. While the region benefits from sidewalks along most streets, there are a few notable locations with missing sidewalks, and several arterials have long gaps between marked and controlled crossings. Locations within the plan area that do not have sidewalks or have limited access to sidewalks include North Park Boulevard from Arlington Road to West St. James Parkway (north side), Warrensville Center Road from Bayard Road to Oakwood Drive (west side), Belvoir Boulevard from Bluestone Road to Monticello Boulevard (west side), and Monticello Boulevard from Belvoir Boulevard to Quarry Drive (south side).

Existing Biking Infrastructure

The three cities are actively pursuing the development of a connected bicycle network through recent planning efforts, including the Heights Regional Active Transportation Plan. The existing bicycle infrastructure provides connections to regional destinations, for example parks and commercial corridors, in certain areas, but lacks overall connectivity throughout each city and throughout the region.

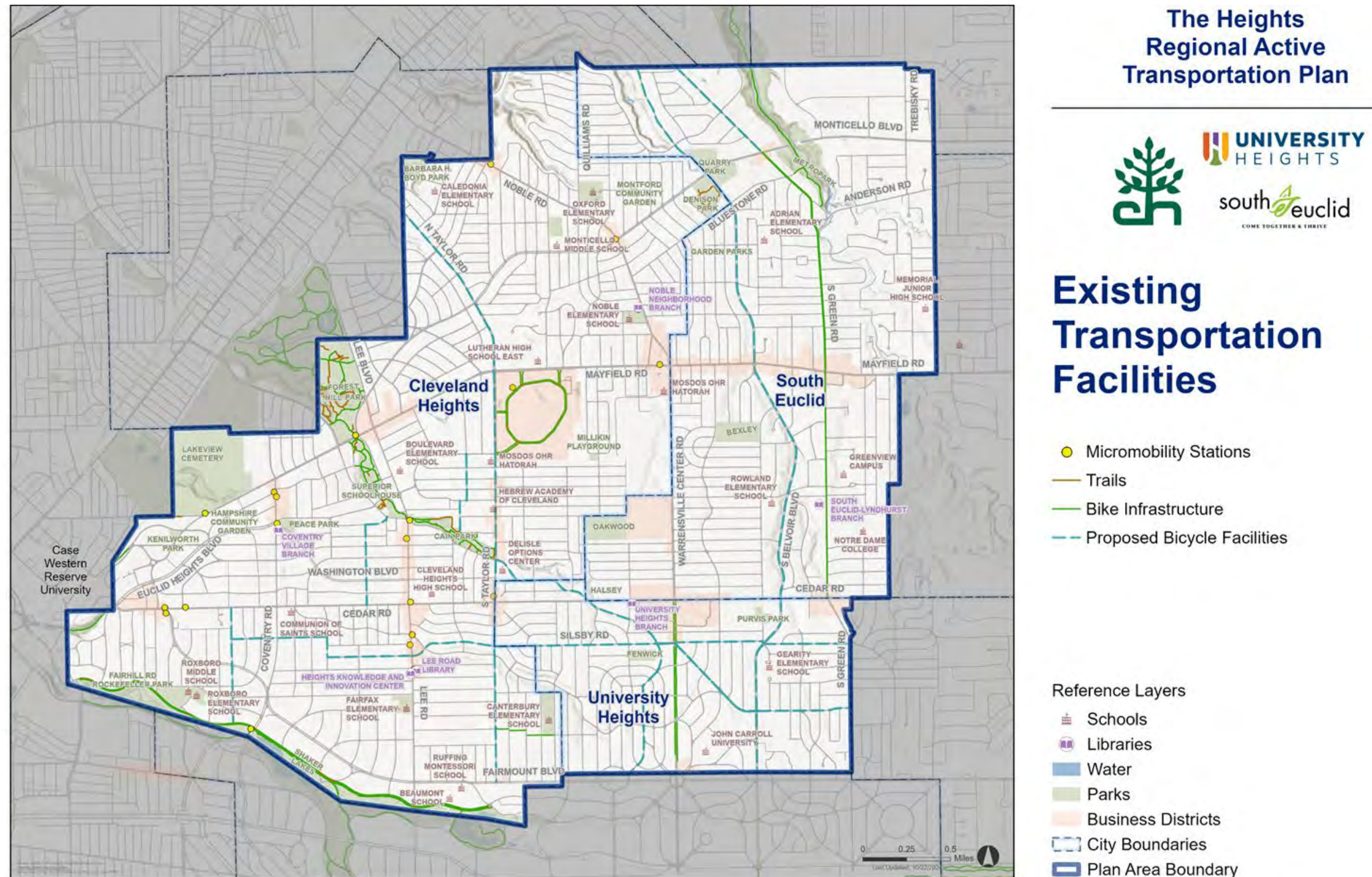


Figure 7: Existing Network Map

Currently, Shared Use Paths (SUP) provide access for pedestrians and bicyclists along Euclid Creek Parkway within the Euclid Creek Reservation, within the connected park system of Cain Park, Cumberland Park, and Forest Hill Park, and along Cedar Road from Euclid Heights Boulevard to Case Western Reserve University located west of the tri-city area. There is also an off-street trail south of Canterbury Elementary School connecting portions of Bradford Road. On-street bicycle facilities provide connections for people riding bicycles on Lee Road from North Park Boulevard to Ormond Road, Green Road from Cedar Road to Monticello Road, Warrensville Center Road from Fairmont Boulevard to Cedar Road, North Park Boulevard from Lee Road to Harcourt Drive, and Severance Circle. Stakeholders have noted challenges to the existing on-street bicycle network include narrow bicycle lanes on Lee Road and maintenance and debris issues in bike lanes on heavily trafficked roads.

All three cities have signed memorandums of understanding with Cuyahoga County to allow bicycle and scooter share companies to operate within their jurisdictions, and Cleveland Heights has designated micromobility stations where shared bicycles and scooters are allowed to park.



Source: Burton Planning Services

Side use path facility in Euclid Creek Reservation.

Existing Public Transit Services

The region is served by the Greater Cleveland Regional Transit Authority (GCRTA). Seven of GCRTA's lines provide regular service in the area. The East 260 Green line runs every 60 minutes, while the Warrensville, Lakeview-Lee, Lee Boulevard-East 123, Quincy-Cedar, Mayfield-Hough, and Monticello lines run every 30 minutes. Warrensville Center Road, Noble Road, and Cedar Road are all identified by GCRTA as a Priority Transit Corridors. There is currently no park-and-ride within the tri-city area.

Regular transit service in the area is currently available on the following roads:

- » Monticello Boulevard
- » Mayfield Road
- » Cedar Road
- » Lee Road
- » Warrensville Center Road
- » Noble Rd

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 occurs among communities of color, older adults, and low-income populations.¹ 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, the Ohio Department of Transportation (ODOT) performed an active transportation need analysis for the entire state. It created a composite need score for every census tract in the state, with 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.

Active transportation need, shown in **Figure 8**, is more concentrated north of Mayfield Road in Cleveland Heights and South Euclid. There are also areas identified as high-need in the area bounded by Lee Road, Mayfield Road, Green Road, and Silsby Road, together with a census tract near Case Western Reserve University and another bounded by Coventry Road, Cedar Road, and Fairmount Boulevard.

Active Transportation Demand

Walk.Bike.Ohio's statewide analysis also looked at the demand for active transportation infrastructure to serve as an estimate for the likelihood of people walking or bicycling in an area. This analysis used the variables employment density, population density, walk/bicycle commute mode share, park density,

presence of college/universities, retail employment density, and the number of people 200% below the poverty line.

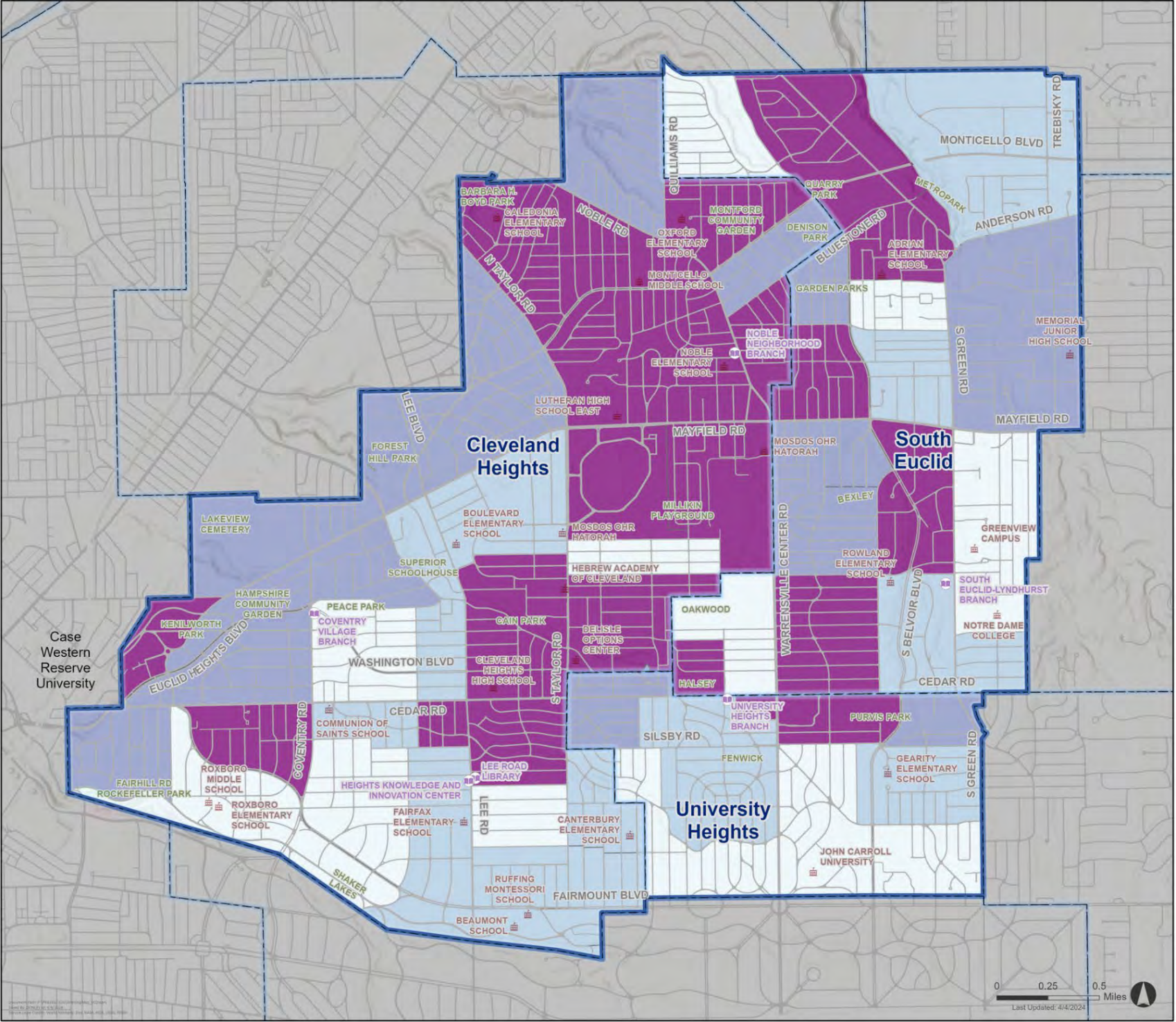
The census tracts with high demand, shown in purple in **Figure 9**, tend to be concentrated in the geographic middle of the study area. Much of the central part of Cleveland Heights, University Heights, and South Euclid between Mayfield Road and Silsby Road is classified as high demand as well as the areas around Case Western Reserve University and John Carroll University.

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. **Figure 10** combines active transportation demand and need with demand shown as a blue color ramp, high need shown as a red color ramp, and the in between values a mix of these colors. The most important areas for investment, areas with a combined high demand and need, are shown in dark purple.

In Cleveland Heights, University Heights, and South Euclid, the main indicators for active transportation demand were higher employment density, population density, retail employment density, and park density. The three main indicators for active transportation need are higher shares of the population that are considered to be part of a minority group, experiencing poverty, and without access to a motor vehicle.



People at the dog park in Quarry Park.



The Heights Regional Active Transportation Plan

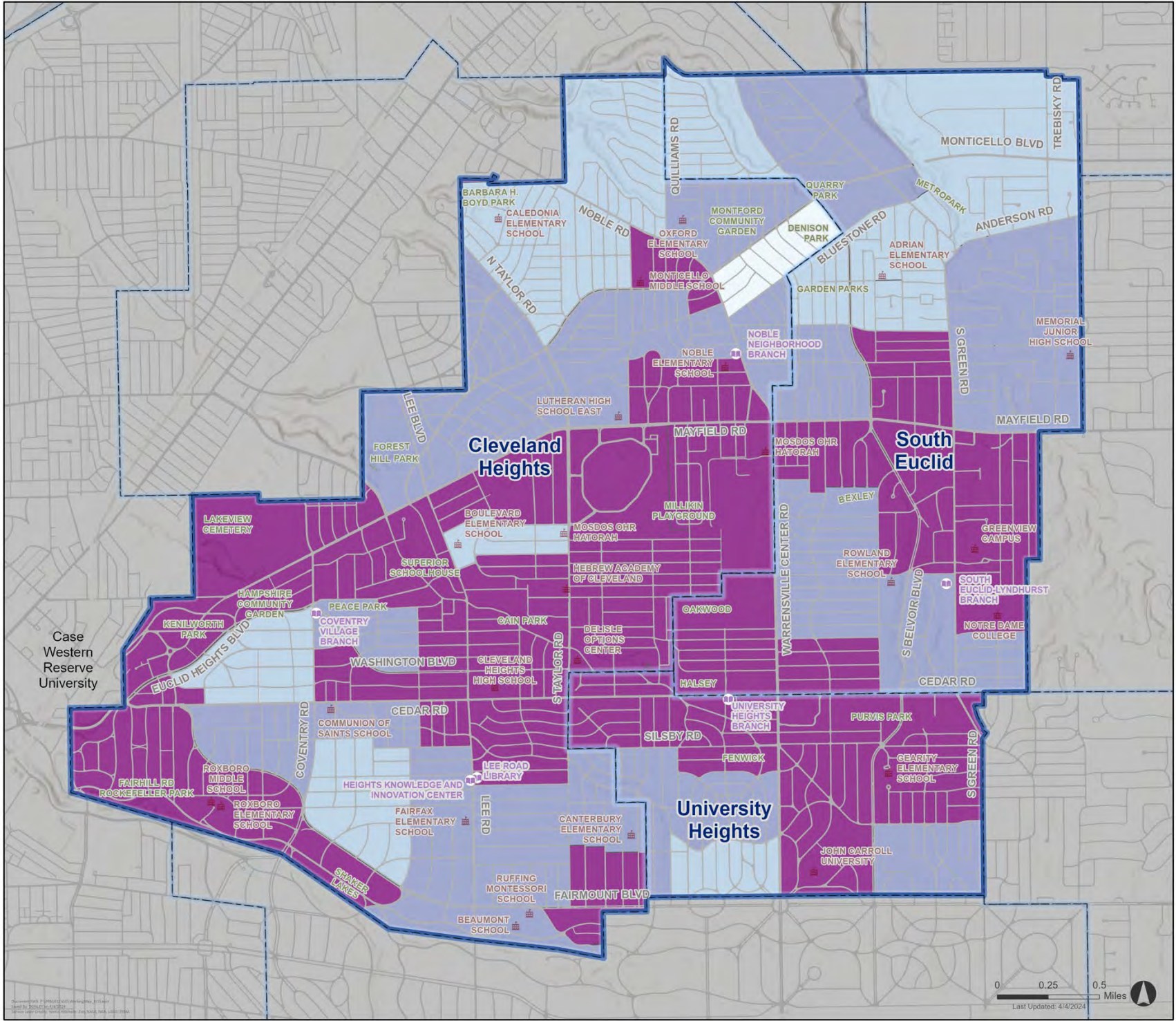


Active Transportation Need

- Active Transportation Need
- Low
 - Medium
 - High

- Reference Layers
- Schools
 - Libraries
 - City Boundaries
 - Plan Area Boundary

Figure 8: Active Transportation Need



The Heights Regional Active Transportation Plan



Active Transportation Demand

Active Transportation Demand

- Low
- Medium
- High

Reference Layers

- Schools
- Libraries
- City Boundaries
- Plan Area Boundary

Figure 9: Active Transportation Demand

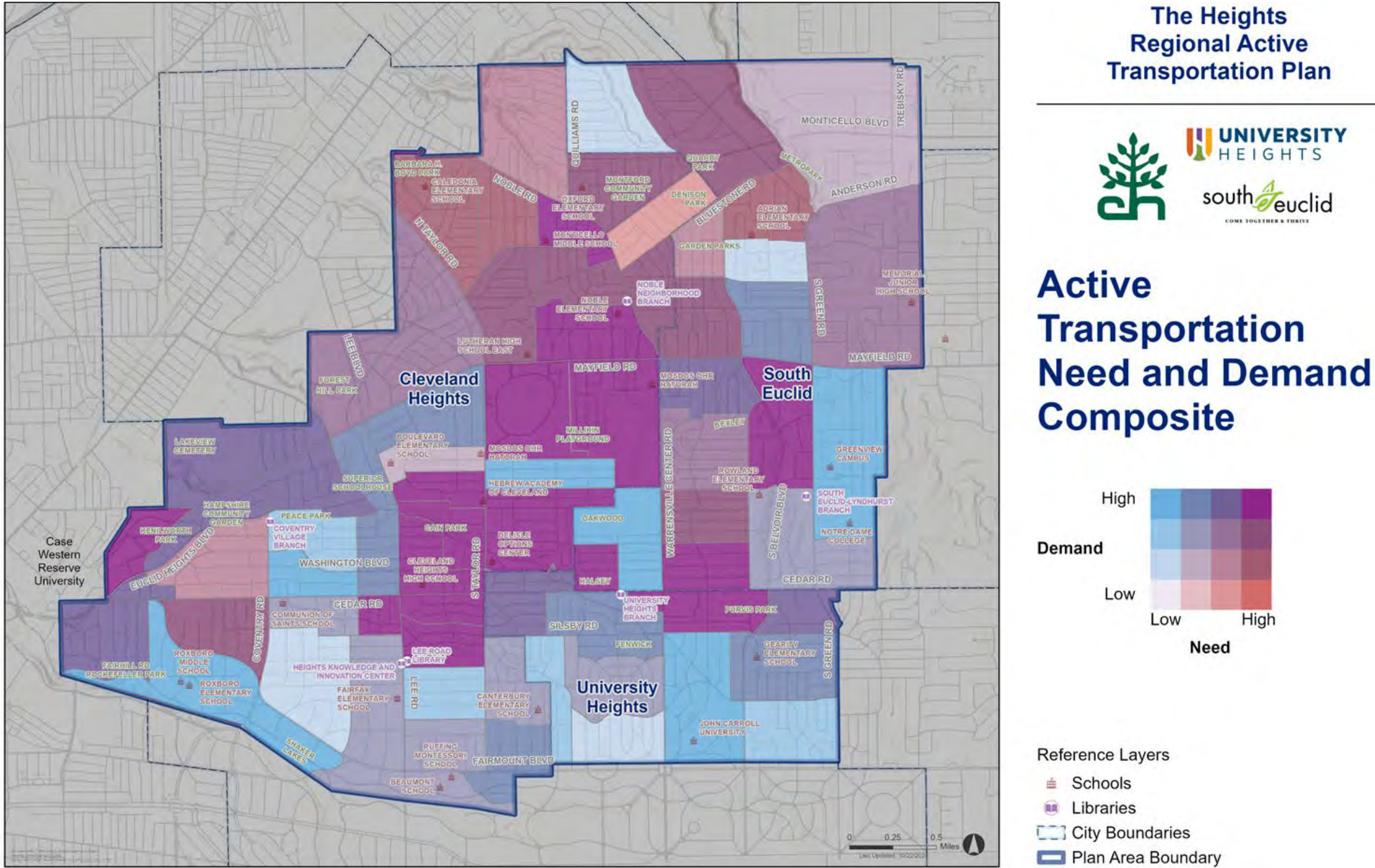


Figure 10: Active Transportation Demand and Need

NETWORK UTILIZATION

Level of Walking and Bicycling Activity in Cleveland Heights, South Euclid, and University Heights

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 the study area provides an understanding of where people are already walking and bicycling, and where there may be a lack of infrastructure, due to low levels of walking and bicycling activity.

Walking and Bicycling Activity

The project team used StreetLight to analyze levels of walking and bicycling in the region (**Figure 11** and **Figure 12**) and better understand where and when walking and bicycling activity is currently occurring within the study area. StreetLight data was downloaded for April through June and August through October of 2019 for all primary and secondary roads, together with a limited number of residential roads based on recommendations from the three cities.⁸

Business districts and commercial areas within the region tend to have higher walking and biking activity. Additionally, areas near bus lines, schools or universities, parks, and places with existing bicycle facilities tend to have higher biking volumes.

Areas with the highest levels of walking activity include:

- » Coventry Road between Mayfield Road and Euclid Heights Boulevard
- » Mayfield Road near Coventry Road; medium-high levels of walking extend to Forest Hill Park
- » Mayfield Road and Green Road commercial area; medium-high levels of walking extend to Warrensville Center Road
- » Lee Road between Cedar Road and Ormond Road; medium-high levels of walking extend to Cain Park
- » Warrensville Center Road commercial area (near Cedar Road)
- » Belvoir Boulevard (near John Carroll University)

Areas with the highest levels of biking activity include:

- » Edgemoor Road west of Overlook Road (existing buffered bicycle lanes)
- » North Park Boulevard (existing bicycle lanes)
- » Taylor Road (painted sharrows)

⁸ StreetLight Data estimates for walking and biking have not been updated with data after April 2022, and COVID likely affected walking and biking activity between March 2020 and mid-2021. This means that 2019 is the most recent available full year with results not affected by COVID.

There are additional medium-high levels of biking activity in the following areas:

- » Mayfield Road near the Lakeview Cemetery
- » Mayfield Road between Taylor Road and Warrensville Center Road
- » Coventry Road between Cedar Road and Fairmount Boulevard

Due to the timeframe for the StreetLight results, the recently constructed Green Road bicycle lanes (constructed in 2022-23) are not reflected in the biking activity data. City staff and stakeholders also noted some areas where actual volumes may be different from what is reported by StreetLight:

- » Cleveland Heights noted there is an area of medium-high walking activity along Taylor Road between Severance Circle and Cain Park, which may underestimate total pedestrian activity due to members of the Jewish community in that area using cell phones less on the Sabbath and other holidays.
- » University Heights noted that areas near John Carroll University, such as student housing along Warrensville Center Road, likely have higher pedestrian volumes than what is shown.
- » Stakeholders noted that pedestrian volumes within business districts (which would not be captured as activity along the roads) is likely higher than what is shown.

NOACA conducts manual bicycle and pedestrian counts in May and September each year for two-hour periods across Northeast Ohio. In the most recent five years (2019 to 2023), these counts have included three to five locations per year in the plan area, covering ten total locations. The five locations in 2023 were as follows:

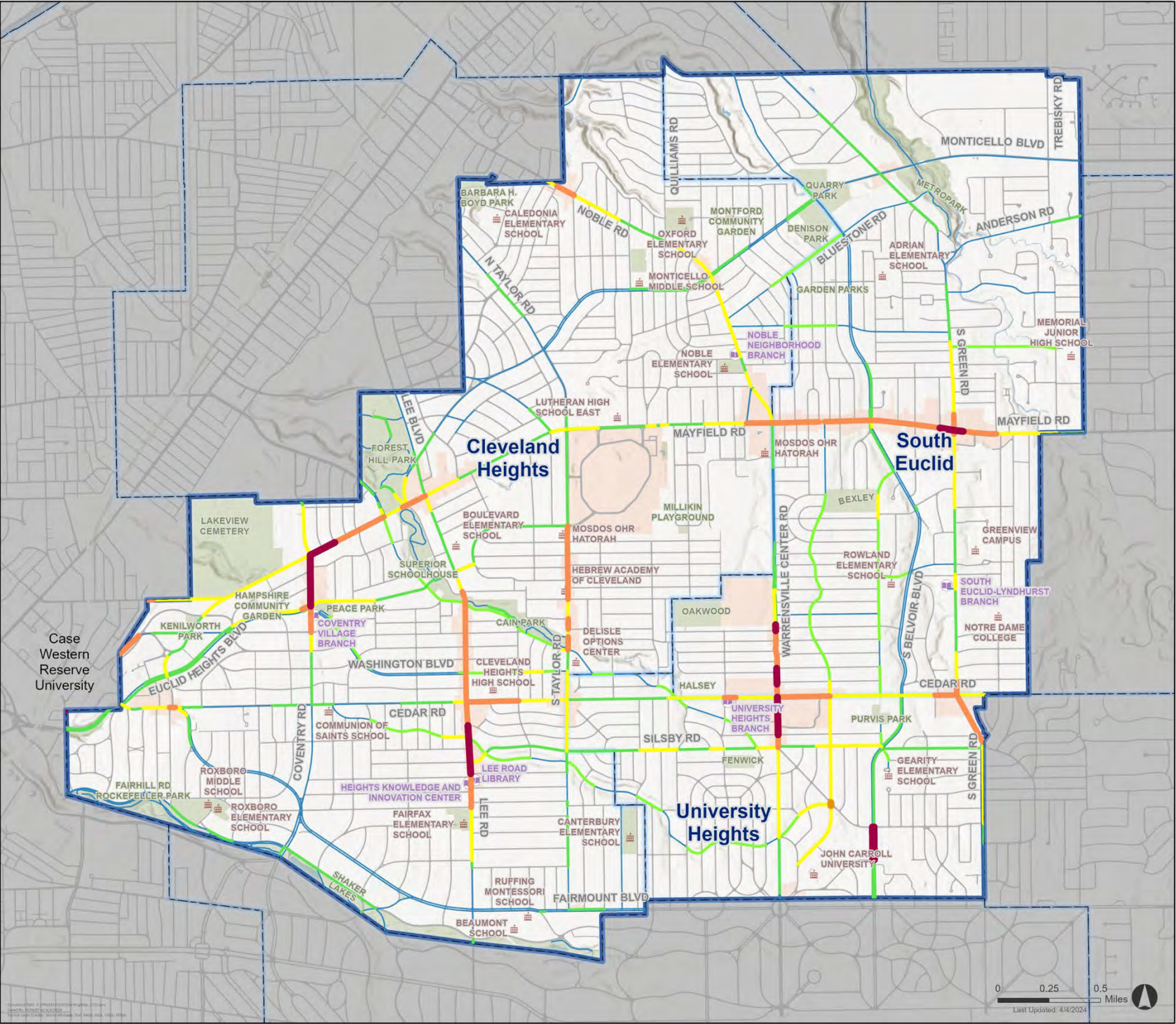
- » Edgehill Road west of Overlook Road
- » Cedar Road west of Overlook Road
- » Noble Road north of Monticello Boulevard
- » Lee Road south of Washington Boulevard
- » Silsby Road east of Lee Road

The 2023 results indicate that Silsby Road near Lee Road had the highest pedestrian volumes of the five locations, likely from visitors to the nearby commercial area. While Silsby Road is not noted as a high-volume pedestrian road from StreetLight, the adjacent section of Lee Road is estimated to have high pedestrian activity.



The Edgehill Road buffered bicycle lane west of Overlook Road

Edgehill Road west of Overlook Road had the highest bicycle volumes, likely from the route being a low-stress way to travel between Cleveland and Cleveland Heights near Case Western Reserve University. This is consistent with StreetLight results on Edgehill Road.



The Heights Regional Active Transportation Plan



Average Daily Pedestrian Volumes

Average Daily Pedestrian Traffic

- Low
- Medium
- High
- Very High

Reference Layers

- Schools
- Libraries
- Water
- Parks
- Business Districts
- City Boundaries
- Plan Area Boundary

Figure 11. Walking Activity Map

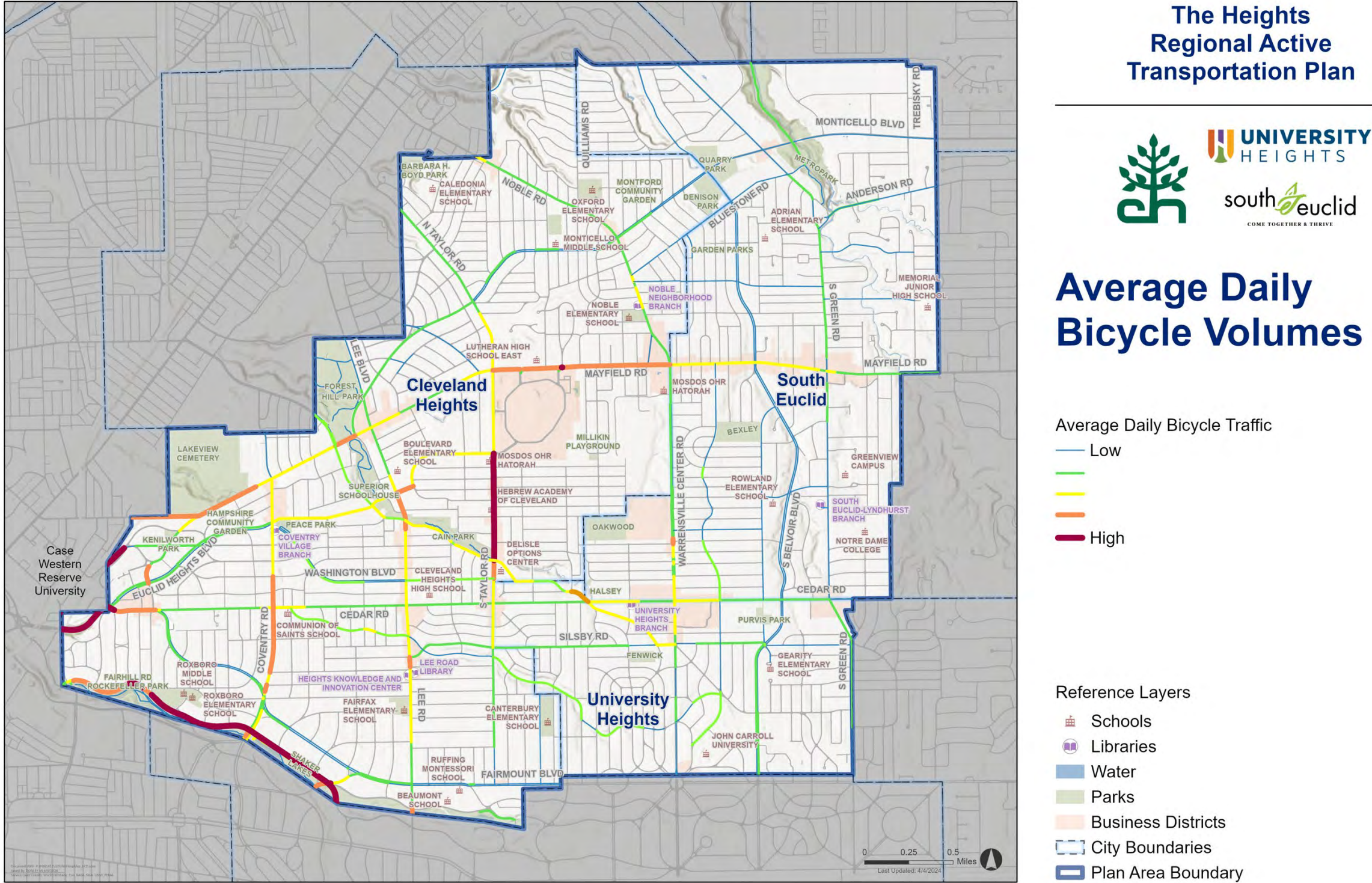


Figure 12. Biking Activity Map

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.

Pedestrian and Bicycle Facilities

The project team utilized existing inventories of pedestrian and bicycle facilities from the cities of Cleveland Heights, University Heights, and South Euclid, and supplemented those data sources with information from ODOT and recent street imagery from online sources. The inventory helped the team understand the completeness and connectedness of the current active transportation system.

Major gaps in the current network include:

- » Missing sidewalk on the west side of Warrensville Center Road from Bayard Road to Oakwood Drive, Cleveland Heights; this segment includes two GCRTA bus stops on the side of the road without a sidewalk.
- » Missing sidewalk on the north side of North Park Boulevard from Arlington Road to West St. James Parkway, Cleveland Heights.
- » Missing sidewalk on the west side of Belvoir Boulevard from Bluestone Road to Monticello Boulevard and the south side of Monticello Boulevard from Belvoir Boulevard to Quarry Drive, both adjacent to Denison Park in South Euclid.
- » Relatively few roads have dedicated bicycle facilities and are likely uncomfortable for most road users, as noted in the **Level of Traffic Stress** section. This results in barriers for north-south and east-west bicycle travel throughout the project area.

Even with the existing gaps in the network, almost all destinations are currently accessible by sidewalks and roads where bicycling is allowed.

Gaps and Generators Mapping

A gap analysis examines physical breaks in an active transportation network, such as sidewalk gaps or missing connections between bicycle facilities as well as generators to biking and walking trips. It can also identify deficiencies in policy, planning, and programming that pose barriers to walking and bicycling. During a stakeholder committee meeting with representatives from the three cities, attendees identified the following gaps and generators beyond those identified above:

» Gaps

- Intersection crossings are uncomfortable for pedestrians at the Cedar Road and Fairmount Boulevard intersection
- Intersection crossings are uncomfortable for pedestrians at the Coventry Road and Fairmount Boulevard intersection
- Intersection crossings are uncomfortable for pedestrians and bicyclists at the Cedar Road and Taylor Road intersection
- A lack of good bicycle and pedestrian connection to Purvis Park from the neighborhoods to the south via the Wrenford Road right-of-way
- Direct connection between Raymont Boulevard and the Cedar Road/Taylor Road intersection
- Additional connections to Euclid Creek Reservation via Bluestone Road

» Generators

- State and regional parks including Cain Park, Euclid Creek Reservation, Forest Hill Park, and Shaker Lakes
 - Cleveland Heights noted that they are working with Shaker Heights and the Northeast Ohio Sewer District on a redesign of the Shaker Lakes area along Lee Road, North Park Boulevard and South Park Boulevard. The work will include a network of trails and passive recreation which should increase its popularity.
- Business districts such as Cedar Warrensville, Cedar Green, Cedar Lee, Coventry Village, Mayfield Corridor, and Severance Commercial District
- John Carroll University, Notre Dame College, and Case Western Reserve University (in Cleveland, just west of Cleveland Heights)⁹



Bexley Park in South Euclid.

⁹ Since the stakeholder meeting, Notre Dame College announced its closure in Spring 2024: <https://www.cleveland.com/news/2024/02/notre-dame-college-to-close-after-spring-semester.html>

Participants noted that while many areas are walkable and bikeable, there are some missing connections, especially crossings across key roads. Recent projects that added pedestrian crossing amenities, reduced vehicle lanes on wide arterials, and added new bicycle facilities were appreciated.

In addition to the input received from the stakeholder committee members, the public provided feedback on existing gaps and generators through an online survey and interactive online web map application. The following gaps and generators were identified by the public, including areas with existing infrastructure that is inadequate and/or the public feels unsafe:

» Gaps

- Cedar and Cottage Grove intersection, Cedar Road and Warrensville Center Road intersection, Cedar Road and Overlook Road Intersection, Cedar Road and Fairmount Boulevard intersection, Cedar Road/Harcourt Road/Cedar Glen Road/Euclid Heights Boulevard intersection, Cedar Road and Lee Road intersection
- Euclid Heights Boulevard and Coventry intersection, Euclid Heights Boulevard and Cedar Road intersection, Euclid Heights Boulevard and Edgehill Road intersection, Euclid Heights Boulevard and Woodridge Road intersection
- Scarborough Road and Coventry Road intersection
- Monticello Road and Noble Road intersection, Monticello Road and Lee Road intersection
- Lee Road and Tullamore Road intersection, Lee Road and Kensington Road intersection, Lee Road and Corydon Road intersection, Lee Road and Ormond Road intersection
- St. James Road and Fairmount Road intersection
- Mayfield Road and Green Road intersection
- Coventry Road and Hampshire intersection
- Euclid Heights Boulevard
- Lee Road
- Overlook Road
- Warrensville Center Road
- Coventry commercial district
- Mayfield Road
- Fairmount Boulevard
- Cedar Fairmount district

» Generators

- Parks
- Outdoor Performing Arts Venue
- Libraries
- Universities/Colleges
- Business Districts
- Schools (Daycare, Pre-school, K-12)

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

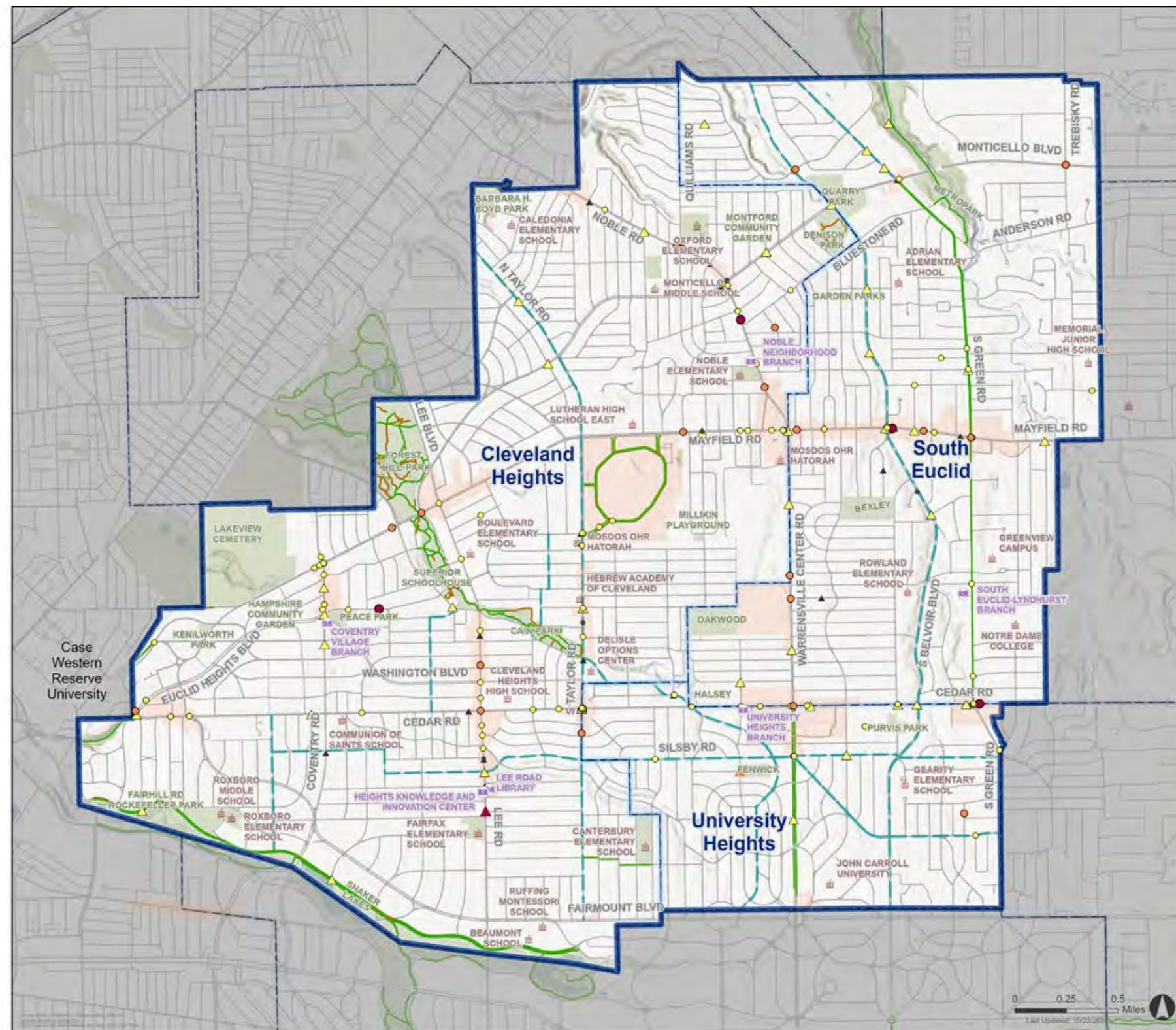
Five years of bicycle and pedestrian crash data were reviewed using ODOT's GIS Crash Analysis Tool and mapped in **Figure 13**. This exercise identified problem locations for people walking and bicycling in the plan area. During the time period reviewed (2018-2022), there were 179 crashes involving bicyclists and pedestrians in the study area, 25 of which resulted in serious injuries and five of which resulted in fatalities (**Figure 14** and **Figure 15**). Crashes involving bicyclists and pedestrians peaked at 49 crashes in 2019 (**Figure 14**). However, in 2020 the number of crashes dropped by almost half from the year before, most likely due to the impact of COVID-19 on commuting and recreation patterns. The number of crashes rose again in 2021 to 35 then decreased to 30 in 2022. While complete 2023 results were not available at the start of the project, there were four fatal pedestrian crashes in Cleveland Heights in 2023, and ODOT recorded six pedestrian or bicycle severe injury crashes in the plan area. This represents an unfortunate uptick in fatal and severe injuries compared to 2018-2022, when there were zero to two fatal crashes, and four to six serious injury crashes each year.¹⁰

During the time period reviewed (2018-2022), there were more pedestrian crashes than bicycle crashes, with 112 and 67 in the five-year period, respectively (**Figure 15**). Pedestrian crashes also represented over 85 percent of fatal and severe crashes, accounting for 22 of the 25 serious injury crashes and four of the five fatal crashes. Intersection related crashes were the most common cause of serious injuries and fatalities for crashes involving a pedestrian or person on a bicycle, followed by those involving young drivers or senior drivers (**Figure 16**).

Concentrations of pedestrian crashes were in the following areas:

- » Lee Road from Superior Road to Meadowbrook Boulevard
- » Coventry Road and Mayfield Road intersection
- » Mayfield Road from Severance Circle to Green Road
- » Noble Road from Glenwood Road to Monticello Boulevard
- » Cedar Road from Fenwick Road to South Green Road
- » Intersection of Cedar Road and South Green Road

¹⁰ Fatalities from 2023 were verified using news reports. Severe injuries were based on ODOT TIMS results as of March 11, 2024. No fatalities were reported in University Heights or South Euclid in 2023.



The Heights Regional Active Transportation Plan



Bicycle and Pedestrian Crashes

Pedestrian Crash Severity

- Fatal
- Serious Injury
- Injury
- Property Damage Only

Bicycle Crash Severity

- ▲ Fatal
- ▲ Serious Injury
- ▲ Injury
- ▲ Property Damage Only

Reference Layers

-  Schools
-  Libraries
-  Water
-  Parks
-  Business Districts
-  City Boundaries
-  Plan Area Boundary
-  Trails
-  Bike Infrastructure
-  Proposed Bicycle Facilities

Figure 13: Bike and Pedestrian Crashes 2018-2022

Concentrations of bicycle crashes were in the following areas:

- » Lee Road from Scarborough Road to Meadowbrook Boulevard
- » Mayfield Road from Noble Road to Sheridan Road
- » Intersection of Mayfield Road and Belvoir Boulevard
- » Cedar Road from Warrensville Center Road to Green Road

Some locations have experienced crashes where drivers go over the curb and do not hit pedestrians but could cause injuries if anyone was present. Cleveland Heights noted one such location at the South Taylor Road/Fairmount Boulevard intersection. The systemic safety analysis in the next section identifies locations that may be at risk for future crashes based on recent pedestrian and bicycle crashes.

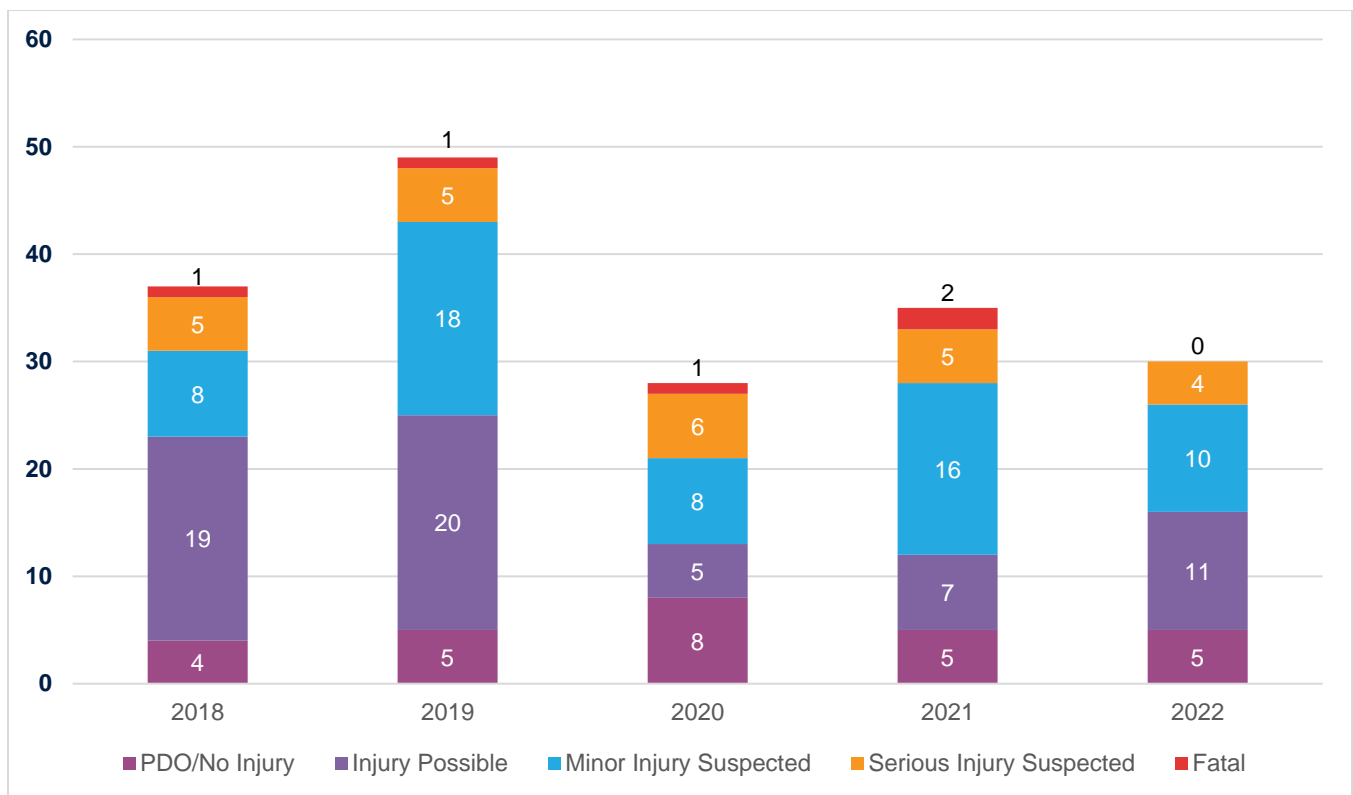


Figure 14: Crash Trends by Severity 2018-2022

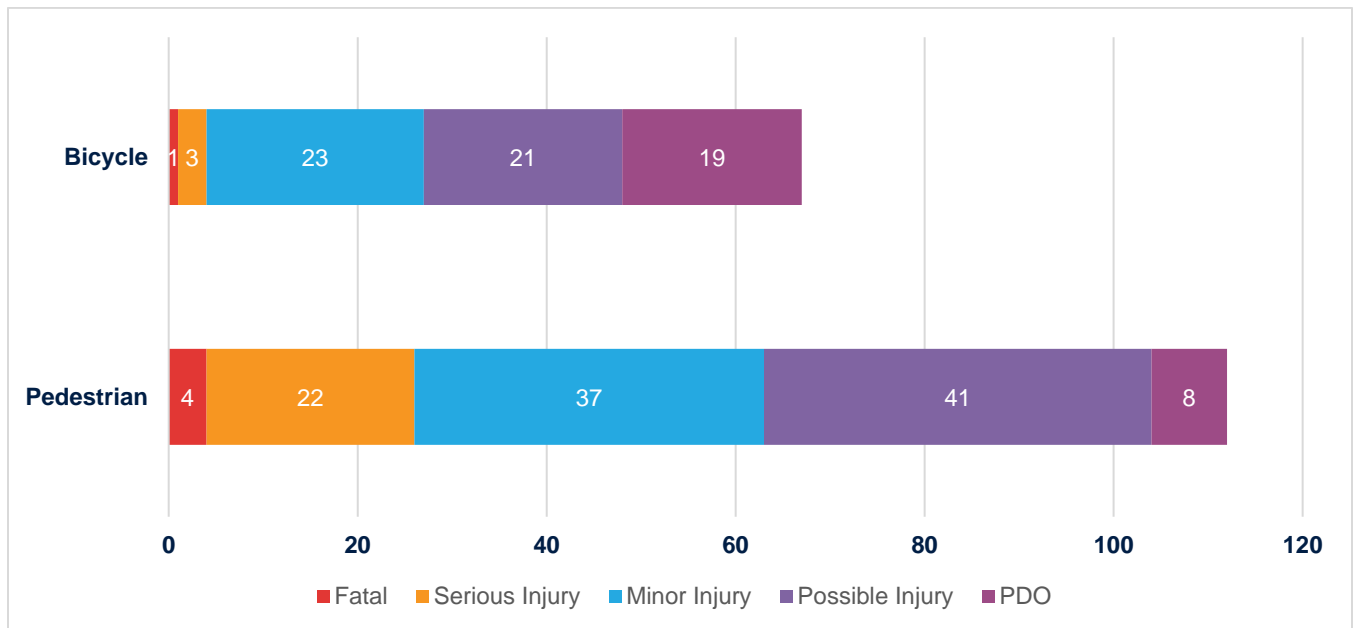


Figure 15: Crash Type Statistics, 2018-2022

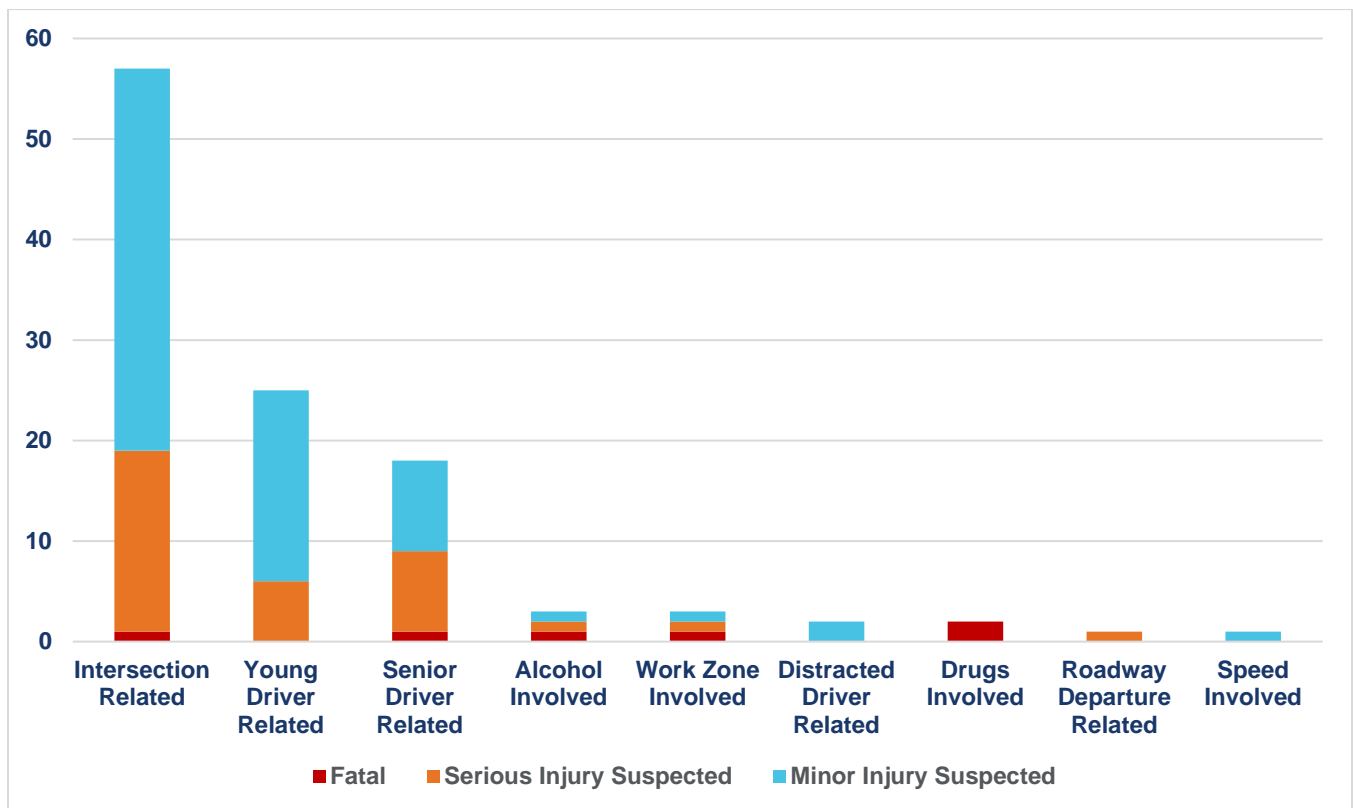


Figure 16: Emphasis Area by Severity

Systemic Safety Analysis

Systemic Safety Project Selection Tool

The Federal Highway Administration (FHWA) developed the Systemic Safety Project Selection Tool to build upon current safety management practices for identifying roadway safety problems.¹¹ The tool provides guidance on how to expand beyond traditional site-specific analysis to system-wide based approach. The tool is a step-by-step process to conducting a systemic safety analysis and determining high-risk roadways in the system. The process includes identifying focus crash types and risk factors, screening and prioritizing candidate locations, selecting countermeasures, and prioritizing projects. A systemic safety analysis was conducted for Cleveland Heights, University Heights, and South Euclid focusing on the first two steps of the FHWA's Systemic Safety Project Selection Tool:

- » Identify Focus Crash Types and Risk Factors
- » Screen and Prioritize Candidate Locations

Identify Focus Crash Types and Risk Factors

Focus crash types

This step of the process identifies which types of crashes should be used for the subsequent analysis steps. Since this ATP is focused on making walking and biking safer, all pedestrian and bicycle crashes in the analysis timeframe were selected as the focus crash types.

Focus facilities

Crash data from years 2018 to 2022 was used to determine broad location categories where bicycle and pedestrian crashes most often occur, called “focus facilities” in this section. Most pedestrian crashes occurred at intersections, as shown in **Figure 17**, with about 25 percent more crashes at unsignalized intersections compared to signalized intersections. Nearly 60 percent of bicycle crashes occurred at unsignalized intersections, followed by signalized intersections, as shown in **Figure 18**. After categorizing intersection crashes by the intersection type (e.g., T-intersection or four-way intersection), crashes were further divided based on roadway classification. The analysis showed that most of the crashes for pedestrians and bicyclists were on arterial roadways. It also showed that while pedestrian crashes on segments were not the most common location, these crashes were highly concentrated on arterial. Therefore, the focus facilities are:

- » Arterial roadway segments (pedestrians)
- » Signalized four-way intersections that include arterial roads (pedestrians and bicyclists)
- » Unsignalized T-intersections that include arterial roads (pedestrians and bicyclists)
- » Unsignalized four-way intersections that include arterial roads (pedestrians)
- » Unsignalized four-way intersections that include collector roads (bicyclists)

¹¹ Systemic Safety Project Selection Tool, Federal Highway Administration, <https://safety.fhwa.dot.gov/systemic/fhwasa13019/chap1.cfm#chap11>

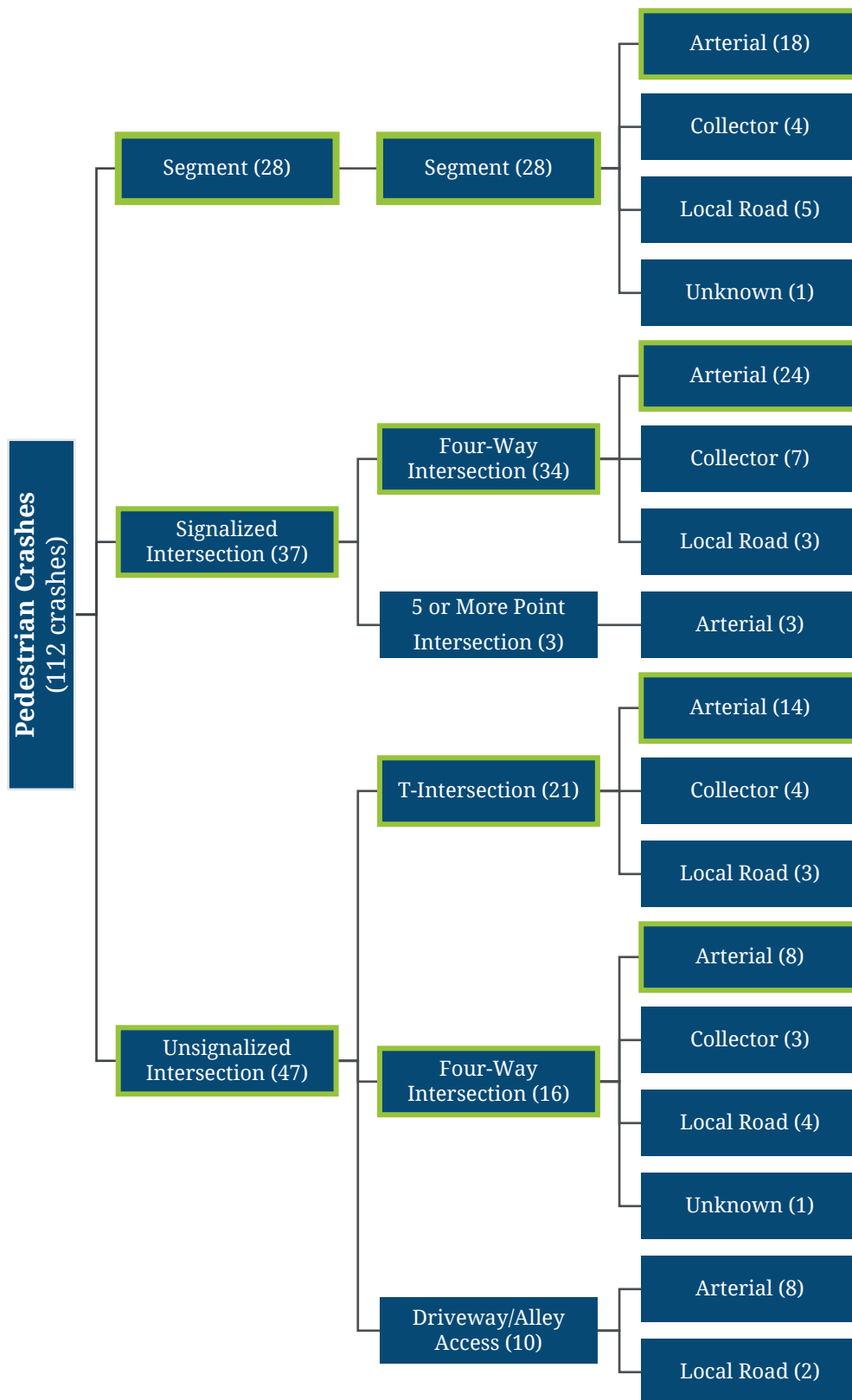


Figure 17: Pedestrian Crash Tree Diagram

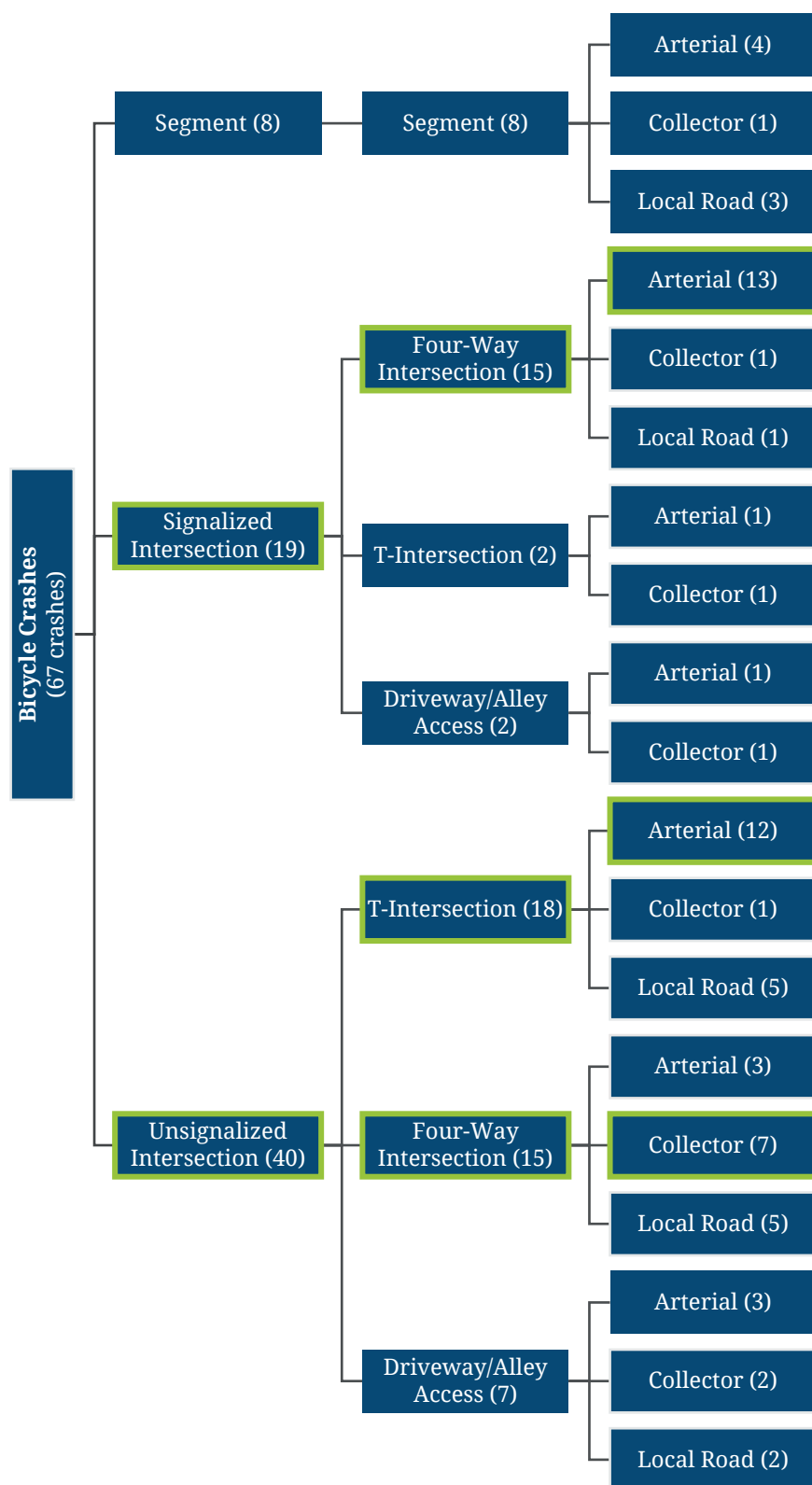


Figure 18: Bicycle Crash Tree Diagram

Identify and evaluate risk factors

In order to define the focus facility types further, potential characteristics of locations where pedestrian and/or bicycle crashes occur were developed and evaluated to determine if they were risk factors for pedestrian and/or bicycle crashes. A characteristic was generally considered to be a risk factor if most crashes occurred on segments sharing that feature, although professional judgement could change whether something was a risk factor. For example, 76 percent of pedestrian crashes on arterial roadway segments were within 1/16 of a mile of a business district, so business district proximity was included as a risk factor for that crash type. Upon review of local, regional, and state data available for Cleveland Heights, University Heights, and South Euclid, characteristics of facilities found to increase the risk for pedestrian and/or bicycle crashes to occur within Cleveland Heights, University Heights, and South Euclid are summarized in **Table 3**.

Table 3: Facility Risk Factors for Pedestrians and Bicyclists

<i>Location Type</i>	<i>Volume</i>	<i>Speed Limit</i>	<i>Business District Proximity</i>	<i>School Proximity</i>	<i>Number of Lanes</i>	<i>Other</i>
<i>Pedestrians</i>						
<i>Arterial roadway segments</i>	<i>>10,000</i>	<i>35 mph or more</i>	<i>Within 1/16 of a mile</i>	<i>Not a factor</i>	<i>4</i>	<i>Dark road with lighting</i>
<i>Signalized four-way intersections with arterials</i>	<i>>10,000</i>	<i>Not a factor</i>	<i>Within 1/16 of a mile</i>	<i>Not a factor</i>	<i>4</i>	<i>None</i>
<i>Unsignalized T-intersections with arterials</i>	<i>>10,000</i>	<i>Not a factor</i>	<i>Within 1/16 of a mile</i>	<i>Within a quarter mile</i>	<i>4</i>	<i>None</i>
<i>Unsignalized four-way intersections with arterials</i>	<i>>10,000</i>	<i>Not a factor</i>	<i>Within 1/16 of a mile</i>	<i>Not a factor</i>	<i>4</i>	<i>Dark road with lighting</i>
<i>Bicyclists</i>						
<i>Signalized four-way intersections with arterials</i>	<i>>15,000</i>	<i>Not a factor</i>	<i>Within 1/16 of a mile</i>	<i>Not a factor</i>	<i>4</i>	<i>No bicycle facility</i>
<i>Unsignalized T-intersections with arterials</i>	<i>>15,000</i>	<i>Not a factor</i>	<i>Within 1/16 of a mile</i>	<i>Within a quarter mile</i>	<i>4</i>	<i>No bicycle facility</i>
<i>Unsignalized four-way intersections with collectors</i>	<i>7,500-10,000</i>	<i>Not a factor</i>	<i>Within 1/16 of a mile</i>	<i>Within a quarter mile</i>	<i>4</i>	<i>No bicycle facility</i>

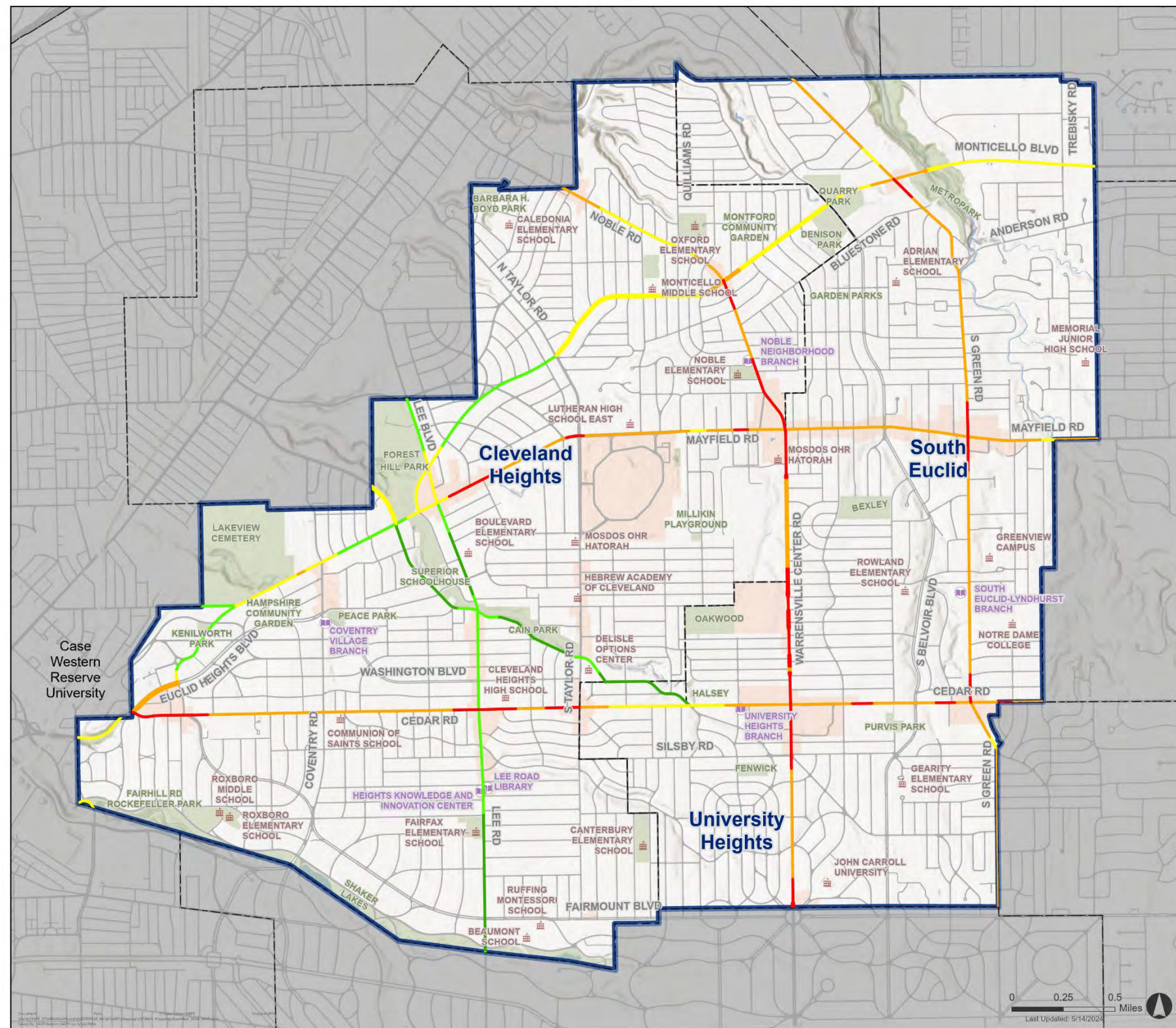
Screen and Prioritize Candidate Locations

After determining the focus facilities and associated risk factors in the transportation network, a systemwide analysis was conducted to screen all segments in the system and identify the high-risk network locations. Based on the analysis described above and available data, all of the risk factors shown in **Table 3** were considered except for dark roads with lighting. This risk factor was not included since lighting would typically be a solution to nighttime crashes rather than a risk factor. The lighting risk factor, which was identified on arterial roadway segments and unsignalized four-way intersections with arterials, suggests the cities could evaluate existing nighttime lighting in high-risk areas and consider design solutions such as pedestrian-scale lighting.

Each road segment and intersection was evaluated to determine if it had one or more of the risk factors, and each risk factor contributed one point towards a risk score. **Figure 19** illustrates the pedestrian risk scores for roadway segments. Since sidewalks were present for all but one of the 18 pedestrian crashes on arterial segments, the cities should also consider additional pedestrian crossing facilities in high-risk areas to reduce crossings outside of marked facilities. **Figure 20** illustrates the intersection risk scores for pedestrians, and **Figure 21** illustrates the intersection risk scores for bicyclists. Different treatments could be considered for high-risk intersections depending on the intersection type and whether it is high risk for pedestrians, bicyclists, or both. The results of this analysis should be considered as part of proactive safety planning, and should be evaluated together with crash history to identify locations for safety treatments. Additional details on the systemic safety analysis methodology are included in **Appendix B**.



Shared use path on Cedar Road.



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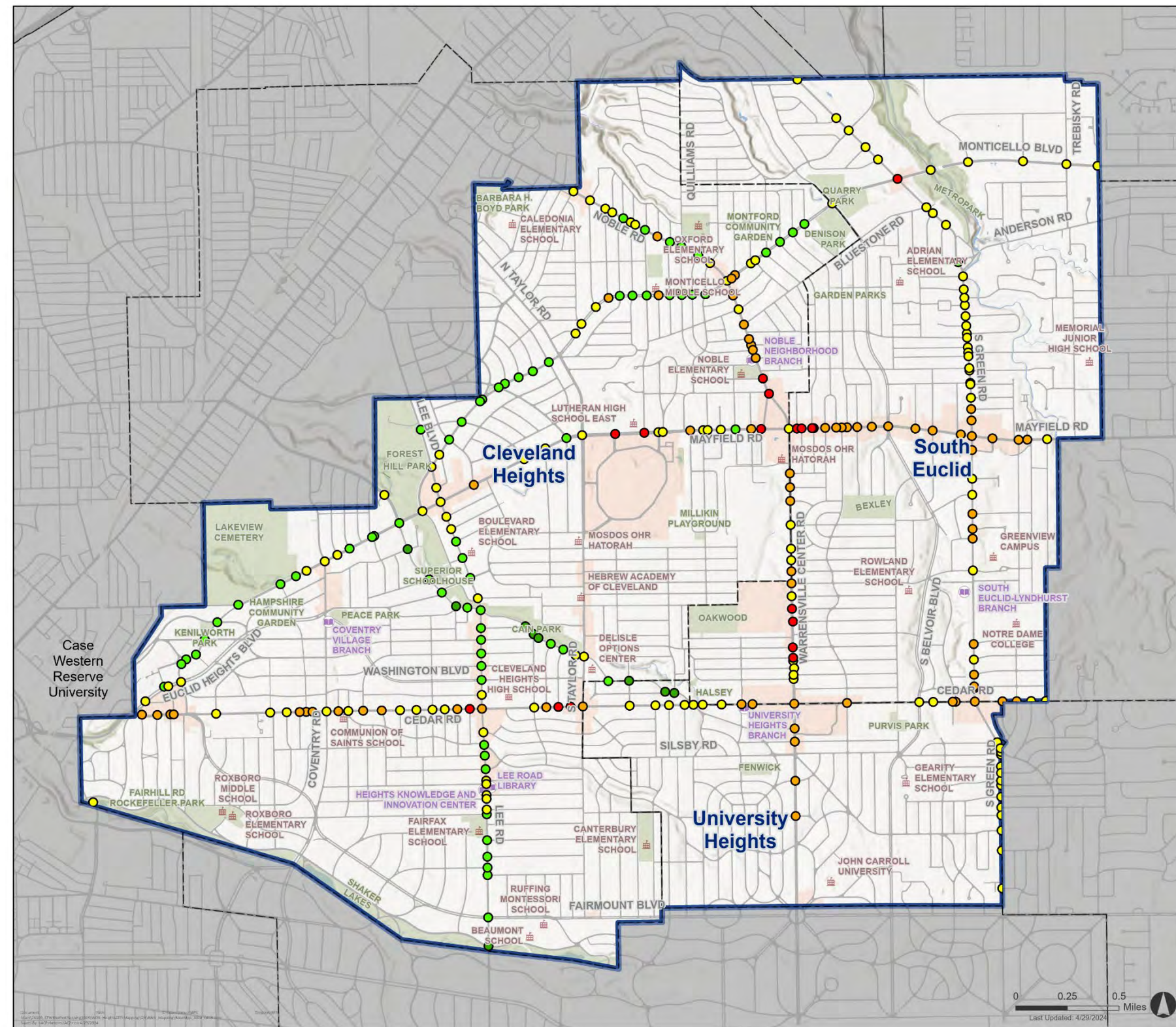
Pedestrian High Risk Network

- Low Risk
- Medium Risk
- High Risk

Reference Layers

- Schools
- Libraries
- Water
- Parks
- Business Districts
- City Boundaries
- Plan Area Boundary

Figure 19: Pedestrian High-Risk Network



The Heights Regional Active Transportation Plan



Pedestrian Intersection High Risk Network

- Low Risk
- Medium Risk
- High Risk

Reference Layers








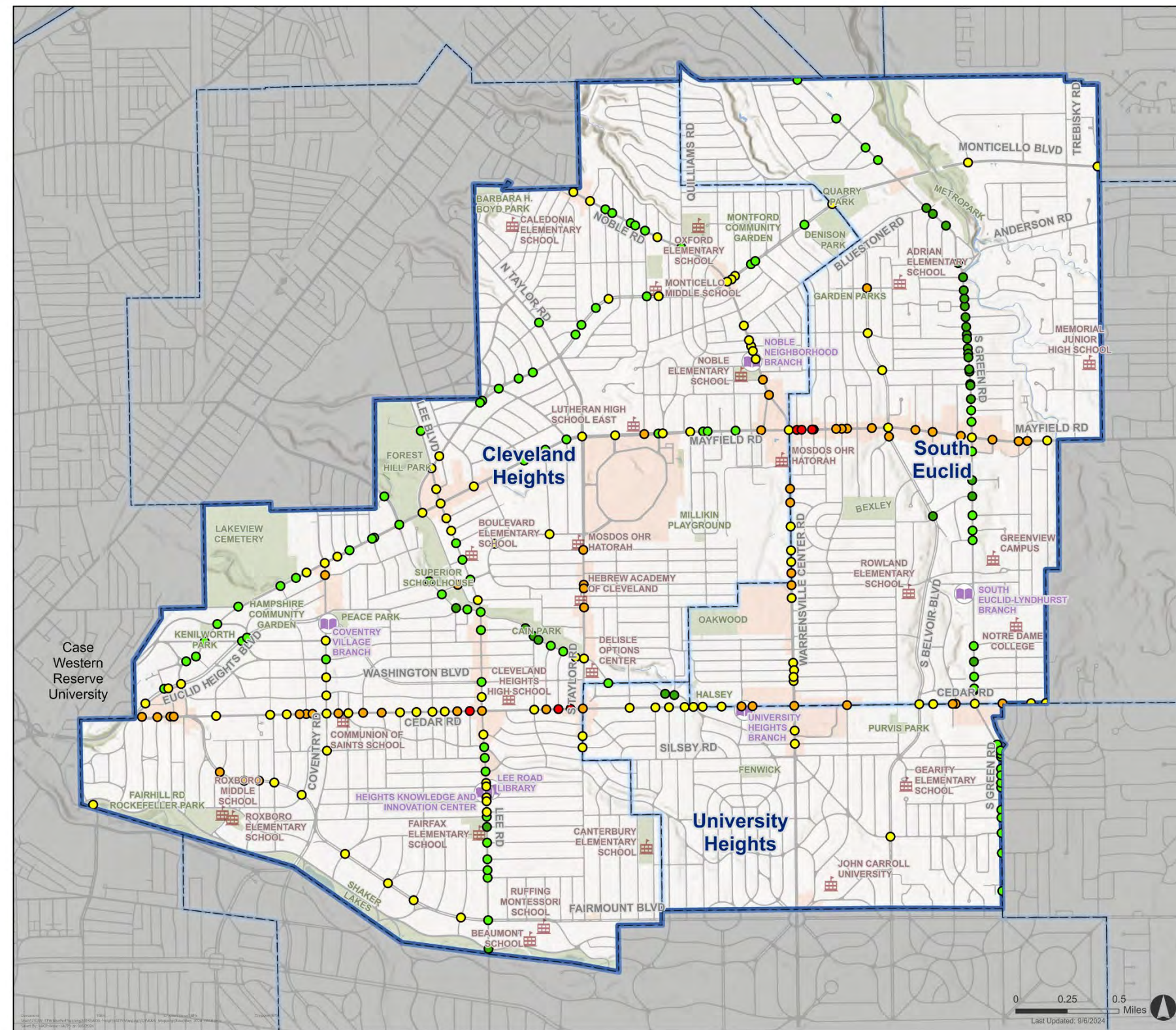
-  Schools
-  Libraries
-  Water
-  Parks
-  Business Districts
-  City Boundaries
-  Plan Area Boundary

Figure 20: Pedestrian Intersection High-Risk Network



The Heights Regional Active Transportation Plan



Bicycle Intersection High Risk Network

- Low Risk
- Medium Risk
- High Risk

Reference Layers





-  Schools
-  Libraries
-  Water
-  Parks
-  Business Districts
-  City Boundaries
-  Plan Area Boundary

Figure 21: Bicycle Intersection High-Risk Network

LEVEL OF TRAFFIC STRESS

Overview of Level of Traffic Stress

In active transportation planning, a Level of Traffic Stress (LTS) analysis uses broadly available road characteristics to classify the experience of riding a bicycle on different streets. A common method was first described in 2012¹², and has been adopted and adjusted for local conditions across the country. An LTS analysis typically groups roads into one of four categories:

- » LTS 1 – A low stress facility suitable for all ages and abilities. These facilities have strong separation from motor vehicle traffic or are well-established on low speed, low volume roads.
- » 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.
- » 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.
- » 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.

LTS Methodology

ODOT developed an LTS tool for the statewide bicycle network, and the tool and analysis method were adopted for this analysis.¹³ The inputs for the ODOT LTS analysis include:

- » Number of lanes
- » Direction of travel (one- or two-way)
- » Posted speed limit
- » Annual Average Daily Traffic (AADT)
- » Bicycle facility type (shared use path, separated bicycle lane, buffered bicycle lane, bicycle lane, paved shoulder, or shared lane)
- » Bicycle lane width

The ODOT TIMS roadway inventory, combined with bicycle facility data from Cleveland Heights, University Heights, and South Euclid provided data inputs for the LTS analysis. Local roadways without bicycle facilities were excluded from the results since most of them do not have AADT data available, and non-local road segments where AADT data was not available were also excluded. This results in an analysis that primarily covers arterial and collector roads, together with a small number of local roads with bicycle facilities.

¹² Mekuria, M. C., Furth, P. G., & Nixon, H. (2012). Low-stress bicycling and network connectivity. Retrieved from <https://transweb.sjsu.edu/research/Low-Stress-Bicycling-and-Network-Connectivity>

¹³ NOACA has also developed LTS for the region, available at <https://gis.noaca.org/portal/>. That analysis generally aligns with the results presented here, although some corridors have not been updated to reflect recent infrastructure in the Heights ATP area.

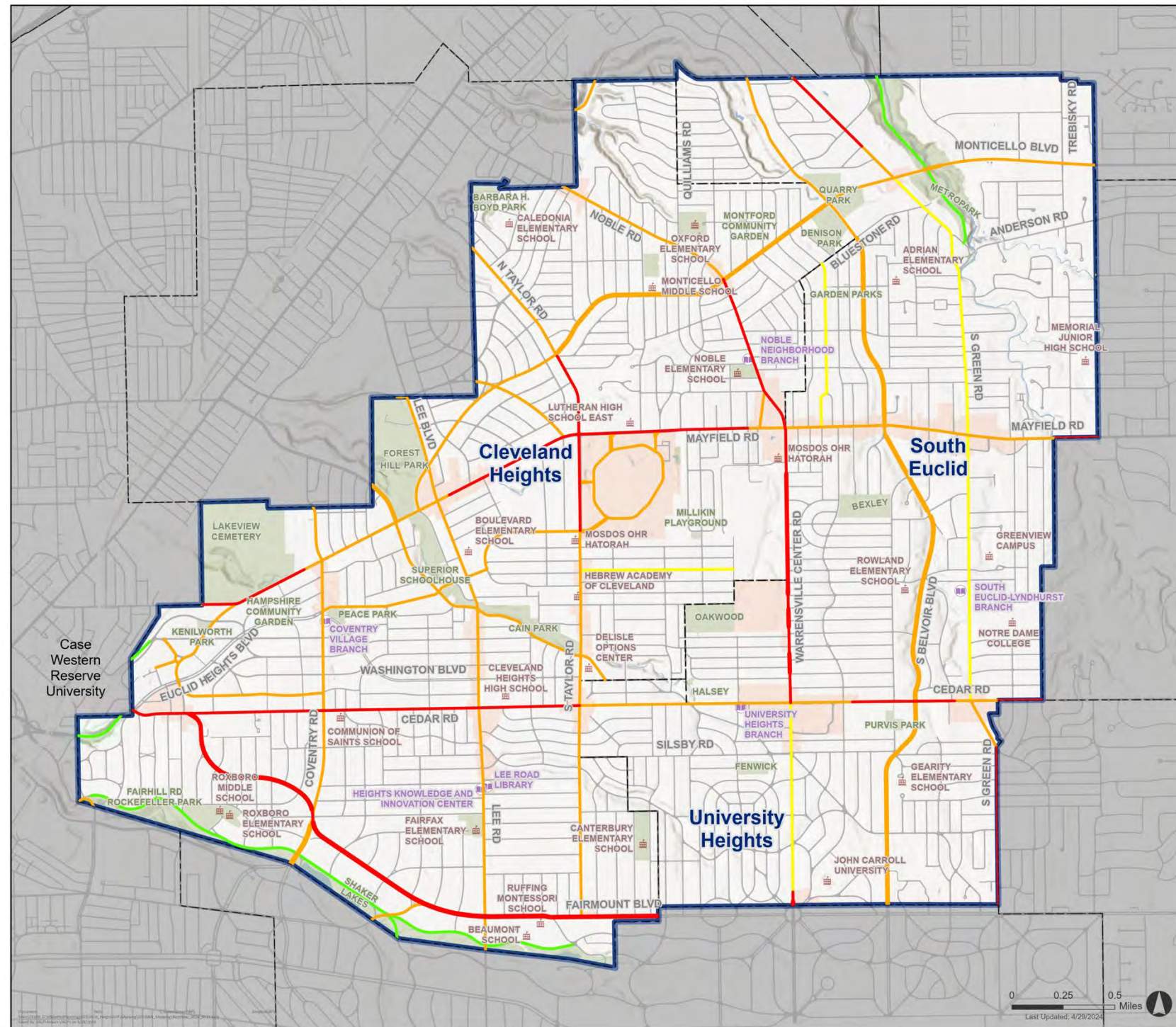
LTS Results

Most of the roads analyzed in the area have an LTS value of 3 or 4. This includes north-south and east-west connections between the three cities and indicates it may be difficult for people to easily travel by bicycle to local or regional destinations. North-south connections with LTS 4, indicating a high stress facility that is uncomfortable for most adults, include portions of Green Road, Warrensville Center Road, Noble Road, and Taylor Road. East-west connections with LTS 4 include portions of Mayfield Road, Cedar Road, and Fairmont Boulevard. Roads with LTS 3 or 4 are generally uncomfortable for most adults and families. In contrast, Euclid Park Road (in Euclid Creek Reservation), North Park Boulevard, and the steep portions Edgehill Road and Cedar Road near the border with the City of Cleveland have LTS 1 along segments of the road adjacent to shared use paths and buffered bike lanes. South Green Road and Warrensville Center Road have LTS 2 along roadway segments with on-street bicycle facilities. Roads with LTS 1 are suitable for all ages and abilities, and roads with LTS 2 are typically suitable for people who are “interested but concerned” about riding a bicycle, which includes most adults and families. **Figure 22** illustrates the results of the Level of Traffic Stress analysis.

Results of the Level of Traffic Stress analysis should be used alongside public feedback to ensure real life experiences align with the data. It is possible that other conditions, for example on street bicycle facility maintenance or high pedestrian/bicycle use on shared use paths, could contribute to people riding bicycles feeling more stress than indicated by the analysis.



On-street bicycle lanes on Green Road.



The Heights Regional Active Transportation Plan



Level of Traffic Stress - Bicycles

- Low Stress (LTS 1)
- Moderate Stress (LTS 2)
- High Stress (LTS 4)

Reference Layers

-  Schools
-  Libraries
-  Water
-  Parks
-  Business Districts
-  City Boundaries
-  Plan Area Boundary

Figure 22: Bicycle Level of Traffic Stress

KEY TAKEAWAYS

Examination of University Heights, Cleveland Heights, and South Euclid’s demographics, planning efforts, and transportation system highlights many recent successes while pointing to a need for further active transportation improvements and services across the area. The communities addressed in this plan have a lower rate of car ownership and higher unemployment rate than the rest of Ohio, which indicates a greater need for active transportation options. Relatedly, the rates of walking, biking, and transit use are all more than double the statewide average.

The three cities have an extensive sidewalk and off-street trail network, and have made recent progress to expand those networks. However, there are sidewalk gaps in some key locations, and stakeholders have noted a need for safer crossings and more on- and off-street bicycle facilities across the area. High active transportation demand and need suggests all three cities have both favorable conditions for walking and bicycling, as well as people who would benefit from safer and more comfortable nonmotorized transportation options. Concentrations of high demand and need for active transportation facilities are identified in the center of the area with the greatest area within Cleveland Heights. The crash history, systemic safety analysis, and Level of Traffic Stress all support the need for improvements for pedestrians and bicyclists on major arterials, along with targeted improvements on streets with lower vehicle volumes.

The communities have demonstrated interest in active transportation through development of plans, policies, and programs, and investments in related projects. This plan builds on nearly 20 other plans and initiatives developed by entities across and within the study area over the past five years, with even more plans and initiatives that were completed or incepted between five and 12 years ago. While all three cities have made recent bicycle and pedestrian-supportive improvements in their communities and have dedicated funding to others, these analyses emphasize where and to what extent active transportation projects, programs, and services are still needed in the region.



Side use path in Euclid Creek Reservation.

Source: Burton Planning Services

PROPOSED PROJECTS AND PROGRAMS





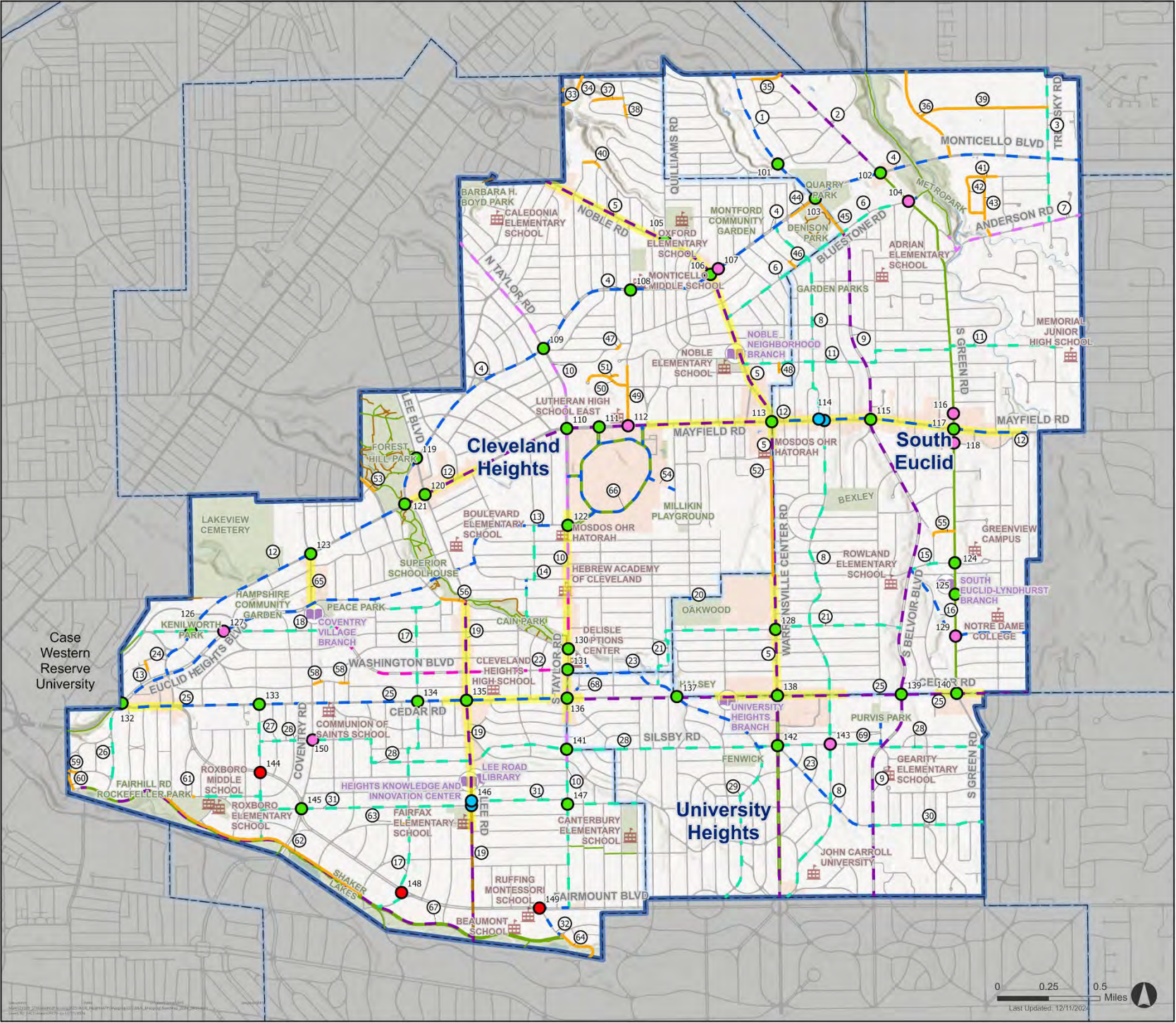
PROPOSED PROJECTS AND PROGRAMS

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 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, and evaluation.

INFRASTRUCTURE PROJECTS

The final network is based on the existing conditions analysis, steering committee meetings, and public input. The network includes critical connections to schools, libraries, parks, and commercial corridors. The network also identifies multiple intersections that should be improved to make walking and biking safer along major roads, such as Cedar Road/Taylor Road, Mayfield Road/Warrensville Center Road, and Cedar Road/Euclid Heights Boulevard/Overlook Road. See **Figure 23** for a network recommendations map and **Table 4** for a complete list of all proposed projects with descriptions.

The recommendations outlined in **Figure 23** and **Table 4** will add over 21 miles of bicycle boulevards, 17 miles of shared use paths, 11 miles of separated bicycle lanes, eight (8) miles of on-street bikeways (including nearly five miles with a buffer), and six (6) miles of sidewalks to the transportation system, plus 50 intersection or crossing improvements.



The Heights
Regional Active
Transportation Plan



Proposed Active
Transportation
Improvements

- Proposed Project Type

 - Bicycle Boulevard
 - Bicycle Lane
 - Buffered Bicycle Lane
 - Separated Bicycle Lane
 - Shared Use Path
 - New Sidewalk
 - Crossing Improvement Zone
- Proposed Intersection Improvements

 - Offset Intersection Treatment
 - RRFB
 - Signalized Intersection
 - Unsignalized Intersection
- Reference Layers

 - Schools
 - Libraries
 - Water
 - Parks
 - Business Districts
 - City Boundaries
 - Plan Area Boundary
- Existing Infrastructure

 - Trails
 - Bicycle Infrastructure

Figure 23: Network Map

Table 4. Project Recommendations

ID	Corridor or Intersection	Project Type	Project Limits	Jurisdiction(s)
1	Belvoir Boulevard	Shared Use Path	Study area limits to Bluestone Road (including separate segment in Cleveland Heights)	Cleveland Heights, South Euclid
2	Green Road	Separated Bicycle Lane	Study area limits to Monticello Boulevard	South Euclid
3	Trebisky Road	Bicycle Boulevard	Study area limits to Anderson Road	South Euclid
4	Monticello Road	Shared Use Path	Mayfield Road to study area limits	Cleveland Heights, South Euclid
5	Warrensville Center Road/Noble Road	Separated Bicycle Lane and Buffered Bike Lane	Study area limits	Cleveland Heights, University Heights, South Euclid
5	Warrensville Center Road/Noble Road	Crossing Improvement Zone	Study area limits to approximately 1000 feet south of Mayfield Road	Cleveland Heights, South Euclid
6	Bluestone Road	Bicycle Boulevard & Shared Use Path	Noble Road to shared use path entrance east of Green Road	Cleveland Heights, South Euclid
7	Anderson Road	Bicycle Lane	Metropolitan Park Boulevard to study area limits	South Euclid
8	Miramar Boulevard, Felton Road, Avondale Road, and Quarry Drive	Bicycle Boulevard	Monticello Boulevard to study area limits	Cleveland Heights, University Heights, South Euclid
9	Belvoir Boulevard	Separated Bicycle Lane	Bluestone Road to study area limits	Cleveland Heights, University Heights, South Euclid
10	Taylor Road	Bicycle Boulevard, Bicycle Lane, Buffered Bicycle Lane	Study area limits to Fairmount Boulevard	Cleveland Heights, University Heights
10	Taylor Road	Crossing Improvement Zone	Euclid Heights Boulevard to Cedarbrook Road	Cleveland Heights
11	Liberty Road, Norma Road, and Ardmore Road	Bicycle Boulevard	Noble Road to Dorsh Road	Cleveland Heights, South Euclid
12	Mayfield Road	Shared Use Path & Separated Bicycle Lane	Kenilworth Road to Sheridan Road	Cleveland Heights, South Euclid
12	Mayfield Road	Crossing Improvement Zone	Monticello Boulevard to Ivydale Road and Severance Circle to Sheridan Road	Cleveland Heights, South Euclid
13	Euclid Heights Boulevard	Shared Use Path	Cedar Road to Taylor Road	Cleveland Heights
14	Compton Road	Bicycle Boulevard & Shared Use Path	Euclid Heights Boulevard to Superior Park Drive	Cleveland Heights

HEIGHTS REGIONAL ACTIVE TRANSPORTATION PLAN

ID	Corridor or Intersection	Project Type	Project Limits	Jurisdiction(s)
15	Bayard Road	Bicycle Boulevard	Belvoir Boulevard to Green Road	South Euclid
16	Langerdale Road, Lanphier Park, and College Road	Shared Use Path	Belvoir Boulevard to study area limits	South Euclid
17	Lincoln Boulevard, Cottage Grove Avenue, and Stratford Road	Bicycle Boulevard	Euclid Heights Boulevard and Parkway Drive to North Park Boulevard	Cleveland Heights
18	Edgehill Road	Bicycle Boulevard	Overlook Road to Washington Boulevard	Cleveland Heights
19	Lee Road	Separated Bicycle Lane	Superior Road to study area limits	Cleveland Heights
19	Lee Road	Crossing Improvement Zone	Superior Road to Fairfax Road	Cleveland Heights
20	Oakwood Green Park Path	Shared Use Path	Blanche Ave to existing park path	Cleveland Heights, South Euclid
21	Verona Road, Antisdale Road, Revere Road, and Staunton Road	Bicycle Boulevard	Washington Boulevard to Belvoir Boulevard	Cleveland Heights, University Heights, South Euclid
22	Washington Boulevard	Buffered Bicycle Lane	Edgehill Road to Taylor Road	Cleveland Heights
23	Washington Boulevard	Shared Use Path	Taylor Road to Belvoir Boulevard	Cleveland Heights, University Heights, South Euclid
24	Kenilworth Road	Shared Use Path	Euclid Heights Boulevard to Mayfield Road	Cleveland Heights
25	Cedar Road	Shared Use Path & Separated Bicycle Lane	Within study area limits (Euclid Heights Boulevard to Lyndway Road)	Cleveland Heights, University Heights, South Euclid
25	Cedar Road	Crossing Improvement Zone	Euclid Heights Boulevard to Fairmount Boulevard, Oakdale Road to approximately 500 feet east of Taylor Road, Fenwick Road to Miramar Boulevard, Kerwin Road to Fenway Drive	Cleveland Heights, University Heights, South Euclid
26	Harcourt Drive	Bicycle Boulevard	Cedar Road to North Park Boulevard	Cleveland Heights
27	Demington Drive	Bicycle Boulevard	Cedar Road to North Park Boulevard	Cleveland Heights
28	Silsby Road, Essex Road, Westminster Road, and Clarkson Road	Bicycle Boulevard	Demington Drive to Green Road	Cleveland Heights, University Heights
29	Saybrook Road and Traymore Road	Bicycle Boulevard	Silsby Road to study area limits	University Heights
30	Washington Boulevard	Bicycle Boulevard	Belvoir Boulevard to Green Road	University Heights

HEIGHTS REGIONAL ACTIVE TRANSPORTATION PLAN

ID	Corridor or Intersection	Project Type	Project Limits	Jurisdiction(s)
31	St. James Parkway and Scarborough Road	Bicycle Boulevard	North Park Boulevard to Canterbury Road	Cleveland Heights, University Heights
32	Fairmount Boulevard and Shelburne Road	Shared Use Path	Taylor Road to North Park Boulevard	Cleveland Heights
33	Reyburn Road	New Sidewalk	Section within Cleveland Heights	Cleveland Heights
34	Belvoir Boulevard	New Sidewalk	Section within Cleveland Heights	Cleveland Heights
35	Lancaster Road	New Sidewalk	Greenvalue Drive to Green Road	South Euclid
36	Parkside Boulevard	New Sidewalk	Study area limits to Monticello Boulevard	South Euclid
37	Brinkmore Road	New Sidewalk	Approximately 800 feet west of Edgerly Road to Edgerly Road	Cleveland Heights
38	Edgerly Road	New Sidewalk	Brinkmore Road to Fenley Road	Cleveland Heights
39	Ammon Road	New Sidewalk	Parkside Boulevard to Trebisky Road	South Euclid
40	Randolph Road	New Sidewalk	Woodview Road to Lecona Drive	Cleveland Heights
41	McFarland Road	New Sidewalk	Haywood Drive to approximately 325 feet east of Stuart Drive	South Euclid
42	Haywood Drive	New Sidewalk	McFarland Road to Stuart Drive	South Euclid
43	Stuart Drive	New Sidewalk	McFarland Road to Anderson Road	South Euclid
44	Monticello Boulevard	New Sidewalk	Approximately 125 feet east of Quarry Drive to Belvoir Boulevard	Cleveland Heights
45	Belvoir Boulevard	New Sidewalk	Monticello Boulevard to Bluestone Road	Cleveland Heights
46	Renfield Road	New Sidewalk	Approximately 225 feet north of Bluestone Road to Bluestone Road	Cleveland Heights
47	Woodridge Road	New Sidewalk	Approximately 275 feet east of Edison Road for approximately 125 feet	Cleveland Heights
48	Brookline Road (path connection)	New Sidewalk	Ardmore Road for approximately 225 feet south	Cleveland Heights
49	Yellowstone Road	New Sidewalk	Approximately 500 feet north of Glen Allen Drive to Mayfield Road	Cleveland Heights
50	Glen Allen Drive	New Sidewalk	Full road length (approximately 1150 feet)	Cleveland Heights
51	Birchtree Path	New Sidewalk	Full road length (approximately 225 feet)	Cleveland Heights

HEIGHTS REGIONAL ACTIVE TRANSPORTATION PLAN

ID	Corridor or Intersection	Project Type	Project Limits	Jurisdiction(s)
52	Warrensville Center Road	New Sidewalk	Oakwood Drive to Bayard Road	Cleveland Heights
53	Superior Road	New Sidewalk	Approximately 75 feet west of Hillcrest Road to approximately 150 feet east of Ridgefield Road	Cleveland Heights
54	Severance Circle (additional connection)	Shared Use Path	Severance Circle to Crest Road	Cleveland Heights
55	Renwood Road	New Sidewalk	Donwell Drive to Green Road	South Euclid
56	Superior Road	New Sidewalk	Parkway Drive to Lee Road	Cleveland Heights
57	Kenilworth Lane	New Sidewalk	Approximately 50 feet north of Kenilworth Mews for approximately 225 feet south	Cleveland Heights
58	Derbyshire Road	New Sidewalk	Coventry Road to Renrock Road and Stillman Road to Lamberton Road	Cleveland Heights
59	Denton Road	New Sidewalk	Chestnut Hills Drive to Devonshire Drive	Cleveland Heights
60	Chestnut Hills Drive	New Sidewalk	Denton Drive to North Park Boulevard	Cleveland Heights
61	St. James Parkway	New Sidewalk	Grandview Avenue to approximately 200 feet east of Ardleigh Drive	Cleveland Heights
62	North Park Boulevard	New Sidewalk	St. James Parkway to Arlington Road	Cleveland Heights
63	Monmouth Road	New Sidewalk	Approximately 200 feet east of Arlington Road to Stratford Road	Cleveland Heights
64	North Park Boulevard	New Sidewalk	North Park Boulevard to study area limits	Cleveland Heights
65	Coventry Road	Crossing Improvement Zone	Mayfield Road to Euclid Heights Boulevard	Cleveland Heights
66	Severance Circle	Shared Use Path	Full road length, including segments connecting to Mayfield Road and Taylor Road	Cleveland Heights
67	North Park Boulevard	Separated Bicycle Lane	Martin Luther King Jr. Drive to Lee Road	Cleveland Heights
68	Raymont Boulevard	Multi-use Path	Raymont Boulevard (dead end) to Cedar Road/Taylor Road intersection	University Heights
69	Wrenford Road	Multi-use Path	Purvis Park to Belvoir Boulevard/Silsby Road intersection	University Heights

HEIGHTS REGIONAL ACTIVE TRANSPORTATION PLAN

ID	Corridor or Intersection	Project Type	Project Limits	Jurisdiction(s)
101	Belvoir Boulevard/Princeton Boulevard	Signalized Intersection Improvements	N/A	South Euclid
102	Green Road/Monticello Boulevard	Signalized Intersection Improvements	N/A	South Euclid
103	Monticello Boulevard/Belvoir Boulevard	Signalized Intersection Improvements	N/A	Cleveland Heights, South Euclid
104	Green Road/Bluestone Road	Unsignalized Intersection Improvements	N/A	South Euclid
105	Noble Road/Quilliams Road	Signalized Intersection Improvements	N/A	Cleveland Heights
106	Noble Road/Monticello Boulevard	Signalized Intersection Improvements	N/A	Cleveland Heights
107	Monticello Boulevard/Englewood Road	Unsignalized Intersection Improvements	N/A	Cleveland Heights
108	Monticello Road/Yellowstone Road	Signalized Intersection Improvements	N/A	Cleveland Heights
109	Taylor Road/Monticello Boulevard	Signalized Intersection Improvements	N/A	Cleveland Heights
110	Mayfield Road/Taylor Road	Signalized Intersection Improvements	N/A	Cleveland Heights
111	Mayfield Road/Severance Circle/Copper Trace	Signalized Intersection Improvements	N/A	Cleveland Heights
112	Mayfield Road/Yellowstone Road	Unsignalized Intersection Improvements	N/A	Cleveland Heights
113	Warrensville Center Road/Mayfield Road	Signalized Intersection Improvements	N/A	Cleveland Heights, South Euclid
114	Mayfield Road/Felton Road/Grantleigh Road	Offset Intersection Treatment	N/A	South Euclid
115	Mayfield Road/Belvoir Boulevard	Signalized Intersection Improvements	N/A	South Euclid
116	Green Road/Messenger Court	Unsignalized Intersection Improvements	N/A	South Euclid
117	Mayfield Road/Green Road	Signalized Intersection Improvements	N/A	South Euclid



HEIGHTS REGIONAL ACTIVE TRANSPORTATION PLAN

ID	Corridor or Intersection	Project Type	Project Limits	Jurisdiction(s)
118	Green Road/Rushton Road	Unsignalized Intersection Improvements	N/A	South Euclid
119	Lee Boulevard/Monticello Boulevard	Signalized Intersection Improvements	N/A	Cleveland Heights
120	Mayfield Road/Lee Road	Signalized Intersection Improvements	N/A	Cleveland Heights
121	Mayfield Road/Monticello Boulevard/Cumberland Road	Signalized Intersection Improvements	N/A	Cleveland Heights
122	Taylor Road/Euclid Heights Boulevard/Severance Circle	Signalized Intersection Improvements	N/A	Cleveland Heights
123	Mayfield Road/Coventry Road	Signalized Intersection Improvements	N/A	Cleveland Heights
124	Green Road/Bayard Road	Signalized Intersection Improvements	N/A	South Euclid
125	Green Road/South Euclid Lyndhurst Library/Notre Dame Driveway	Signalized Intersection Improvements	N/A	South Euclid
126	Edgehill Road/Kenilworth Road	Signalized Intersection Improvements	N/A	Cleveland Heights
127	Edgehill Road/Euclid Heights Boulevard	Unsignalized Intersection Improvements	N/A	Cleveland Heights
128	Warrensville Center Road/Antisdale Road/Verona Road	Signalized Intersection Improvements	N/A	South Euclid
129	Green Road/College Road	Unsignalized Intersection Improvements	N/A	South Euclid
130	Taylor Road/Superior Road	Signalized Intersection Improvements	N/A	Cleveland Heights
131	Taylor Road/Washington Boulevard	Signalized Intersection Improvements	N/A	Cleveland Heights
132	Cedar Road/Euclid Heights Boulevard/Overlook Road	Signalized Intersection Improvements	N/A	Cleveland Heights
133	Cedar Road/Demington Drive	Signalized Intersection Improvements	N/A	Cleveland Heights
134	Cedar Road/Cottage Grove Avenue	Signalized Intersection Improvements	N/A	Cleveland Heights

HEIGHTS REGIONAL ACTIVE TRANSPORTATION PLAN

ID	Corridor or Intersection	Project Type	Project Limits	Jurisdiction(s)
135	Cedar Road/Lee Road	Signalized Intersection Improvements	N/A	Cleveland Heights
136	Cedar Road/Taylor Road	Signalized Intersection Improvements	N/A	Cleveland Heights, University Heights
137	Cedar Road/Washington Boulevard	Signalized Intersection Improvements	N/A	University Heights, South Euclid
138	Warrensville Center Road/Cedar Road	Signalized Intersection Improvements	N/A	University Heights, South Euclid
139	Cedar Road/Belvoir Boulevard	Signalized Intersection Improvements	N/A	University Heights, South Euclid
140	Cedar Road/Green Road	Signalized Intersection Improvements	N/A	University Heights, South Euclid
141	Taylor Road/Silsby Road	Signalized Intersection Improvements	N/A	Cleveland Heights, University Heights
142	Warrensville Center Road/Washington Boulevard	Signalized Intersection Improvements	N/A	University Heights
143	Silsby Road/Miramar Boulevard	Unsignalized Intersection Improvements	N/A	University Heights
144	Fairmount Boulevard/Demington Drive	RRFB	N/A	Cleveland Heights
145	Fairmount Boulevard/Coventry Road/Scarborough Road	Signalized Intersection Improvements	N/A	Cleveland Heights
146	Lee Road/Scarborough Road	Offset Intersection Treatment	N/A	Cleveland Heights
147	Taylor Road/Scarborough Road	Signalized Intersection Improvements	N/A	Cleveland Heights
148	Fairmount Boulevard/Stratford Road/North Woodland Road	RRFB	N/A	Cleveland Heights
149	Fairmount Boulevard/Shelburne Road	RRFB	N/A	Cleveland Heights
150	Coventry Road/Clarkson Road	Unsignalized Crossing Improvements	N/A	Cleveland Heights

ACTIVE TRANSPORTATION NETWORK RATIONALE

The ATP's vision and goals are focused on increasing connectivity in the region, improving safety, creating mobility options for users of all ages and abilities, motivating healthy lifestyles, providing education on mobility options, and supporting and providing walking and biking infrastructure in the areas of greatest need. The active transportation network was designed with the intention of providing safe, accessible, easy options for walking and biking that connect to regional destinations.

Through the public engagement process, community members shared their thoughts on important destinations to which they would like to connect, as well as corridors and areas with a lack of walking and biking facilities, areas that feel unsafe due to existing conditions (lack of crosswalks, traffic, speed, etc.), and the areas in which they like to walk and bike the most. Public comments, along with data from the existing conditions analysis related to safety, use, and equity, were the foundational pieces of information used to draft the recommended network.

The draft active transportation network was reviewed by the Steering Committee and the community to ensure it meets the needs of the community and the vision of the Heights Regional ATP.

Pedestrian Facilities

Pedestrian infrastructure is provided in the form of new sidewalks, crossing improvements, and shared use paths. Since the area encompassed by the Heights Regional ATP plan has relatively few sidewalk gaps, all identified sidewalk gaps were included in the project recommendations. Shared use paths were typically identified along major roads or as park connections, and crossing improvements were most often identified along major roads and based on stakeholder input.

Filling sidewalk gaps is important for both pedestrian safety and comfort. The presence of sidewalks along a roadway corresponds to a 65 to 89 percent reduction in walking along road pedestrian crashes.¹⁴ Pedestrians are also among the most vulnerable road users and 72 percent of pedestrian fatalities nationally occur at non-intersection locations.¹⁵ Furthermore, around 39 percent of survey respondents for this project indicated that new sidewalks and trails in the community would encourage them to walk or roll more. Additional treatments implemented along roadways and crossing improvements would encourage more bicycling and walking, improve the experience, and decrease the number of crashes that occur. Crossing improvements proposed in this plan include high-visibility crosswalks, curb extensions, pedestrian refuge islands, and rectangular rapid-flashing beacons (RRFBs).

¹⁴ FHWA (2017). Desktop Reference for Crash Reduction Factors, FHWA-SA-08-011, Table 11. Referenced in <https://safety.fhwa.dot.gov/provencountermeasures/walkways/>

¹⁵ FHWA (2018). Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations, Page 1. https://safety.fhwa.dot.gov/ped_bike/step/docs/STEP_Guide_for_Improving_Ped_Safety_at_Unsig_Loc_3-2018_07_17-508compliant.pdf

Bicycle Facilities

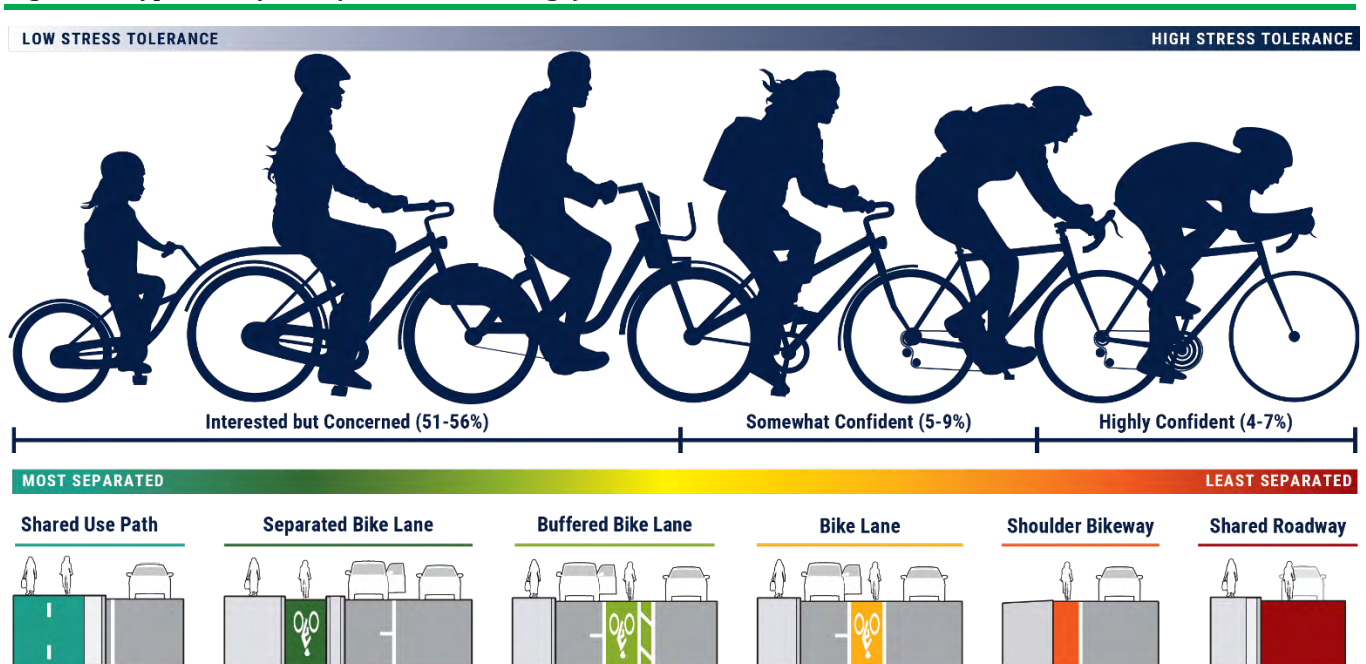
Bicycle infrastructure is provided in the form of bicycle boulevards, bicycle lanes, buffered bicycle lanes, separated bicycle lanes, and shared use paths (each of which is described in more detail in the **Facility Toolkit** section). Bicycle boulevards are recommended on lower-volume, local roads, while separated bicycle lanes and shared use paths are typically recommended on higher-volume, higher-speed roads. Bicycle lanes and buffered bicycle lanes are provided in limited situations based on previous studies for selected corridors or lower-volume corridors with space available for lane reductions.

Local infrastructure and routes will help riders of varying abilities access their daily destinations such as schools, grocery stores, parks, and places of employment. 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. 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. A standard set of bicycle design users is described below and illustrated in **Figure 24**.

Figure 24: Types of Bicyclists (Source: Toole Design)



Comfort, skill, and age may affect bicyclist behavior and preference for different types of bicycle facilities. People who bicycle are influenced by their relative comfort operating with or near motor vehicle traffic. To accommodate the majority of the population, the proposed bicycle network in Heights Regional ATP was primarily designed for the “Interested but Concerned” rider.

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.

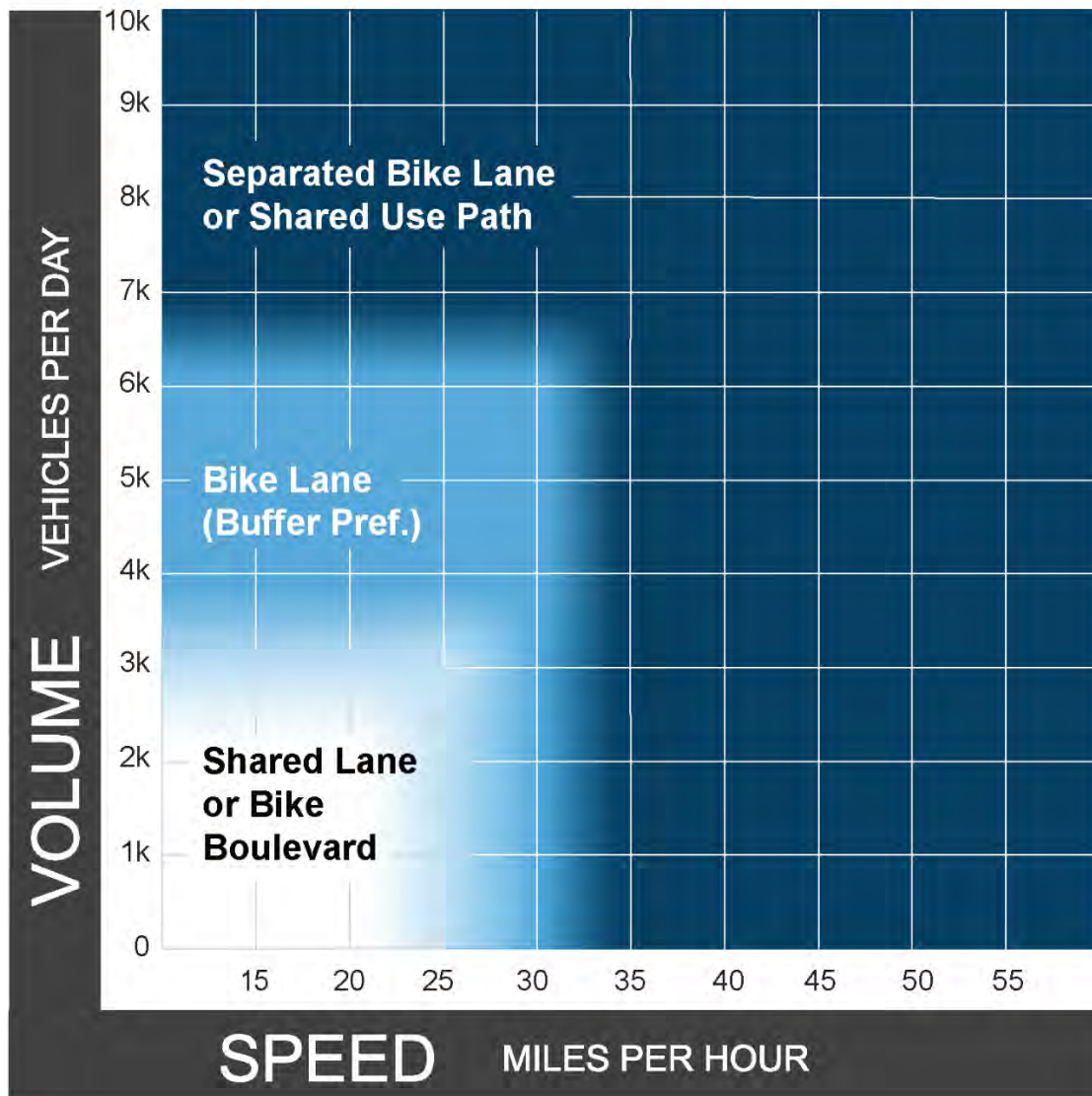
Facility Selection Methodology

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 matrix in **Figure 25** was used

to help determine the best facility for roadways in the Heights ATP area based on road speed and volume as well as the “Interested but Concerned” design user type. The FHWA guide has further detail on recommended facility selection.

Figure 25: 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

Bicycle infrastructure recommendations include five bicycle facility types to accommodate people of varying ability and in different riding 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.¹⁶ Pedestrian infrastructure is primarily provided in the form of sidewalks, shared use paths, and improved crossings.

Table 5. Facility Toolkit*

	Sidewalk	Shared Use Path	Crossing
			
<i>Description</i>	Sidewalks are intended for exclusive use by pedestrians. 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. They may notably increase levels of walking in areas with high traffic speeds/volumes.	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,	A variety of solutions can be employed to make intersections and mid-block crossings safer and more convenient for pedestrians. These treatments range from painted facilities, such as high-visibility crosswalks, to lights and signals, such as rectangular rapid flashing beacons (RRFB). Painted crosswalks delineate the safest pathway for pedestrians, and RRFBs enhance user safety and convenience at crossing points when full signalization is not warranted.




¹⁶ AASHTO (2021). Guide to Bicycle Facilities, 4th Edition, 2.2. Why Planning for Bicycling is Important.

HEIGHTS REGIONAL ACTIVE TRANSPORTATION PLAN

	Sidewalk	Shared Use Path	Crossing
		sometimes along rivers or old railroad corridors.	
<i>Intended Users</i>	Pedestrians	Bicyclists and Pedestrians	Bicyclists and Pedestrians
<i>Context</i>	Urban	Urban and Rural	Urban and Rural
<i>Posted Speed Limit</i>	30 mph or lower (preferred) 50 mph (acceptable)	Urban: Any speed (typically 30 mph+) Rural: Any speed (typically 55 mph+)	Any Speed (appropriate treatment will vary)
<i>Motor Vehicle Traffic Volume</i>	12,000 ADT or lower (preferred)	Urban: Any volume (typically 15,000 ADT+) Rural: Any volume (typically 6,500 ADT+).	Any Volume (appropriate treatment will vary)
<i>Other Considerations</i>	N/A	Shared use paths should be at least 10 feet wide (wider where higher bicycle and pedestrian traffic is expected, e.g., urban areas). Special consideration must be given to the design of roadway crossings to increase visibility, clearly indicate right-of-way, and reduce crashes. Alternative accommodations should be sought when there are many intersections and commercial driveway crossings.	<u>Treatments</u> may include: <ul style="list-style-type: none"> » High visibility markings » Advance yield lines and signage » Curb extensions » Raised crosswalk » RRFB » Textured intersection pavement

*For more information on facility selection and design see the [FHWA Bikeway Selection Guide](#), AASHTO Guide for Development of Bicycle Facilities, and future ODOT Multimodal Design Guide.

Table 5. Facility Toolkit* (continued)

	Bicycle Boulevard	Bike Lane and Buffered Bike Lane	Separated Bike Lane
			
<i>Description</i>	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 and traffic calming can help increase user comfort and prioritize bicycle travel.	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.	One- or two-way facilities 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 perceived and actual safety and comfort.
<i>Intended Users</i>	Bicyclists and Motorists	Bicyclists	Bicyclists
<i>Context</i>	Urban and Urban Periphery	Urban	Urban
<i>Posted Speed Limit</i>	25 mph or lower (preferred) 35 mph or lower (acceptable)	30 mph or lower	Any speed (typically 30 mph or higher)
<i>Motor Vehicle Traffic Volume</i>	≤3,000 ADT (preferred) ≤5,000 ADT (acceptable)	≤6,000 ADT (preferred) ≤20,000 ADT (acceptable)	Any volume (typically 15,000 ADT or greater)
<i>Other Considerations</i>	May be used in conjunction with wide outside lanes. Explore opportunities to provide parallel facilities for less confident bicyclists. Where motor vehicles are allowed to park along shared lanes, place markings to reduce potential conflicts with opening car doors. On low speed (<25 mph) low traffic (<3,000 ADT) streets, traffic calming and diversion can be used to slow traffic or create a bicycle boulevard.	Intersection designs should promote visibility of bicyclists and raise awareness of potential conflicts. Painted buffers can increase actual and perceived safety and are preferred when feasible. Bike lanes located next to parked cars should have a painted buffer next to the parking lane to prevent “dooring” crashes.	Intersection designs should promote visibility of bicyclists and raise awareness of potential conflicts. Separation may be provided through temporary measures such as planters or removable bollards as an interim and low-cost design.

*For more information on facility selection and design see the [FHWA Bikeway Selection Guide](#), AASHTO Guide for Development of Bicycle Facilities, and future ODOT Multimodal Design Guide

PROGRAMS AND POLICIES

Active transportation programs and policies are an essential element of an active transportation plan and may be used to support safety, health, and connectivity along with many other benefits. 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 property owners, or they can target specific groups for programming, like police officers. Individual programs can increase walking and bicycling in specific circumstances and locations but should be coordinated with policy development to ensure lasting change. See **Table 6** for a list of proposed programs and policies. These proposed programs and policies aim to accomplish the following goals:

- » **Connectivity** – increase active transportation connections in and among the cities of Cleveland Heights, University Heights, and South Euclid, including both trips and everyday destinations.
- » **Safety** – improve the safety of the transportation system with a focus on walking and biking.
- » **Accessibility** – create mobility options for users of all ages and abilities.
- » **Health** – use active transportation to motivate healthy lifestyles in the community.
- » **Education** – educate the public on mobility options such as walking, biking, rolling, and driving options.
- » **Equity** – support well-maintained walking and biking infrastructure in areas of the greatest need (lowest income, highest transportation burden).

The proposed programs and policies also aim to address barriers discussed in public comments and in community members' recommendations for programs, such as a high percentage of people saying that better sidewalk maintenance and more bicycle facilities would encourage them to walk and bike more.

The timeframes outlined in **Table 6** 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.

Table 6. Program and Policy Recommendations

Theme	Program/ Policy	Action Items	Responsible Party	Key Partners	Timeframe	Status
Connectivity	Implement an “Idaho Stop” law where cyclists can yield at stop signs when safe.	1. Engage with city officials, transportation authorities, legal advisors, and community stakeholders to develop the policy proposal, addressing potential concerns and considerations. 2. Draft or enact legislation or municipal ordinances to formally implement the Idaho Stop law, ensuring compliance with state and federal traffic laws and regulations. 3. Develop a comprehensive public awareness campaign to educate cyclists, motorists, and law enforcement about the new law and its implications. 4. Prioritize improvements such as clear signage indicating the Idaho Stop Law, dedicated bicycle lanes, bicycle boxes at intersections, and traffic calming measures to enhance cyclist safety.	Cleveland Heights, South Euclid, and University Heights	Local government, State government, State DOT, Legal Department, Police Department, City Planning and Engineering staff	Medium-Term	New
	Adopt a Complete Streets Policy	1. Research best practices in Complete Streets policies. 2. Adopt local Complete Streets policies.	University Heights, South Euclid	NOACA, City Planning and Engineering staff	Short-Term	New
	Evaluate Complete Streets Policy Updates and Implementation Best Practices	1. Research any new best practices in Complete Streets policies and implementation. 2. Adopt updated Complete Streets policies and implementation best practices.	Cleveland Heights	City Planning and Engineering staff	Short-Term	Ongoing
	Increase Transit Access	1. Identify, prioritize, and fill sidewalk gaps. 2. Work with GCRTA to coordinate funding and construction of shelters and benches at bus stops.	Cleveland Heights, South Euclid, and University Heights	GCRTA	Medium-Term	Ongoing

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Table 6 (cont.). Program and Policy Recommendations

Theme	Program/ Policy	Action Items	Responsible Party	Key Partners	Timeframe	Status
Connectivity (cont.)	Wayfinding Program	<ol style="list-style-type: none"> 1. Identify key neighborhood destinations (i.e., commercial areas, parks, schools). 2. Develop wayfinding standard design. 3. Implement wayfinding signage on key pedestrian and bicycle routes. 	Cleveland Heights, South Euclid, and University Heights	NOACA, Heights Bicycle Coalition	Short-Term	New and Ongoing
Safety	Sidewalk and Trail Maintenance Policy	<ol style="list-style-type: none"> 1. Research best practices in sidewalk and trail maintenance policies. 2. Adopt local sidewalk and trail maintenance policies 3. Identify resources for maintenance inspections. 	Cleveland Heights, South Euclid, and University Heights	City Planning, Engineering, and Inspection Staff	Short-Term	New
	Street Tree Planting and Maintenance Policy	<ol style="list-style-type: none"> 1. Research best practices in street tree planting and maintenance policies. 2. Adopt local street tree planting and maintenance policies. 	Cleveland Heights, South Euclid, and University Heights	City Planning Staff	Short-Term	New
	Provide Leading Pedestrian Intervals (LPIs) at traffic signals city-wide	<ol style="list-style-type: none"> 1. Develop standard city practices for LPIs. Recommend the usage of pedestrian recall, where the pedestrian phase is always activated with the LPI, on weekends or other times; particularly in areas with high pedestrian volumes and high Jewish populations (since some members of the Jewish community may not press buttons during the Sabbath and other holidays). 2. Prioritize intersections based on factors such as crash history, high active transportation demand or need, proximity to schools, parks, or transit stops, and community input. 3. Implement LPI at prioritized intersections and as part of ongoing maintenance work. 	Cleveland Heights, South Euclid, and University Heights	City Planning and Engineering staff	Medium-Term, Long-Term	New

Table 6 (cont.). Program and Policy Recommendations

Theme	Program/ Policy	Action Items	Responsible Party	Key Partners	Timeframe	Status
Safety (cont.)	Develop a “quick build” program used to implement, track, and analyze temporary infrastructure builds	1. Develop protocols for identifying and prioritizing suitable locations for temporary infrastructure builds, such as bicycle lanes, traffic calming, or curb extensions. 2. Create a streamlined approval process for securing permits, funding, and community support for temporary infrastructure projects. 3. Utilize modular and prefabricated components to facilitate the rapid assembly and disassembly of temporary infrastructure. 4. Follow up with the community on early projects to identify potential process improvements.	Cleveland Heights, South Euclid, and University Heights	Local Government, State DOT, City Planning and Engineering staff	Medium-Term, Long-Term	New
	Ban right turns on red at all stoplights	1. Engage with city officials, transportation authorities, legal advisors, and community stakeholders to develop the policy proposal, addressing potential concerns and considerations. 2. Draft or enact legislation or municipal ordinances to formally implement the ban on right turns at red lights, ensuring compliance with state and federal traffic laws and regulations. 3. Launch a targeted public education and awareness campaign to inform residents, motorists, cyclists, and pedestrians about the rationale behind the ban, as well as the benefits for safety and active transportation. 4. Prioritize improvements such as clear signage indicating the right turn on red ban.	Cleveland Heights, South Euclid, and University Heights	Local government, State government, State DOT, Legal Department, Police Department, City Planning and Engineering staff	Medium-Term, Long-term	New

Table 6 (cont.). Program and Policy Recommendations

Theme	Program/ Policy	Action Items	Responsible Party	Key Partners	Timeframe	Status
Safety (cont.)	<i>Remove all slip lanes</i>	1. Assess existing slip lanes across the jurisdiction to identify, date, and count the total number of slip lanes. 2. Prioritize slip lanes for removal based on factors such as crash history, high active transportation demand or need, proximity to schools, parks, or transit stops, and community input. 3. Collaborate with planning staff, engineering staff, and design professionals to develop alternative intersection designs that prioritize pedestrian safety, enhance active transportation access, and minimize vehicular conflicts.	Cleveland Heights, South Euclid, and University Heights	Local Government, City Planning and Engineering staff	Long-Term	New
	<i>Adopt a Vision Zero Policy</i>	1. Research best practices in Vision Zero Policies. 2. Adopt local Vision Zero Policy.	University Heights	NOACA, City Planning and Engineering staff	Short-Term	New
	<i>Implement speed management on arterial, collector, and local roads</i>	1. Identify a toolkit of preferred local strategies for managing speeds on arterial, collector, and local roads. 2. Prioritize key roads for speed management measures using factors such as identified safety needs. 3. Implement speed management measures on prioritized roads. 4. Conduct speed studies to reduce speed limits on roads, where appropriate.	Cleveland Heights, University Heights, South Euclid	City Planning and Engineering staff, ODOT	Medium-Term, Long-Term	New

Table 6 (cont.). Program and Policy Recommendations

Theme	Program/ Policy	Action Items	Responsible Party	Key Partners	Timeframe	Status
<i>Safety (cont.)</i>	<i>Update signal timing at traffic signals city-wide to accommodate bicyclists</i>	<ol style="list-style-type: none"> 1. Develop standard city practices for yellow and all-red signal timing to accommodate slower bicyclist speeds. 2. Prioritize intersections based on factors such as crash history, high active transportation demand or need, proximity to schools, parks, or transit stops, and community input. 3. Implement signal timing changes at prioritized intersections and as part of ongoing maintenance work. 	<i>Cleveland Heights, South Euclid, and University Heights</i>	<i>City Planning and Engineering staff</i>	<i>Medium-Term, Long-Term</i>	<i>New</i>
<i>Accessibility</i>	<i>Bicycle Parking and Storage Requirements in Commercial Districts</i>	<ol style="list-style-type: none"> 1. Establish minimum requirements and standards for bicycle parking and storage facilities, including the quantity, design, placement, and security features of facilities. 2. Collaborate with local businesses, property owners, and community organizations to identify opportunities for shared bicycle parking agreements. 3. Draft or enact legislation or municipal ordinances to formally implement minimum requirements and standards for bicycle parking and storage facilities. 	<i>Cleveland Heights, South Euclid, and University Heights</i>	<i>Local Government, Local Businesses, Business Districts</i>	<i>Short-Term</i>	<i>New</i>

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Table 6 (cont.). Program and Policy Recommendations

Theme	Program/ Policy	Action Items	Responsible Party	Key Partners	Timeframe	Status
<i>Accessibility (cont.)</i>	<i>Ensure that active transportation network is ADA compliant and accessible to all</i>	<ol style="list-style-type: none"> 1. Develop ADA Transition Plan for each city to identify needed network improvements for ADA compliance. 2. Identify funding sources to implement ADA Transition Plan. 3. Conduct ADA training sessions for city staff, engineers, planners, and project managers involved in active transportation planning and design. 4. Establish a systematic review process to evaluate the ADA compliance of proposed active transportation projects during the planning, design, and construction phases. 	<i>Cleveland Heights, South Euclid, and University Heights</i>	<i>Local Government, City Planning and Engineering staff</i>	<i>Long-Term</i>	<i>Ongoing</i>
<i>Health</i>	<i>Community Walking and Biking Events</i>	<ol style="list-style-type: none"> 1. Establish a team or working group responsible for planning and organizing community walking and biking events. 2. Establish event signage and awareness for safe automobile usage. 3. Broadcast event information to all residents. 	<i>Cleveland Heights, South Euclid, and University Heights</i>	<i>City Parks and Recreation Department, Local Government, Local Businesses</i>	<i>Medium-Term</i>	<i>New and Ongoing</i>
	<i>Trainings & Curricula</i>	<ol style="list-style-type: none"> 1. Train educators on safe walking and bicycling practices and road rules. 2. Develop curriculum for all age ranges that promote safe usage of active transportation networks and the health benefits of active transportation. 3. Incorporate training for students and youth as a part of classroom curriculum, physical education courses, or through the Safe Routes to Schools (SRTS) program. 	<i>Cleveland Heights, South Euclid, and University Heights</i>	<i>Public Schools, Local Health organizations, Heights Bicycle Coalition</i>	<i>Medium-Term</i>	<i>New</i>

Table 6 (cont.). Program and Policy Recommendations

Theme	Program/ Policy	Action Items	Responsible Party	Key Partners	Timeframe	Status
Education	<i>Bicycle and Pedestrian Safety Training, Policies, and Conversations with Police Department</i>	<ol style="list-style-type: none"> 1. Develop bicycle and pedestrian safety training program for police officers, focusing on relevant laws, regulations, best practices, crash reporting, and techniques for enforcing traffic rules and protecting pedestrians/cyclists. This includes tactics related to people blocking sidewalks and bicycle lanes. 2. Incorporate interactive training methods, such as real-world case studies, to enhance education efforts. 3. Organize community-led safety workshops, town hall meetings, and neighborhood forums to raise awareness about bicycle and pedestrian safety issues, promote responsible road behavior, and empower residents to advocate for safer streets. 	Cleveland Heights, South Euclid, and University Heights, Police Departments	Heights Bicycle Coalition, Residents	Medium-Term	New
	<i>Spread Transit Awareness</i>	<ol style="list-style-type: none"> 1. Collaborate with GCRTA to help community members learn about different public transit options. 2. Develop multimedia campaigns utilizing various channels such as television, social media, and print materials to raise awareness about public transit services. 3. Establish partnerships with employers, schools, universities, and large institutions to promote transit usage among employees, students, and visitors. 4. Support the Cedar/Quincy and Warrensville Center/ Noble long-term priority corridors. 5. Design bicycle facilities, particularly along transit priority corridors, in consultation with GCRTA to ensure bus stops are appropriately designed. 	GCRTA	Cleveland Heights, South Euclid, and University Heights, Police Departments, Local Schools, Heights Bicycle Coalition, Nearby Universities	Long-Term	Ongoing

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Table 6 (cont.). Program and Policy Recommendations

Theme	Program/ Policy	Action Items	Responsible Party	Key Partners	Timeframe	Status
<i>Education (cont.)</i>	<i>Bicycle and Pedestrian Counts</i>	<ol style="list-style-type: none"> 1. Count pedestrian and cyclist usage before and after improvements are made to the active transportation network. 2. Coordinate NOACA count locations based on upcoming pedestrian and bicycle projects. 	<i>Cleveland Heights, South Euclid, and University Heights</i>	<i>NOACA, Heights Bicycle Coalition</i>	<i>Short-Term</i>	<i>New and Ongoing</i>
<i>Equity</i>	<i>Expand access to free and low-cost bicycles and gear</i>	<ol style="list-style-type: none"> 1. Implement or expand bike bicycle share programs that offer low-cost or free access to bicycles for short-term use, providing residents with convenient and affordable transportation options. 2. Collaborate with local government agencies, non-profit organizations, and private sector partners to secure funding, establish operational agreements, and deploy resources in strategic areas throughout the jurisdiction. 3. Establish community bicycle libraries or lending programs that provide free or low-cost bicycles for long-term use for residents who may not have access to their own bicycles. 4. Other financial incentives, discounts, or vouchers for the purchase of essential bicycle gear and accessories, such as helmets, lights, locks, racks, and reflective clothing. 5. Establish donation programs that supply in-need residents with free gear and bicycles. 	<i>Cleveland Heights, South Euclid, and University Heights</i>	<i>Local Government, NOACA, Heights Bicycle Coalition, Bicycle Suppliers, Libraries, Schools, Repair Shops, Youth Organizations</i>	<i>Medium-Term</i>	<i>New</i>

Table 6 (cont.). Program and Policy Recommendations

Theme	Program/ Policy	Action Items	Responsible Party	Key Partners	Timeframe	Status
Equity (cont.)	<i>Project Prioritization</i>	<ol style="list-style-type: none"> 1. Implement framework to determine the order of infrastructure-based improvement by assessing the existing conditions and prioritizing high-need areas. 2. Develop strategies for improvement that take into consideration historically underrepresented populations, including but not limited to Black, Indigenous, and People of Color (BIPOC) communities, the elderly, and individuals with mobility impairments. 3. Prioritize project implementation from the Active Transportation Plan and other projects resulting from non-infrastructure programs and policies using the identified framework. 	Cleveland Heights, South Euclid, and University Heights	Local Government, NOACA	Short-term	New
	<i>Expand access to bicycle repair programs</i>	<ol style="list-style-type: none"> 1. Implement local bicycle repair education programs that assist residents with maintaining their bicycles and educate them on conducting their own repairs. 2. Collaborate with local government agencies, non-profit organizations, and private sector partners to secure funding for these programs and maintain organization sustainability. 	Cleveland Heights, South Euclid, and University Heights	Local Government, NOACA, Heights Bicycle Coalition, Libraries, Schools, Repair Shops, Youth Organizations	Medium-term	New
	<i>Remove bicycle license requirement</i>	<ol style="list-style-type: none"> 1. Identify relevant ordinances that require licenses on bicycles for city residents. 2. Draft and enact legislation or municipal ordinances to formally remove bicycle license requirements. 3. Remove bicycle helmet pledge as part of any optional bicycle registration process. 	Cleveland Heights and South Euclid (University Heights removed this requirement in May 2024)	Local Government	Short-term	New

PRIORITY PROJECTS





PRIORITY PROJECTS

The infrastructure recommendations in the previous chapter are conceptual routes, meant to show the potential of a comprehensive active transportation system in Cleveland Heights, University Heights, and South Euclid. 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 align with stakeholders' priorities, and are feasible, given real-world constraints.

PRIORITIZATION METHODOLOGY

The proposed projects were prioritized using a quantitative approach based on the existing conditions analysis, project characteristics, and public input, ensuring a systematic and objective evaluation. Each project was assessed based on five of the six goals of the plan: connectivity, safety, accessibility, health, and equity. The goal of education was not included in infrastructure project scoring since it is addressed through programs and policies. Each of the five scoring categories was broken down into one or more variables that contributed to the overall category score, and the variables were weighted based on a combination of city priorities, statewide funding priorities, and stakeholder input. Safety and equity have the highest weights in the overall score, followed by accessibility, connectivity, and health. The weights for each category and variable are shown in **Table 7**.

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Table 7. Weighted Categories for Quantitative Prioritization

Category	Weight	Variable	Description
Connectivity	5	Connecting the Region	Projects receive a score of 10 points if they connect two or more of the Heights ATP cities, or connects to a city outside of the plan area
	5	Connecting Destinations	Projects receive a score of up to 10 points if they are located within a quarter-mile of a key generator or community resource (School, Park, Library, or Business District): <ul style="list-style-type: none"> • 5 or more generators = 10 points • 3-4 generator = 6 points • 1-2 generators = 3 points • No generators = 0 points
	5	Meeting AT Demand	Projects receive more points for a higher Active Transportation demand score from ODOT's Walk.Bike.Ohio analysis. <ul style="list-style-type: none"> • High demand = 10 points • Med-high demand = 6 points • Low-med demand = 3 points • Low demand = 0 points
Safety	20	Five-Year Crash History	Projects will receive a score based on the number of bicycle and pedestrian crashes located within 300 feet of corridor projects or point/intersection improvement projects. <ul style="list-style-type: none"> • 5+ crashes = 6 points • 3-4 crashes = 4 points • 1-2 crashes = 2 points • 0 crashes = 0 points Projects will receive an additional 4 points if there are any fatal or severe injury crashes within 300 feet of corridor projects or point/intersection improvement projects.
	10	High-Risk Network – Systemic Safety Analysis	Projects receive 10 points if identified as a high-risk corridor or location from the Systemic Safety analysis.
Accessibility	10	Level of Traffic Stress (LTS)	Projects receive more points for higher LTS on a road segment. LTS analysis uses broadly available roadway characteristics to classify the experience of riding a bicycle on a street. <ul style="list-style-type: none"> • LTS 4 = 10 points • LTS 3 = 6 points • LTS 2 = 3 points • LTS 1 = 0 points
	10	Filling Gaps	Projects receive a score of 10 points if they fill a gap in the sidewalk network or receive points based on the number of connections to existing bicycle facilities: <ul style="list-style-type: none"> • 2 or more connections = 10 points • 1 connection = 5 points • 0 connections = 0 points
Health	10	Public Priorities	Projects receive up to 10 points based on the number of public comments in favor during the public comment period.
Equity	25	AT Need Analysis	Project receive more points for a higher Active Transportation need score from ODOT's Walk.Bike.Ohio analysis. <ul style="list-style-type: none"> • High need = 10 points • Med-high need = 5 points • Low need and low-med need = 0 points
Total	100		

PRIORITIZED INFRASTRUCTURE PROJECT LIST

Implementing this plan will take time and significant effort. **Table 8** identifies the prioritized projects based on the criteria described above. The projects are divided into the following categories:

- » Buffered bicycle lanes, separated bicycle lanes, and shared use paths (corridor projects with separation from vehicles)
- » Crossing improvement zones
- » Bicycle boulevards (including short, shared use path connections)
- » Sidewalk gaps
- » Intersections

Each category is prioritized as high, medium, or low, as the different project types typically had distinct distributions of scores and may be considered separately for implementation purposes. The intersection prioritization includes additional medium-high and medium-low categories due to the high number of intersections. This prioritization is also visualized in **Figure 26** and **Figure 27**. 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, Cleveland Heights, University Heights, and South Euclid should re-evaluate the priority list to track which projects have been implemented and to make adjustments as needed.

Table 8. Prioritized Infrastructure Project List

Priority Category	Corridor or Intersection	Project Limits	Project Type	ID	Jurisdiction(s)	Potential Funding Sources ¹
Buffered Bicycle Lanes, Separated Bicycle Lanes, and Shared Use Paths						
High	Warrensville Center Road/Noble Road	Study area limits	Separated Bicycle Lane and Buffered Bike Lane	5	CH, UH, SE	HSIP, SRTS, TAP
High	Cedar Road	Within study area limits (Euclid Heights Boulevard to Lyndway Road)	Shared Use Path & Separated Bicycle Lane	25	CH, UH, SE	HSIP, SRTS, TAP
High	Mayfield Road	Kenilworth Road to Sheridan Road	Shared Use Path & Separated Bicycle Lane	12	CH, SE	HSIP, SRTS, TAP
High	Taylor Road	Study area limits to Fairmount Boulevard	Bicycle Boulevard, Bicycle Lane, Buffered Bicycle Lane	10	CH, UH	HSIP, SRTS, TAP
High	Monticello Road	Mayfield Road to study area limits	Shared Use Path	4	CH, SE	HSIP, RTP, SRTS, TAP

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Priority Category	Corridor or Intersection	Project Limits	Project Type	ID	Jurisdiction(s)	Potential Funding Sources ¹
Buffered Bicycle Lanes, Separated Bicycle Lanes, and Shared Use Paths (cont.)						
High	Euclid Heights Boulevard	Cedar Road to Taylor Road	Shared Use Path	13	CH	HSIP, RTP, SRTS, TAP
Medium	Belvoir Boulevard	Bluestone Road to study area limits	Separated Bicycle Lane	9	CH, UH, SE	SRTS, TAP
Medium	Lee Road	Superior Road to study area limits	Separated Bicycle Lane	19	CH	HSIP, SRTS, TAP
Medium	Green Road	Study area limits to Monticello Boulevard	Separated Bicycle Lane	2	SE	SRTS, TAP
Medium	Raymont Boulevard	Raymont Boulevard (dead end) to Cedar Road/Taylor Road intersection	Shared Use Path	68	UH	TAP
Medium	Severance Circle	Full road length, including segments connecting to Mayfield Road and Taylor Road	Shared Use Path	66	CH	TAP
Medium	Severance Circle (additional connection)	Severance Circle to Crest Road	Shared Use Path	54	CH	TAP
Medium	Belvoir Boulevard	Study area limits to Bluestone Road (including separate segment in Cleveland Heights)	Shared Use Path	1	CH, SE	RTP, TAP
Medium	Washington Boulevard	Taylor Road to Belvoir Boulevard	Shared Use Path	23	CH, UH, SE	RTP, SRTS, TAP
Medium	Kenilworth Road	Euclid Heights Boulevard to Mayfield Road	Shared Use Path	24	CH	RTP, TAP
Low	Wrenford Road	Purvis Park to Belvoir Boulevard/Silsby Road intersection	Shared Use Path	69	UH	TAP
Low	North Park Boulevard	Martin Luther King Jr. Drive to Lee Road	Separated Bicycle Lane	67	CH	SRTS, TAP
Low	Anderson Road	Metropolitan Park Boulevard to study area limits	Bicycle Lane	7	SE	TAP
Low	Washington Boulevard	Edgehill Road to Taylor Road	Buffered Bicycle Lane	22	CH	SRTS, TAP
Low	Fairmount Boulevard and Shelburne Road	Blanche Ave to existing park path	Shared Use Path	32	CH	TAP
Low	Oakwood Green Park Path	Taylor Road to North Park Boulevard	Shared Use Path	20	CH, SE	RTP, TAP

HEIGHTS REGIONAL ACTIVE TRANSPORTATION PLAN

Priority Category	Corridor or Intersection	Project Limits	Project Type	ID	Jurisdiction(s)	Potential Funding Sources ¹
Buffered Bicycle Lanes, Separated Bicycle Lanes, and Shared Use Paths (cont.)						
Low	Langerdale Road, Lanphier Park, and College Road	Belvoir Boulevard to study area limits	Shared Use Path	16	SE	RTP, SRTS, TAP
Crossing Improvement Zones						
High	Mayfield Road	Monticello Boulevard to Ivydale Road and Severance Circle to Sheridan Road	Crossing Improvement Zone	12	CH, SE	HSIP, SRTS, TAP
High	Cedar Road	Euclid Heights Boulevard to Fairmount Boulevard, Oakdale Road to approximately 500 feet east of Taylor Road, Fenwick Road to Miramar Boulevard, Kerwin Road to Fenway Drive	Crossing Improvement Zone	25	CH, UH, SE	HSIP, SRTS, TAP
High	Warrensville Center Road/Noble Road	Study area limits to approximately 1000 feet south of Mayfield Road	Crossing Improvement Zone	5	CH, SE	HSIP, SRTS, TAP
High	Taylor Road	Euclid Heights Boulevard to Cedarbrook Road	Crossing Improvement Zone	10	CH	HSIP, SRTS, TAP
Medium	Lee Road	Superior Road to Fairfax Road	Crossing Improvement Zone	19	CH	HSIP, SRTS, TAP
Medium	Coventry Road	Mayfield Road to Euclid Heights Boulevard	Crossing Improvement Zone	65	CH	HSIP, SRTS, TAP
Bicycle Boulevards (including short, shared use path connections)						
High	Bluestone Road	Noble Road to shared use path entrance east of Green Road	Bicycle Boulevard & Shared Use Path	6	CH, SE	TAP
High	Harcourt Drive	Demington Drive to Green Road	Bicycle Boulevard	26	CH	TAP
High	Silsby Road, Essex Road, Westminster Road, and Clarkson Road	Cedar Road to North Park Boulevard	Bicycle Boulevard	28	CH, UH	TAP
High	Miramar Boulevard, Felton Road, Avondale Road, and Quarry Drive	Monticello Boulevard to study area limits	Bicycle Boulevard	8	CH, UH, SE	TAP

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Priority Category	Corridor or Intersection	Project Limits	Project Type	ID	Jurisdiction(s)	Potential Funding Sources ¹
Bicycle Boulevards (including short, shared use path connections, cont.)						
High	Liberty Road, Norma Road, and Ardmore Road	Euclid Heights Boulevard to Superior Park Drive	Bicycle Boulevard	11	CH, SE	TAP
High	Compton Road	Noble Road to Dorsh Road	Bicycle Boulevard & Shared Use Path	14	CH	TAP
Medium	Bayard Road	Belvoir Boulevard to Green Road	Bicycle Boulevard	15	SE	TAP
Medium	Edgehill Road	Overlook Road to Washington Boulevard	Bicycle Boulevard	18	CH	TAP
Medium	St. James Parkway and Scarborough Road	North Park Boulevard to Canterbury Road	Bicycle Boulevard	31	CH, UH	TAP
Medium	Verona Road, Antisdale Road, Revere Road, and Staunton Road	Washington Boulevard to Belvoir Boulevard	Bicycle Boulevard	21	CH, UH, SE	TAP
Low	Demington Drive	Cedar Road to North Park Boulevard	Bicycle Boulevard	27	CH	TAP
Low	Lincoln Boulevard, Cottage Grove Avenue, and Stratford Road	Euclid Heights Boulevard and Parkway Drive to North Park Boulevard	Bicycle Boulevard	17	CH	TAP
Low	Trebisky Road	Study area limits to Anderson Road	Bicycle Boulevard	3	SE	TAP
Low	Saybrook Road and Traymore Road	Silby Road to study area limits	Bicycle Boulevard	29	UH	TAP
Low	Washington Boulevard	Belvoir Boulevard to Green Road	Bicycle Boulevard	30	UH	TAP
Sidewalk Gaps						
High	Warrensville Center Road	Oakwood Drive to Bayard Road	New Sidewalk	52	CH	HSIP, TAP
High	Renwood Road	Donwell Drive to Green Road	New Sidewalk	55	SE	SRTS, TAP
High	Kenilworth Lane	Approximately 50 feet north of Kenilworth Mews for approximately 225 feet south	New Sidewalk	57	CH	TAP
High	Brookline Road (path connection)	Ardmore Road for approximately 225 feet south	New Sidewalk	48	CH	TAP
High	Yellowstone Road	Approximately 500 feet north of Glen Allen Drive to Mayfield Road	New Sidewalk	49	CH	TAP

HEIGHTS REGIONAL ACTIVE TRANSPORTATION PLAN

Priority Category	Corridor or Intersection	Project Limits	Project Type	ID	Jurisdiction(s)	Potential Funding Sources ¹
Sidewalk Gaps (cont.)						
High	Glen Allen Drive	Full road length (approximately 1150 feet)	New Sidewalk	50	CH	TAP
High	Birchtree Path	Full road length (approximately 225 feet)	New Sidewalk	51	CH	TAP
High	Lancaster Road	Greenvalue Drive to Green Road	New Sidewalk	35	SE	TAP
High	Woodridge Road	Approximately 275 feet east of Edison Road for approximately 125 feet	New Sidewalk	47	CH	TAP
Medium	Monticello Boulevard	Approximately 125 feet east of Quarry Drive to Belvoir Boulevard	New Sidewalk	44	CH	TAP
Medium	Belvoir Boulevard	Monticello Boulevard to Bluestone Road	New Sidewalk	45	CH	TAP
Medium	Superior Road	Approximately 75 feet west of Hillcrest Road to approximately 150 feet east of Ridgefield Road	New Sidewalk	53	CH	TAP
Medium	Denton Road	Chestnut Hills Drive to Devonshire Drive	New Sidewalk	59	CH	TAP
Medium	Chestnut Hills Drive	Denton Drive to North Park Boulevard	New Sidewalk	60	CH	TAP
Medium	Belvoir Boulevard	Section within Cleveland Heights	New Sidewalk	34	CH	TAP
Medium	Stuart Drive	McFarland Road to Anderson Road	New Sidewalk	43	SE	TAP
Medium	Reyburn Road	Section within Cleveland Heights	New Sidewalk	33	CH	TAP
Medium	Randolph Road	Woodview Road to Lecona Drive	New Sidewalk	40	CH	TAP
Medium	Brinkmore Road	St. James Parkway to Arlington Road	New Sidewalk	37	CH	TAP
Medium	Edgerly Road	Approximately 800 feet west of Edgerly Road to Edgerly Road	New Sidewalk	38	CH	TAP
Medium	Renfield Road	Brinkmore Road to Fenley Road	New Sidewalk	46	CH	TAP
Low	North Park Boulevard	Approximately 225 feet north of Bluestone Road to Bluestone Road	New Sidewalk	62	CH	SRTS, TAP
Low	Superior Road	Parkway Drive to Lee Road	New Sidewalk	56	CH	TAP

HEIGHTS REGIONAL ACTIVE TRANSPORTATION PLAN

Priority Category	Corridor or Intersection	Project Limits	Project Type	ID	Jurisdiction(s)	Potential Funding Sources ¹
Sidewalk Gaps (cont.)						
Low	St. James Parkway	Grandview Avenue to approximately 200 feet east of Ardleigh Drive	New Sidewalk	61	CH	TAP
Low	Derbyshire Road	Coventry Road to Renrock Road and Stillman Road to Lamberton Road	New Sidewalk	58	CH	TAP
Low	North Park Boulevard	North Park Boulevard to study area limits	New Sidewalk	64	CH	TAP
Low	Parkside Boulevard	Study area limits to Monticello Boulevard	New Sidewalk	36	SE	TAP
Low	Ammon Road	Parkside Boulevard to Trebisky Road	New Sidewalk	39	SE	TAP
Low	McFarland Road	Haywood Drive to approximately 325 feet east of Stuart Drive	New Sidewalk	41	SE	TAP
Low	Haywood Drive	McFarland Road to Stuart Drive	New Sidewalk	42	SE	TAP
Low	Monmouth Road	Approximately 200 feet east of Arlington Road to Stratford Road	New Sidewalk	63	CH	TAP
Intersections						
High	Cedar Road/Taylor Road	N/A	Signalized Intersection Improvements	136	CH, UH	HSIP, TAP
High	Warrensville Center Road/Mayfield Road	N/A	Signalized Intersection Improvements	113	CH, SE	HSIP, SRTS, TAP
High	Cedar Road/Euclid Heights Boulevard/Overlook Road	N/A	Signalized Intersection Improvements	132	CH	HSIP, TAP
High	Warrensville Center Road/Cedar Road	N/A	Signalized Intersection Improvements	138	UH, SE	HSIP, TAP
High	Cedar Road/Lee Road	N/A	Signalized Intersection Improvements	135	CH	HSIP, SRTS, TAP
High	Mayfield Road/Severance Circle/Copper Trace	N/A	Signalized Intersection Improvements	111	CH	SRTS, TAP
High	Cedar Road/Green Road	N/A	Signalized Intersection Improvements	140	UH, SE	HSIP, TAP

HEIGHTS REGIONAL ACTIVE TRANSPORTATION PLAN

Priority Category	Corridor or Intersection	Project Limits	Project Type	ID	Jurisdiction(s)	Potential Funding Sources ¹
Intersections (cont.)						
High	Green Road/Monticello Boulevard	N/A	Signalized Intersection Improvements	102	SE	HSIP, TAP
High	Noble Road/Monticello Boulevard	N/A	Signalized Intersection Improvements	106	CH	HSIP, SRTS, TAP
High	Mayfield Road/Yellowstone Road	N/A	Unsignalized Intersection Improvements	112	CH	SRTS, TAP
High	Mayfield Road/Green Road	N/A	Signalized Intersection Improvements	117	SE	HSIP, TAP
High	Mayfield Road/Belvoir Boulevard	N/A	Signalized Intersection Improvements	115	SE	HSIP, TAP
Med-High	Taylor Road/Superior Road	N/A	Signalized Intersection Improvements	130	CH	TAP
Med-High	Noble Road/Quilliams Road	N/A	Signalized Intersection Improvements	105	CH	HSIP, SRTS, TAP
Med-High	Monticello Boulevard/Englewood Road	N/A	Unsignalized Intersection Improvements	107	CH	TAP
Med-High	Mayfield Road/Felton Road/Grantleigh Road	N/A	Offset Intersection Treatment	114	SE	TAP
Med-High	Mayfield Road/Monticello Boulevard/Cumberland Road	N/A	Signalized Intersection Improvements	121	CH	HSIP, TAP
Med-High	Monticello Boulevard/Belvoir Boulevard	N/A	Signalized Intersection Improvements	103	CH, SE	TAP
Med-High	Taylor Road/Washington Boulevard	N/A	Signalized Intersection Improvements	131	CH	TAP
Med-High	Cedar Road/Belvoir Boulevard	N/A	Signalized Intersection Improvements	139	UH, SE	TAP
Med-High	Green Road/Bluestone Road	N/A	Unsignalized Intersection Improvements	104	SE	TAP
Med-High	Mayfield Road/Coventry Road	N/A	Signalized Intersection Improvements	123	CH	HSIP, TAP

HEIGHTS REGIONAL ACTIVE TRANSPORTATION PLAN

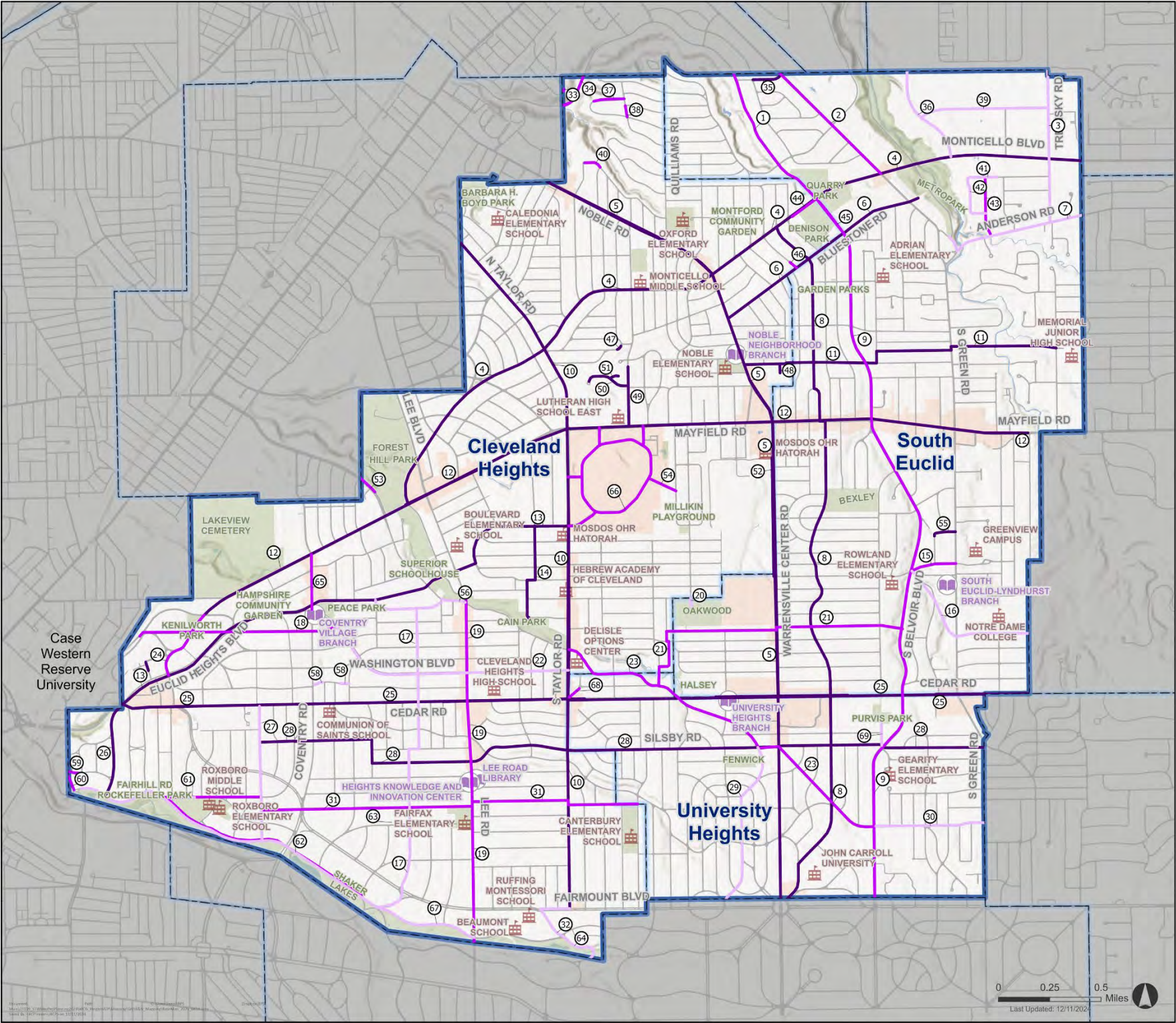
Priority Category	Corridor or Intersection	Project Limits	Project Type	ID	Jurisdiction(s)	Potential Funding Sources ¹
Intersections (cont.)						
Medium	Taylor Road/Euclid Heights Boulevard/Severance Circle	N/A	Signalized Intersection Improvements	122	CH	TAP
Medium	Monticello Road/Yellowstone Road	N/A	Signalized Intersection Improvements	108	CH	TAP
Medium	Belvoir Boulevard/Princeton Boulevard	N/A	Signalized Intersection Improvements	101	SE	HSIP, TAP
Medium	Taylor Road/Monticello Boulevard	N/A	Signalized Intersection Improvements	109	CH	TAP
Medium	Cedar Road/Washington Boulevard	N/A	Signalized Intersection Improvements	137	UH, SE	TAP
Medium	Warrensville Center Road/Antisdale Road/Verona Road	N/A	Signalized Intersection Improvements	128	SE	TAP
Medium	Green Road/Messenger Court	N/A	Unsignalized Intersection Improvements	116	SE	TAP
Medium	Green Road/Rushton Road	N/A	Unsignalized Intersection Improvements	118	SE	TAP
Medium	Silsby Road/Miramar Boulevard	N/A	Unsignalized Intersection Improvements	143	UH	HSIP, TAP
Medium	Taylor Road/Silsby Road	N/A	Signalized Intersection Improvements	141	CH, UH	TAP
Med-Low	Mayfield Road/Taylor Road	N/A	Signalized Intersection Improvements	110	CH	TAP
Med-Low	Edgehill Road/Kenilworth Road	N/A	Signalized Intersection Improvements	126	CH	TAP
Med-Low	Fairmount Boulevard/Demington Drive	N/A	RRFB	144	CH	TAP
Med-Low	Green Road/Bayard Road	N/A	Signalized Intersection Improvements	124	SE	TAP
Med-Low	Mayfield Road/Lee Road	N/A	Signalized Intersection Improvements	120	CH	TAP

HEIGHTS REGIONAL ACTIVE TRANSPORTATION PLAN

Priority Category	Corridor or Intersection	Project Limits	Project Type	ID	Jurisdiction(s)	Potential Funding Sources ¹
Intersections (cont.)						
Med-Low	Cedar Road/Demington Drive	N/A	Signalized Intersection Improvements	133	CH	TAP
Med-Low	Edgehill Road/Euclid Heights Boulevard	N/A	Unsignalized Intersection Improvements	127	CH	TAP
Med-Low	Lee Boulevard/Monticello Boulevard	N/A	Signalized Intersection Improvements	119	CH	TAP
Med-Low	Lee Road/Scarborough Road	N/A	Offset Intersection Treatment	146	CH	TAP
Low	Warrensville Center Road/Washington Boulevard	N/A	Signalized Intersection Improvements	142	UH	TAP
Low	Green Road/College Road	N/A	Unsignalized Intersection Improvements	129	SE	TAP
Low	Fairmount Boulevard/Shelburne Road	N/A	RRFB	149	CH	TAP
Low	Green Road/South Euclid Lyndhurst Library/Notre Dame Driveway	N/A	Signalized Intersection Improvements	125	SE	TAP
Low	Cedar Road/Cottage Grove Avenue	N/A	Signalized Intersection Improvements	134	CH	TAP
Low	Fairmount Boulevard/Coventry Road/Scarborough Road	N/A	Signalized Intersection Improvements	145	CH	TAP
Low	Fairmount Boulevard/Stratford Road/North Woodland Road	N/A	RRFB	148	CH	TAP
Low	Taylor Road/Scarborough Road	N/A	Signalized Intersection Improvements	147	CH	TAP

Notes:

1. HSIP = Highway Safety Improvement Program, SRTS = Safe Routes to School, TAP = Transportation Alternatives Program, RTP = Recreational Trails Program



The Heights Regional Active Transportation Plan

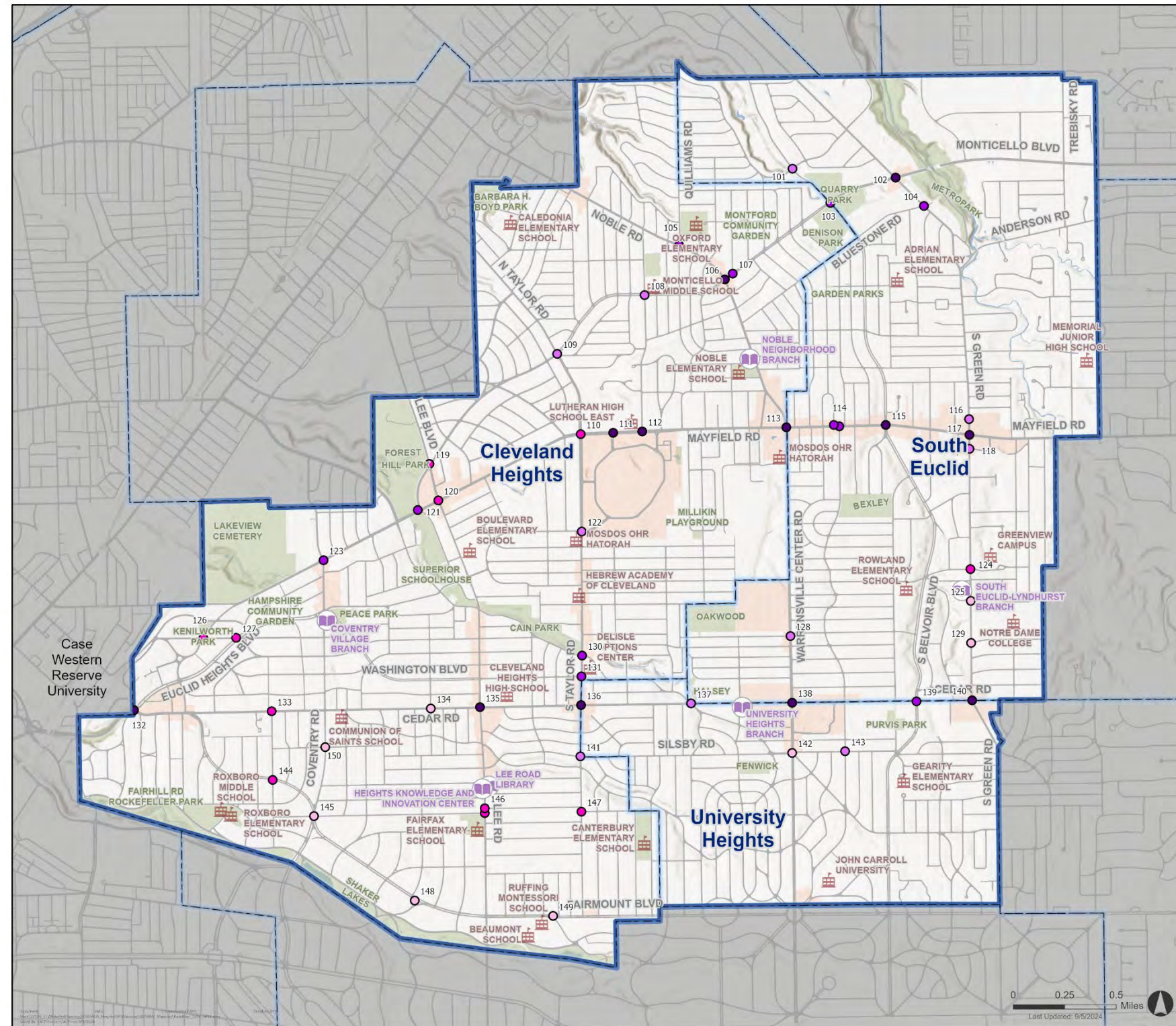


Segment Projects Priority Categories

- Project Priority
- High Priority
 - Medium Priority
 - Low Priority

- Reference Layers
- Schools
 - Libraries
 - Water
 - Parks
 - Business Districts
 - City Boundaries
 - Plan Area Boundary

Figure 26: Segment Project Prioritization



The Heights Regional Active Transportation Plan



Intersection Projects Priority Categories

Project Priority

- High Priority
- Medium-High Priority
- Medium Priority
- Medium-Low Priority
- Low Priority

Reference Layers

- Schools
- Libraries
- Water
- Parks
- Business Districts
- City Boundaries
- Plan Area Boundary

Figure 27: Intersection Project Prioritization

PRIORITY PROJECT CUTSHEETS

Cleveland Heights, University Heights, and South Euclid identified three projects to further study. The selected projects support travel between the three jurisdictions, require complex decision-making, and are high priority projects based on the project prioritization list. The additional study of these projects may allow for quicker implementation following plan adoption. The three projects selected are:

1. Warrensville Center Road/Noble Road - separated bicycle lanes, crossing improvements, and sidewalk gap fill (Project #5 and 52)
2. Bluestone Road - bicycle boulevard (Project #6 and 104)
3. Miramar Boulevard, Felton Road, Avondale Road, and Quarry Drive - bicycle boulevard (Project #8) and Belvoir Boulevard - buffered bicycle lanes (Project #9)

A brief overview of each project is presented in this section, together with select information from the cutsheet. A complete cutsheet for each project are included in **Appendix C**.

What is a cut sheet?

A cut sheet provides a summary of information about a project, such as the vehicle speed limits, average daily traffic, and connectivity to other active transportation routes. Depending on the project, it can also include information about project elements, cost estimates, and a project visualization.

Warrensville Center Road/Noble Road

The Warrensville Center Road/Noble Road project consists of adding a separated bicycle lane from the northern boundary of Cleveland Heights (near Greyton Road) to the southern boundary of University Heights (Fairmount Boulevard), filling a sidewalk gap between Oakwood Drive and Bayard Road, and pedestrian crossing improvements at intersections. It was the highest-scoring project under both the “Buffered Bicycle Lanes, Separated Bicycle Lanes, and Shared Use Paths” category and the “Sidewalk Gaps” category in the project prioritization list, and was high-scoring in the “Crossing Improvements Zones” category. The corridor is a north-south route that connects all three cities and includes bus transit.

Sample cross-sections for the project corridor are shown in **Figure 29**, and more are included in **Appendix C**. A cost estimate for the corridor is shown in **Figure 28**. Note that the cost estimate does not include the portion of the project in University Heights.

Figure 28: Sample Warrensville Center Road/Noble Road Cross-Sections for Existing Conditions (top) and Project (bottom)

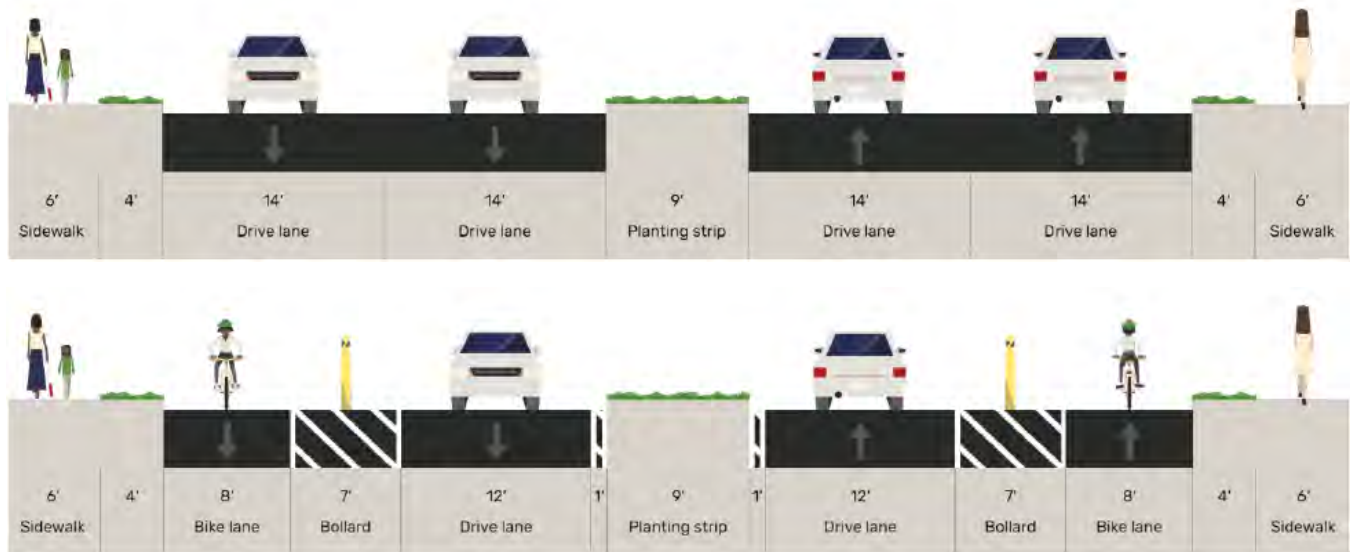


Figure 29: Warrensville Center Road/Noble Road Cost Estimate

Warrensville-Noble Road		
Opinion of Probable Costs		
Description		Total Cost
Roadway Pavement Markings and Delineators		\$ 974,300.00
Bus Stops		\$ 960,000.00
Intersections		\$ 900,000.00
Bicycle Safe Grates (Drainage)		\$ 124,500.00
Construction Costs		\$ 2,958,800.00
Maintenance of Traffic	LS	\$ 100,000.00
Mobilization	LS	\$ 150,000.00
Public Utilities	LS	\$ 50,000.00
Construction Subtotal		\$ 3,258,800.00
Contingency	20%	\$ 651,760.00
Design	10%	\$ 391,060.00
Total Construction Costs (2024)		\$ 4,301,620.00
Total Construction Costs (2029)*		\$5,370,226.51
* Inflation costs calculated using the ODOT FY 2024-2028 Business Plan Inflation Calculator		
Opinions of probable cost were developed by identifying major pay items and establishing rough quantities to determine a rough order of magnitude cost. Additional pay items have been assigned approximate lump sum prices based on a percentage of the anticipated construction cost. Planning-level cost opinions include a 20% contingency to cover items that are undefined or are typically unknown early in the planning phase of a project. Unit costs are based on 2024 dollars and were assigned based on historical cost data from ODOT. Cost opinions do not include easement and right-of-way acquisition; permitting, inspection, or construction management; engineering, surveying, geotechnical investigation, environmental documentation, special site remediation, escalation, or the cost for ongoing maintenance. A cost range has been assigned to certain general categories such as utility relocations; however, these costs can vary widely depending on the exact details and nature of the work. The overall cost opinions are intended to be general and used only for planning purposes. Toole Design Group, LLC makes no guarantees or warranties regarding the cost estimate herein. Construction costs will vary based on the ultimate project scope, actual site conditions and constraints, schedule, and economic conditions at the time of construction.		

Bluestone Road

The Bluestone Road project consists of adding a bicycle boulevard from Noble Road to the entrance of Euclid Creek Reservation at Green Road, and includes unsignalized intersection improvements at the Green Road/Bluestone Road intersection. It was the highest-scoring project under the “Bicycle Boulevard” category, and the intersection improvement received a medium-high score. The corridor passes through Cleveland Heights and South Euclid.

The project team developed a conceptual design for the project based on City staff input, together with a list of potential bicycle boulevard elements and quantities. The conceptual design rendering for the Green Road/Bluestone Road intersection is shown in **Figure 30**, including a version with key features labeled. More information is included in **Appendix C**.

Figure 30: Bluestone Road and Green Road Conceptual Design Rendering (top) and with labeling (bottom)



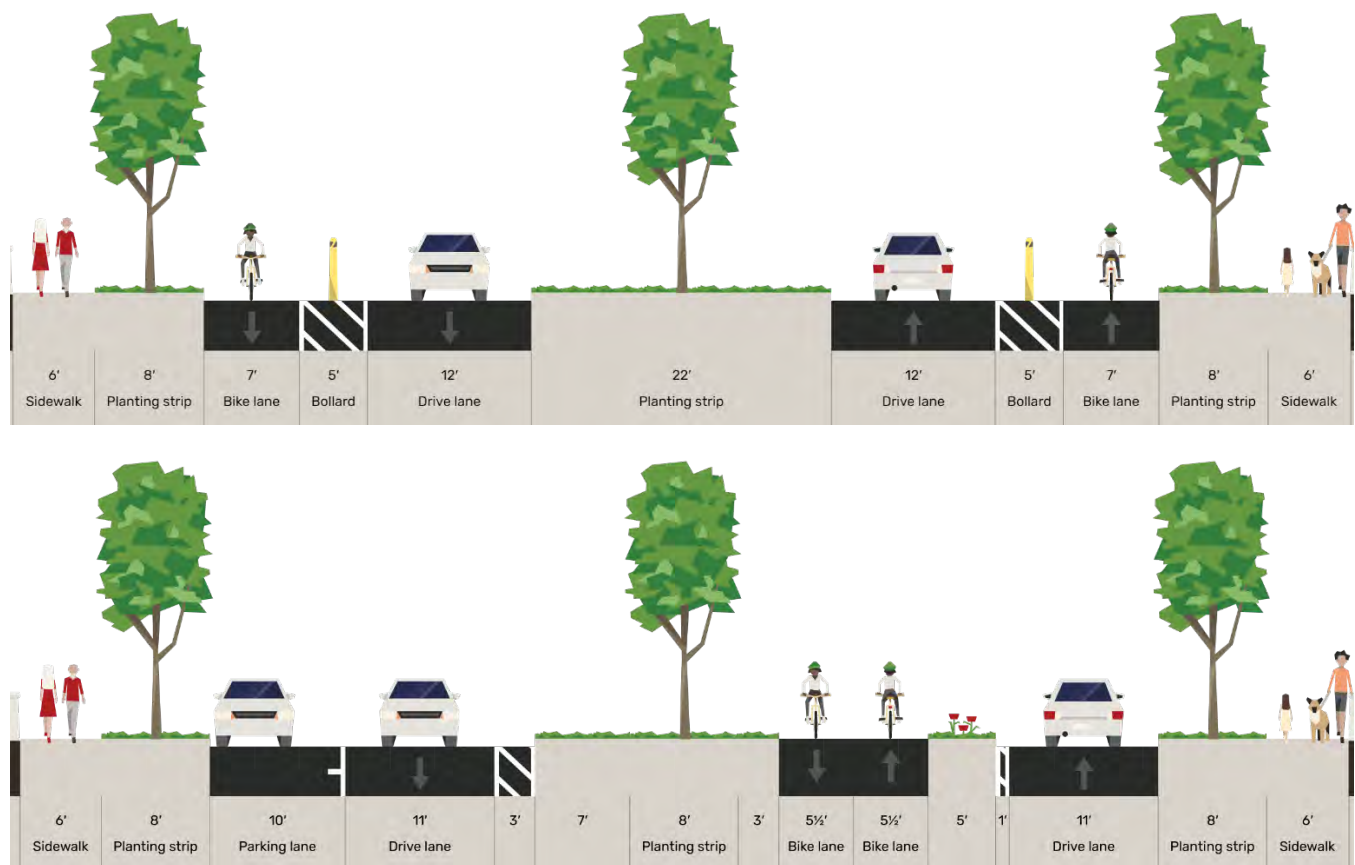
Miramar Boulevard, Felton Road, Avondale Road, and Quarry Drive; Belvoir Boulevard

The Miramar Boulevard, Felton Road, Avondale Road, and Quarry Drive project (hereafter referred to as the Miramar Boulevard/Felton Road project) consists of adding a bicycle boulevard from Bluestone Road to the southern boundary of University Heights at Fairmount Circle. It was the fourth-highest scoring project under the “Bicycle Boulevard” category in the project prioritization list. Miramar Boulevard/Felton Road is a parallel and nearby corridor to the proposed Belvoir Boulevard buffered bicycle lanes, which would be from Bluestone Road to the southern boundary of University Heights at Fairmount Boulevard. The Belvoir

Boulevard project scored at a medium level in the project prioritization under the “Buffered Bicycle Lanes, Separated Bicycle Lanes, and Shared Use Paths” category. Both corridors are north-south roads that intersect all three cities.

City staff were interested in comparing the potential approaches for the two corridors to help evaluate which one to prioritize for project development. The project team developed a list of potential bicycle boulevard elements and quantities for the Miramar Boulevard/Felton Road project, and potential cross-sections for the Belvoir Boulevard project. While prior planning efforts had proposed buffered bicycle lanes on Belvoir Boulevard, City staff suggested evaluating separated bicycle lanes along the corridor instead. Sample cross-sections based on that input are shown in **Figure 31**. The team also considered six-legged and offset intersection designs that could be applied on the project corridors. More information is included in **Appendix C**.

Figure 31: Sample Belvoir Boulevard Cross-Sections for One-way (top) and Two-way (bottom) Separated Bicycle Lane Alternatives



IMPLEMENTATION





IMPLEMENTATION

ROLES AND RESPONSIBILITIES

Collaboration is the first step toward successful implementation of the Heights 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 9** for a list of responsibilities.

Table 9. Implementation Responsibilities

Agency	Responsibility	Description
<i>Cities of Cleveland Heights/ University Heights/ South Euclid Local Admin</i>	City owned facilities	Design, construction, maintenance, and evaluation of bicycling and walking facilities per identified projects.
	Legislation and municipal ordinances	Help draft and implement supporting legislation and municipal ordinances.
	Collaboration with stakeholders	Collaborate with neighboring jurisdictions, government departments, local businesses, property owners, and community organizations to identify opportunities for policy and project implementation and maintenance.
	Public engagement	Oversee and collaborate in planning and organizing community events and public engagement efforts.
<i>Planning Departments</i>	Drive AT plan adoption and implementation	Adopt and publish the Active Transportation Plan.
		Make updates to plan as needed.
		Supportive program implementation.

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Agency	Responsibility	Description
	Legislation and municipal ordinances	Help draft and implement supporting legislation and municipal ordinances
	Supportive policies and programming	Research, draft, implement complementary policies
	Project Implementation	Oversee monitoring and evaluation of implement best practices, policies, and walking/cycling facilities
<i>Engineering Departments</i>	City owned facilities	Design, construction, maintenance, and evaluation of city-owned bicycling and walking facilities
		Establish an annual review of street paving plan in comparison with the active transportation network to identify appropriate on-street facilities to complete.
		Update maintenance policy for bicycle and pedestrian facilities.
<i>Planning Commissions/ City Councils</i>	Legislation and municipal ordinances	Draft and implement supporting legislation and municipal ordinances
	Project Implementation	Help facilitate identification of infrastructure locations, approval process, funding, and construction for projects.
<i>Parks & Recreation Departments</i>	Public Engagement	Oversee and collaborate in planning and organizing community events and public engagement efforts
<i>Greater Cleveland Transit Authority</i>	Transit facilities	Design, construction, maintenance, and evaluation of transit owned bicycling and walking-friendly facilities
	Public Engagement	Collaborate with local government and organizations to help community members learn about different public transit options
<i>Schools/ School Districts</i>	Public Engagement	Train educators on safe walking and bicycling practices and road rules
		Provide education to public on safe active transportation practices and road rules
<i>Community Organizations</i>	Project Implementation	Collaborate with local government to identify opportunities for policy and project implementation, maintenance, and evaluation
	Public Engagement	Provide education to government staff and community members on safe active transportation practices and road rules
<i>NOACA</i>	Project Implementation	Support the implementation of local projects through technical resources and funding
<i>ODOT</i>	State owned facilities outside of municipalities	Incorporate bicycling and walking facilities into state and U.S. highways.
	Project Implementation	Support the implementation of local projects through technical resources and funding

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 taxpayer-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 10** 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. In addition, ODOT and the Ohio Department of Health (ODH) have developed an [Active Transportation Funding Matrix](#). 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 website](#).



Miramar Boulevard, a proposed bicycle boulevard corridor

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Table 10. Primary Active Transportation Funds in Ohio

Funding Source	Distributed by	Eligible Project Examples	Eligible Project Sponsor
<u>Transportation Alternatives</u>	Metropolitan Planning Organization (if applicable), or Ohio Department of Transportation (ODOT) if not	<ul style="list-style-type: none"> • Bicycle & pedestrian facilities • Safe routes for non-drivers • Conversion & use of abandoned railroad facilities • Overlooks & viewing areas 	Local governments
<u>Safe Routes to School</u>	ODOT	<ul style="list-style-type: none"> • Infrastructure • Non-Infrastructure • School Travel Plan assistance 	Local governments (infrastructure) Local governments, school or health district, or non-profit (non-infrastructure)
<u>Highway Safety Improvement Program</u>	ODOT (Coordinate with local ODOT District to submit a safety study)	<ul style="list-style-type: none"> • Signalization • Turn lanes • Pavement markings • Traffic signals • Pedestrian signals/crosswalks • Bike lanes • Road diets 	Local governments
<u>Recreational Trails Program</u>	Ohio Department of Natural Resources (ODNR)	<ul style="list-style-type: none"> • 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
<u>Clean Ohio Trails Fund</u>	ODNR	<ul style="list-style-type: none"> • 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
<u>Clean Ohio Green Space Conservation Program</u>	Ohio Public Works Commission (OPWC)	<ul style="list-style-type: none"> • 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. As further evidence for the importance of maintenance, the top action that people said would encourage more walking and rolling in the first online survey for the Heights ATP was better maintenance of sidewalks and trails (55 percent). Overall street maintenance is also important in locations with on-street bicycle facilities.

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 (see **Table 11**). 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 [ODOT's Pedestrian and Bicycle Snow and Ice Removal Toolkit](#).

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.

Table 11: 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
Seasonal	Sidewalks	Concrete panel replacement
	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/reggrading/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
10-year	Shared Use Paths	Resurface/reggrade/re-stripe shared use paths
20-year	Shared Use Paths/ Sidewalks	Assess and replace/reconstruct shared use paths/sidewalks

MAINTENANCE ACTIVITIES

Different facility types require different types of strategies to be maintained. **Table 12** breaks down maintenance activities and strategies for each by facility type.

Table 12: 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, mudjacking).
		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, the cities of Cleveland Heights, University Heights, and South Euclid must be able to measure whether these investments are paying active transportation dividends (i.e. more people walking and bicycling). An affirmative answer reinforces this Plan’s legitimacy and provides evidence that future investments will also yield positive results. The performance measures listed in **Table 13** will chart progress toward making walking and bicycling safe, connected, and comfortable. The cities of Cleveland Heights, University Heights, and South Euclid 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 responsibility for data collection and analysis.

Table 13: Performance Measures

<i>Plan Goal</i>	<i>Performance Measure</i>	<i>Timeline (how often is data collected/updated)</i>	<i>Responsibility (who will collect the data)</i>
<i>Connectivity</i>	Miles of sidewalk added and/or repaired	Annually	Planning Departments and Engineering Departments (Cities of Cleveland Heights, University Heights, and South Euclid)
	Miles of on-street bike network added and/or repaired	Annually	Planning Departments and Engineering Departments (Cities of Cleveland Heights, University Heights, and South Euclid)
	Miles of shared use paths added and/or repaired	Annually	Planning Departments and Engineering Departments (Cities of Cleveland Heights, University Heights, and South Euclid)
	Number and type of communications and tools developed promoting active transportation (i.e. social media, emails, website, trail guides, digital maps)	Annually	Communications Teams (Cities of Cleveland Heights, University Heights, and South Euclid)
	Digital communications – audience reached (i.e. views, like counts, interactions, subscriptions)	Annually	Communications Teams (Cities of Cleveland Heights, University Heights, and South Euclid)

HEIGHTS REGIONAL ACTIVE TRANSPORTATION PLAN

Plan Goal	Performance Measure	Timeline (how often is data collected/updated)	Responsibility (who will collect the data)
<i>Safety</i>	Safety statistics tracking	Annually	Police Departments (Cities of Cleveland Heights, University Heights, and South Euclid) ODOT
	Number of vehicular accidents: <ul style="list-style-type: none"> - Total - Involving pedestrians - Involving cyclists - Near points of interest - Before/after safety improvements 	Annually	Police Departments (Cities of Cleveland Heights, University Heights, and South Euclid) ODOT
<i>Accessibility</i>	Number of bicycle parking and storage facilities added and/or repaired	Annually	Planning Departments (Cities of Cleveland Heights, University Heights, and South Euclid)
	Number of ADA training sessions held	Annually	Planning and Engineering Departments (Cities of Cleveland Heights, University Heights, and South Euclid)
	Number of ADA compliant projects completed	Annually	Planning and Engineering Departments (Cities of Cleveland Heights, University Heights, and South Euclid)
<i>Health</i>	Number of community walking and biking events held	Annually	City Parks and Recreation Departments (Cities of Cleveland Heights, University Heights, and South Euclid)
	Number of safe walking and biking training sessions held annually	Annually	Cities of Cleveland Heights, University Heights, and South Euclid Heights Bicycle Coalition
<i>Education</i>	Number of bicycle and pedestrian safety classes taught to police officers	Annually	Police Departments (Cities of Cleveland Heights, University Heights, and South Euclid) Heights Bicycle Coalition

HEIGHTS REGIONAL ACTIVE TRANSPORTATION PLAN

Plan Goal	Performance Measure	Timeline (how often is data collected/updated)	Responsibility (who will collect the data)
<i>Education, cont.</i>	Number of community-led safety workshops and town hall meetings on bicycle and pedestrian safety issues	Annually	Police Departments (Cities of Cleveland Heights, University Heights, and South Euclid) Heights Bicycle Coalition
	Number of people reached by trainings and curricula developed (i.e. educators trained, students)	Annually	Cities of Cleveland Heights, University Heights, and South Euclid
	Number of interactions per public transit social media campaign	Per campaign	GCRTA
	Increase in pedestrian and cyclist usage after improvements are made (bike and ped counts)	Annually	Cities of Cleveland Heights, University Heights, and South Euclid NOACA

APPENDIX A

PUBLIC INPUT SUMMARY





APPENDIX A - PUBLIC INPUT SUMMARY

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STEERING COMMITTEE MEETING #1

This section summarizes the first Steering Committee for the Heights Regional ATP, which took place on November 20, 2023. At least 17 attendees representing the cities of Cleveland Heights, University Heights, South Euclid, as well as Cuyahoga County and local organizations participated in the meeting. The group provided input on existing plans and policies in the area, conducted a mapping exercise, and brainstormed important themes for the plan's vision and goals. The discussion items from the existing plans and policies input and mapping exercise are summarized below. The vision and goals discussions were synthesized to develop the vision and goals statements.

EXISTING PLANS AND POLICIES INPUT

After the consultants presented highlights of known policies and programs in the project area, stakeholders noted the following additional policies and programs:

- » Regional Scooter Initiative – The three jurisdictions are the only suburbs participating in the regional scooter initiative with Cuyahoga County. The program allows Lime, Bird, and Link to provide bikeshare and scooters in the area and the general sense is that it has been successful.
- » Bike with the Mayor – Over 500 people participated in these events in the inauguals year to show elected officials where members of the community want new bicycle facilities or to highlight successful infrastructure.
- » Bike Suitability Maps – NOACA provides online maps of road suitability for biking and each year the agency prints biking maps for one of the counties.
- » Cuyahoga County Greenprint – This tool will be available soon and will include all Level of Traffic Stress, along with bicycle and pedestrian crash maps.
- » Tuesday Night Community Rides – from May to October, the Heights Bicycle Coalition runs rides for 20-50 or more people.
- » The Heights Bicycle Coalition is trying to partner with schools to develop bicycle clubs and bike buses.

MAPPING EXERCISE

The stakeholders participated in a mapping exercise where they identified existing gaps and generators in the project area, in addition to positives and negatives related to existing infrastructure. Participants noted that while many areas are walkable and bikeable, there are some missing connections, especially crossings across key roads. Recent projects that added pedestrian crossing amenities, reduced vehicle lanes on wide arterials, and added new bicycle facilities were appreciated. The more detailed feedback from this exercise is summarized below.

- » Positives of existing infrastructure
 - Recent improvements on Mayfield Road to reduce travel lanes, remove lights, and add crosswalks

- Recent improvements on Warrensville Center Road to reduce travel lanes, remove lights, and add crosswalks
- Recent improvements including bicycle lanes and intersection designs along South Green Road. The commenter highlighted the bicycle boxes and bicycle lane extensions at the Green Road/Mayfield Road intersection.
- The connection of South Green Road to the Euclid Creek Reservation
- » Negatives of existing infrastructure
 - Warrensville Center Road between Oakwood Drive and Bayard Road – There is a sidewalk, crosswalk, and lighting gap. The area is also overgrown, and bus stops are present without paved access to them.
 - Missing bicycle and pedestrian connection between Severance Millikin Playground and Severance Center
 - Bad road, and perhaps bicycling conditions, around Severance Center
 - Busy intersection, cut-through traffic, and rush hour congestion occurring near Rowland Elementary School
 - Need for lower-speed traffic around Severance Center
 - Silsby Road neighborhood Greenway doesn't feel safe
- » Gaps
 - Missing comfortable intersection crossings for pedestrians at the Cedar Road and Fairmount Boulevard intersection
 - Missing comfortable intersection crossings for pedestrians at the Coventry Road and Fairmount Boulevard intersection
 - Missing comfortable intersection crossings for pedestrians and bicyclists at the Cedar Road and Taylor Road intersection
 - Missing comfortable connections to Purvis Park
 - Lack of kid-friendly crossings along South Belvoir Road near parks along Adrian Road in South Euclid.
 - Lack of signal or crossings at the South Belvoir Boulevard and Elmwood Road intersection.
 - Missing a better connection via Bluestone Road to Euclid Creek Reservation.
 - Insufficient crossings to accommodate pedestrian traffic on Fridays and Saturdays near the Orthodox Jewish Community Center in southeast University Heights.
 - Missing connection between trails near Cumberland Park and Forest Hills Park
- » Generators
 - State and regional parks including Cain Park, Euclid Creek Reservation, Forest Hill Park, and Shaker Lakes
 - Business districts such as Cedar Warrensville, Cedar Green, Cedar Lee, Coventry Village, Mayfield Corridor, and Severance Commercial District
 - John Carroll University, Notre Dame College, and Case Western Reserve University (in Cleveland, just west of Cleveland Heights)

STEERING COMMITTEE MEETING #2

This section summarizes the second Steering Committee meeting for the Heights Regional ATP, which took place on February 26, 2024. At least 13 attendees representing the cities of Cleveland Heights, University Heights, South Euclid, as well as Cuyahoga County, the Greater Cleveland Regional Transit Authority, and local organizations participated in the meeting. The group discussed the existing conditions analysis results for the project area, public comments to date, and provided input on the action items under each ATP goal. The discussion related to the existing conditions analysis is summarized below. The action item exercise was used to develop that section of the ATP document and is not included below.

EXISTING CONDITIONS AND DATA ANALYSIS

Discussion and comments on the existing conditions analysis are grouped below by topic.

» Network Utilization

○ Pedestrian Activity

- Participants asked questions about the timeframe for StreetLight Data, including the year and months and whether walks of any distance are captured.
 - The StreetLight Data results are from April/May/June and September/October/November 2019
 - Trips should be captured as long as the person has their cell phone and allowed data collection or sharing.
- There were also questions about populations that might not be captured, such as members of the Orthodox Jewish community that don't carry phones on Fridays or Saturdays and students.
 - Green Road south of Cedar Road and Taylor Road south of Severance Center are likely underrepresenting pedestrian volumes due to the Orthodox Jewish community in those areas.
- There were additional questions about cell phone penetration with transit riders.
 - The RTA representative offered to send ridership data on relevant routes.
- Someone mentioned possible changes at Notre Dame college, but the sense was that this may not impact pedestrian activity.
- The consultant team noted that network utilization is just one of the analyses, and the project team will be looking at all the analyses together.

○ Bicycle Activity

- The group discussed how StreetLight results from 2019 would not capture some changes.
 - The Green Road corridor didn't have bike lanes until 2023.
 - Warrensville Center Road bike lanes were installed in 2019.
- There was additional discussion that it would be a good long-term activity to before/after on new bicycle facilities and compare to StreetLight results from 2019.
 - TLCI phase 1 in the plan area was one idea of facilities to count.

- NOACA does twice annual bike counts that could support this activity.
 - A Heights Bike Coalition representative mentioned that the group is involved in the counts.
 - NOACA added a few count locations along the Neighborhood Greenways, so there may be some counts available.
 - One stakeholder encouraged NOACA to do the counts in early May before students go home for the semester.
 - Noble Road – There is a lot of citizen activity and future development, so bike activity could change in the future.
 - Ken (Cleveland Heights) mentioned that the City will be meeting with the Noble neighborhood tomorrow and will bring up the ATP process.
 - There was discussion that if there was a lot of slow-moving traffic it could be misrepresentative, such as around schools zones. The RTA representative stated they felt that the data is not picking up buses.
- » Equity Analysis
 - One stakeholder noted that Warrensville Center Road divides the community. It's difficult to cross and feels very divided, and others agreed.
- » Level of Traffic Stress
 - There was discussion that the southern section of Lee Road should be shown as higher stress than the current map because the striping to narrow travel lanes is traffic calming rather than bike lanes.
 - Someone else noted that Taylor Road is extremely narrow, so feels stressful to bike on.
 - NOACA has LTS for all streets, but project team will need to check when the data was pulled.
 - In response to a photo of new Green Road bicycle lanes, the RTA representative noted that it is a difficult stop for a bus because the bus has to cross the bike lane to reach the curb. RTA would prefer to reduce the number of times a bus has to come to the curb across a bicycle lane. RTA has bus stop design guidelines that they can share.
- » Safety Analysis
 - In response to the intersection risk analysis, someone noted that bicycle infrastructure and pedestrian infrastructure treatments can be different, and asked if bicycle and pedestrian risk factors could be separated.
 - Yes, the data could be separated out.
 - One stakeholder asked if midblock crossings considered in the intersection analysis.
 - No, but midblock crossings are considered in the segment analysis.
 - A law enforcement representative stated that often crash can be attributed to lack of attention of the driver and rarely would a bicyclist or pedestrian be cited at fault for a crash.
 - One representative noted that topography can play a role into safety.
 - One stakeholder offered to send exact locations of recent crashes, because 2023 data is not in the analysis.
 - There were four fatalities in Cleveland Heights.
 - Articles shared post-meeting:

- [Cleveland Heights officials plan further safety measures after two pedestrians struck and killed in Cedar-Lee District](#)
- [Man dies after getting struck by car in Cleveland Heights](#)
- [Pedestrian dies after hit by car in Cleveland Heights, police investigating](#)

ACTION ITEM EXERCISE SUMMARY

Attendee suggestions for action items under each goal are noted below. If more than one person suggested similar action items, they have been grouped. Attendees could also vote for action items from an example ATP, and those votes are summarized after the suggestions that attendees wrote themselves.

» Connectivity

- Address major intersections on Warrensville Center Road, Cedar Road, and Mayfield Road to facilitate safe bicycle and pedestrian crossings.
- Clear signage showing people to greenway and other safer routes (Three commenters)
- Create an accessible online map
- Create an Active Transportation network that connects business districts, parks, and other destinations with no gaps (Two commenters)
- Connect schools to the established routes
- Ensure street sweeping and maintenance, such as filling potholes, emphasizes these facilities
- Set a goal of east/west and north/south facilities on 10% of roadways
- Consider any new developments to focus on walkability/bicycle within and to transit
- Zoning to encourage density and lower average trip length
- Minimize parking to reduce attractiveness of cars

» Safety

- Address roadway and sidewalk maintenance through more proactive repair.
- Improve lighting in key business districts.
- Provide mid-block crossings on Warrensville Center Road.
- Reduce speeds on roadways was mentioned in several ways, such as reducing speed limits on all roads to 20 mph, reducing speeds on some major roadways, calming traffic on neighborhood and main roads alike, and lowering speed limits wherever possible (Four commenters)
- End right turn on red at intersections
- Increase penalties for speeding or reckless driving
- Remove all slip lanes that currently exist
- Establish alternative safer routes
- More bike lanes
- Maintain ongoing feedback system for residents to raise concerns and gaps in the system
- Adopt Vision Zero and Complete Streets legislation in all cities
- Adopt and implement best practice roadway design guide for pedestrian and bicycle safety including noting any differences from ODOT standards (Two commenters)
- Establish a goal to reduce collisions by 50% every three years
- Advocate for updated driver education at state level to cover biking, walking, and rolling

- Reduce lane widths (9-10' lanes show significant safety advantages)
- Improve traffic law enforcement application to focus on systems, not people

» Accessibility

- Survey seniors about their specific transportation challenges.
- Audit key destinations and recommend improvements.
- Infrastructure projects should be separate from traffic to make users of all abilities able to use facilities
- Create better crossings and infrastructure near transit stops
- Look at alternative routes for youth and seniors
- Develop off-road infrastructure where feasible (medians, etc.)
- Ensure adaptive facilities (i.e. curb cuts) on both routes and destinations
- Consider parallel minor street routes for improvement rather than putting all modes on one street
- Improve wheel/roll connection to transit (i.e., concrete landing pads)
- Reduce lane width to improve pedestrians' ability to cross roads
- Fix non-sidewalk accessible sections

» Health

- Organize joint events that take residents between the three cities and to destinations across city lines, such as during Bike Month. These rides could also highlight existing infrastructure. One person noted an example of Slow Toll events (Five commenters, some of whom noted these under Education)
- Push for active transportation to reduce carbon footprint
- Work with Bike Cleveland/Heights Bike Coalition to promote biking
- Organize education activities in parks, community center, etc.
- Establish a bike co-op for those without bikes to use to develop an interest and comfort with cycling
- Organize active mobility challenges with prizes.
- Provide communication on how unhealthy cars are for people

» Education

- Work with local advocacy groups to reach broader audience from voices not solely in local government
- Develop Heights bicycling map (Two commenters)
- Partner with schools to promote after school/weekend rides
- Advocate for updated driver's education on driver responsibility
- Educate community on the benefits of active transportation
- One person noted that seeing other bikers is a top reason for people biking, and that installing infrastructure will promote that
- Use messaging such as "There is no bad weather, just bad clothing"

» Equity

- Audit multi-family housing areas to identify needs with public or private properties.

- Prioritize the areas of need determined by ODOT (Two commenters)
- Install infrastructure such as benches, bike racks, etc.
- Engage the community
- One person noted that since cars are expensive, giving people reasonable alternatives will benefit those at lower income levels
- Create a bike co-op or have bike exchanges, giveaways, and/or repair to minimize barriers to entry. (Three commenters)
- Organize events through churches and synagogues
- Adopt a goal of every youth has access to a bike
- Provide zoning for more density

Participants were provided with a list of example action items from another ATP and could circle those action items as options to be considered for the Heights Regional ATP. The action items that people circled and the number of votes for each are indicated below. The categories do not always match the Heights Regional ATP goal categories since the action items come from a different ATP.

» Health and Safety

- Action Item 1: Implement infrastructure recommendations that improve safety for pedestrians and bicyclists. (One vote)

» Education and Outreach

- Action Item 1: Ensure staff, specifically law enforcement, are trained to positively interact with and educate the public on active transportation elements. (One vote)
- Action Item 2: Provide Daytonians with educational materials on where active transportation facilities are located and how to use them (e.g., trails, bike infrastructure). (Four votes)
- Action Item 3: Continue Safe Routes to School efforts, specifically programming and non-infrastructure countermeasures. (Two votes)
- Action Item 4: Develop programming that encourages Daytonians to use active transportation (e.g., group rides, bike month events). (One vote)

» Alignment and Collaboration

- Action Item 1: Identify funding sources for programs and infrastructure and non-infrastructure projects. (One vote)
- Action Item 2: Collaborate with neighboring jurisdictions, Montgomery County, and ODOT on active transportation initiatives. (One vote)
- Action Item 3: Support multi-jurisdictional collaboration on active transportation issues and complaints (e.g., trail maintenance requests). (Three votes)

» Equity and Access

- Action Item 1: Identify and prioritize areas that have the greatest need for active transportation infrastructure and programs. (Two votes)
- Action Item 2: Prioritize infrastructure projects that connect neighborhood destinations. (Four votes)
- Action Item 3: Ensure neighborhood collaboration and community engagement during all parts of the planning and implementation process. (Three votes)

- Action Item 4: Develop infrastructure projects and non-infrastructure recommendations that make it safer, easier, and more comfortable for children, older adults, and all those with disabilities to travel around Dayton. (Two votes)

» Infrastructure and Services

- Action Item 1: Prioritize specific active transportation infrastructure improvements. (Two votes)
- Action Item 2: Increase and improve existing active transportation amenities (e.g., bicycle parking, benches along trails). (One vote)
- Action Item 3: Continue working with Dayton Public Schools to assist with Safe Routes to School infrastructure projects. (One vote)
- Action Item 4: Establish a collaborative maintenance plan and procedure for active transportation infrastructure and amenities. (One vote)

STEERING COMMITTEE MEETING #3

This section summarizes the third Steering Committee meeting for the Heights Regional ATP, which took place on June 24, 2024, at 10:30am at the Lee Road Library. A total of 15 attendees representing the cities of Cleveland Heights, University Heights, South Euclid, as well as Cuyahoga County, the Greater Cleveland Regional Transit Authority (RTA), and local organizations participated in the meeting.

At the meeting, Burton Planning Services and Toole Design provided an overview of the process to date, presented draft recommendations for programs and policies, and explained recommended facility improvement types for review. Steering Committee members were provided maps of the recommended active transportation network and improvements for their review during the presentation and to use for the group activity.

The Steering Committee Meeting also included two activities designed to allow participants to share their feedback on the proposed active transportation network and options for bicycle boulevard treatments. For a first activity, attendees were split into three small groups divided by jurisdiction to review the recommended active transportation network and asked to identify their top three projects of highest priority. For the second activity, attendees were provided a worksheet with images of possible bicycle boulevard treatments, including (list 2-3 examples of what was on the sheet), and asked to share their preferences on treatment types. A summary of participant comments and recommendations are listed below.

PROGRAM AND POLICY REVIEW

Highlights from the discussion of the program and policy review included items on wayfinding, bicycle parking, policies that may discourage bicycling, and sidewalk riding. Regarding wayfinding, the group discussed that Neighborhood Greenway wayfinding will be piloted along several corridors, and one Steering Committee member asked if “yield to pedestrians/state law” signage can be incorporated into wayfinding. One person asked if bicycle parking is included in recommendations, and the consultant team confirmed that it is included. Another question was if policies that hinder biking/walking have been reviewed and recommended to be removed, and the consultant team provided the example of University Heights removing bicycle license requirements after a policy review. Relatedly, someone asked if people are allowed to ride bicycles on the sidewalk. The discussion amongst the group was that this while all three cities prohibit biking on sidewalks except by youth, this is rarely enforced.

PROPOSED NETWORK REVIEW

During the review of the proposed network, there was agreement from the attendees about including treatments specific to offset intersections, as people noted that motorists have not seen pedestrians crossing at these locations before. One question was whether specific treatments are associated with individual intersection recommendations, and the consultant team responded that intersections are identified with a toolkit of countermeasures provided in the plan. Additionally, RTA requested to be included in native planting discussions so they can ensure that sightlines are maintained for bus stops.

PROJECT PRIORITIZATION ACTIVITY

The attendees were divided into three small groups based on jurisdiction. Each group was asked to identify their top three priority projects from the recommended active transportation network list. Results by jurisdiction are noted below, with some jurisdictions identifying additional projects of interest:

CLEVELAND HEIGHTS

1. Lee Road: separated bicycle lane (Fairfax Elementary School to Cain Park)
2. The bicycle boulevard network overall, including improving the current greenways
3. Euclid Heights Boulevard: shared use path (Cedar Road to Taylor Road)

SOUTH EUCLID

1. Bicycle boulevards
 - a. Route along Miramar Boulevard, Felton Road, Avondale Road, and Quarry Drive (Monticello Boulevard to southern City limit)
 - b. Bluestone Road (Noble Road to shared use path entrance)
2. Noble Road: separated bicycle lanes (northern City limit to Mayfield Road)
3. South Belvoir Boulevard: buffered bicycle lanes (Bluestone Road to southern City limit). A bicycle boulevard treatment with sharrows is currently scheduled for installation but is considered an interim design.
4. Warrensville Center Road: separated bicycle lanes (Mayfield Road to Cedar Road)

UNIVERSITY HEIGHTS

1. Washington Boulevard: shared use path (Cain Park to Fenwick Park)
2. Warrensville Center Road: separated bicycle lanes (within City limits, planned for 2027)
3. Washington Boulevard: shared use path (extension to John Carroll University)
4. Silsby Road bicycle boulevard (within City limits)

BICYCLE BOULEVARD ACTIVITY RESULTS

Thirteen (13) attendees completed a bicycle boulevard activity worksheet that asked them to rate their preferences across seven possible treatments along bicycle boulevards on a scale of 1 (Strong Dislike) to 5 (Strong Preference). **Figure 1** illustrates the responses for each treatment type across all respondents, and **Table 1** provides average ratings by city or agency and the overall average. Raised crossings received the highest average score (4.3), followed by curb extensions (4.1), bicycle boulevard signs and markings (4.0) and speed humps and tables (4.0). The remaining three treatments had an average score between 3.3 and 3.9, indicating a somewhat positive preference.

Participants were asked to note the city or agency that they represent. The breakdown in respondents was as follows:

- Six (6) from Cleveland Heights
- Four (4) from University Heights
- Two (2) from South Euclid
- One (1) from the Greater Cleveland Regional Transit Authority (GCRTA)

Given that the survey had a relatively small sample size, it is difficult to assign high significance to the differences in opinions between cities. With the data that is available, it appears that each city’s sentiments roughly match those of the overall average. Notable exceptions include that South Euclid stakeholders have a stronger preference for bicycle boulevard signs and markings than the other participants as well as a stronger dislike of one-lane pinch points.

Participants in stakeholder and public engagement have regularly emphasized safety as an important concern for active transportation in the Heights Regional ATP area. The results of this exercise should not preclude implementing a bicycle boulevard treatment that would improve safety, but rather is intended to help jurisdictions choose between treatments that may have similar safety benefits.

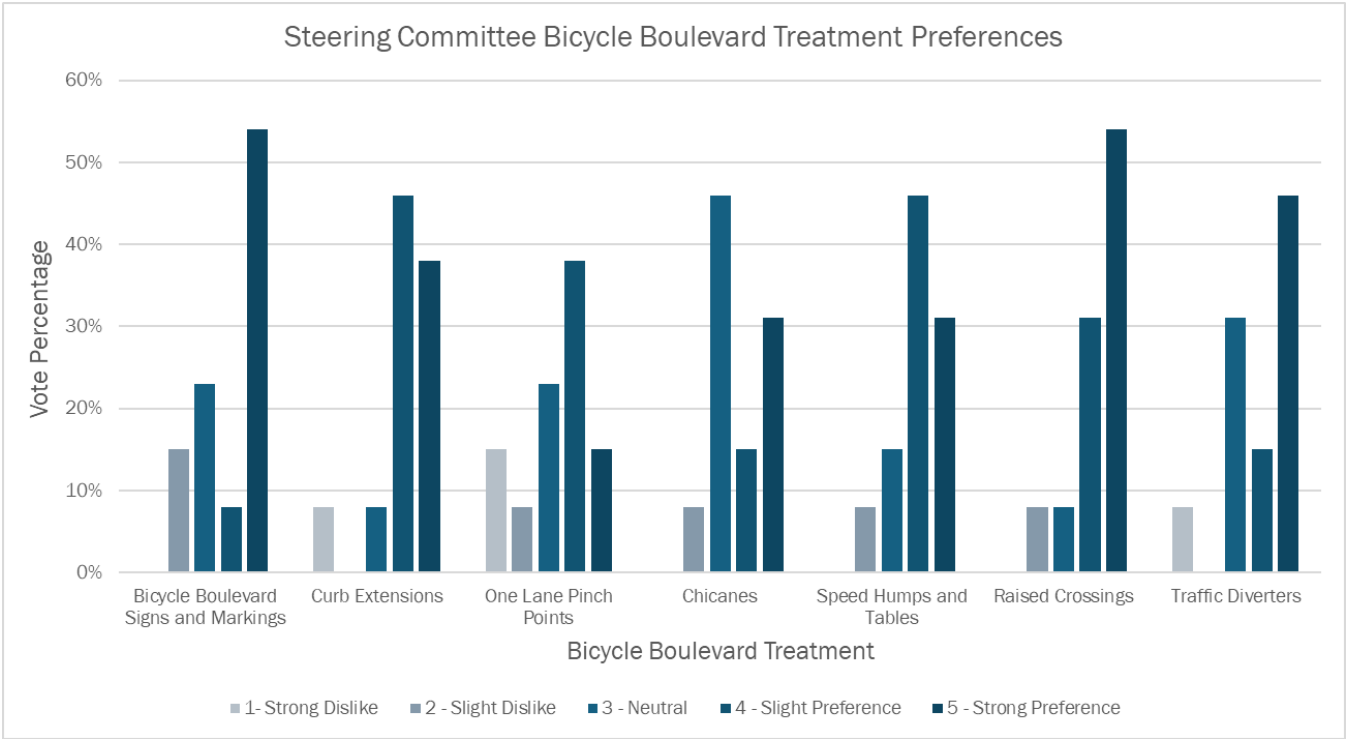


Figure 1: Bicycle Boulevard Treatment Preferences for all Respondents

Table 1: Average Improvement Ratings Grouped by City or Agency

<i>Treatment Type</i>	<i>City or Agency</i>				<i>Overall Average</i>
	<i>Cleveland Heights (6 responses)</i>	<i>University Heights (4 responses)</i>	<i>South Euclid (2 responses)</i>	<i>GCRTA (1 response)</i>	
Bicycle Boulevard Signs and Markings	3.7	4.5	5.0	2.0	4.0
Curb Extensions	3.8	4.5	3.5	5.0	4.1
One Lane Pinch Points	3.7	3.0	2.5	4.0	3.3
Chicanes	4.0	3.5	3.5	4.5	3.7
Speed Humps and Tables	4.2	3.5	4.5	4.0	4.0
Raised Crossings	4.3	4.0	4.5	5.0	4.3
Traffic Diverters	4.2	4.3	3.0	3.0	3.9

PUBLIC INPUT #1: WEB MAP AND SURVEY

Understanding the attitudes, activities, and desires of people spending time in Cleveland Heights, South Euclid, and University Heights is critical to the development of a successful Active Transportation Plan for the region. To gather this information, an online survey and interactive web map were created to collect public input about walking, biking, and rolling in the Heights Region. The survey and web map were available online from December 4, 2023 through April 1, 2024, and while they were available separately the survey automatically directed people to the web map upon completion. The survey received 505 responses (492 completed surveys and 13 partially completed surveys) and the web map received 234 individual comments.

The following sections summarize the results of the survey and web map responses, including the demographics of survey respondents, current transportation habits, changes that would encourage more walking, biking, or rolling, and comments on existing or potential new active transportation facilities.

SUMMARY OF SURVEY RESULTS

As noted above there were 505 responses to the survey, with 492 completed and 13 partially completed. About half of the survey respondents live within the Cleveland Heights community (Figure 2). The rest of respondents were distributed between South Euclid (26 percent), University Heights (20 percent), and other, such as Beachwood, Cleveland-Shaker Square, Mayfield Heights, Richmond Heights, Solon, and Shaker Heights (3 percent).

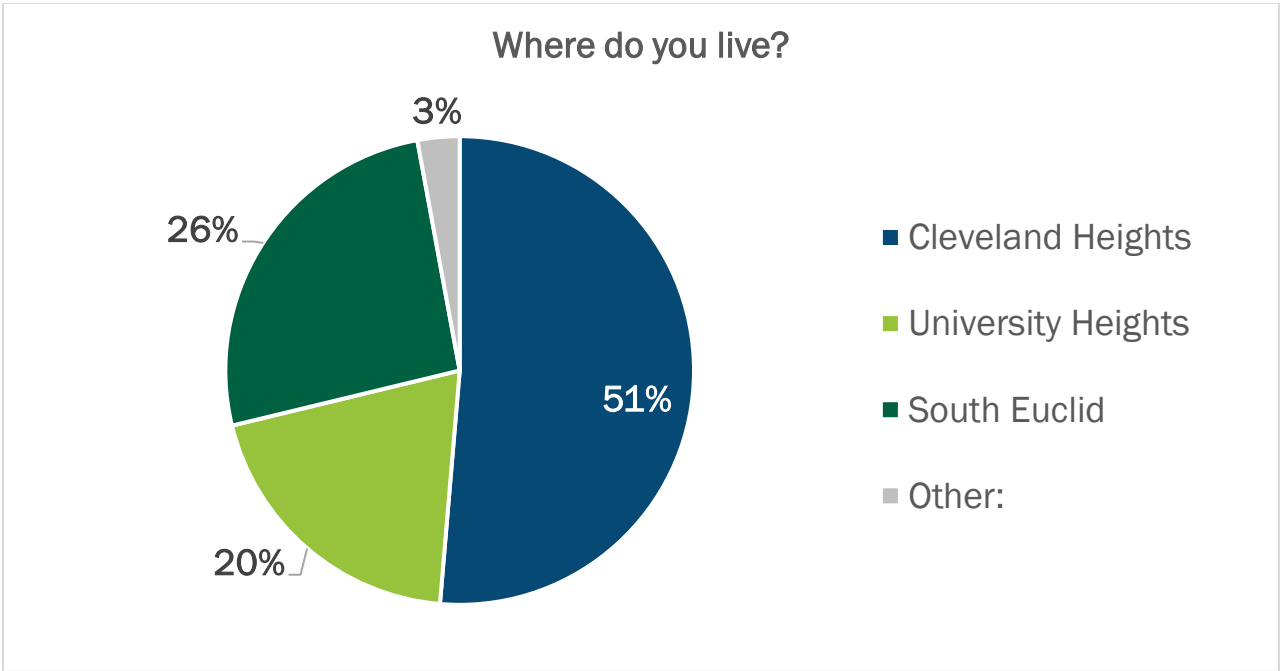


Figure 2: Communities where respondents live (n = 483)

WHO WE HEARD FROM

The majority of respondents were white (81 percent). The other responses were distributed between Black or African American (6 percent), Asian (3 percent), Native/Indigenous (1 percent) and 11 percent of respondents preferred not to answer or preferred to self-describe (Figure 3).

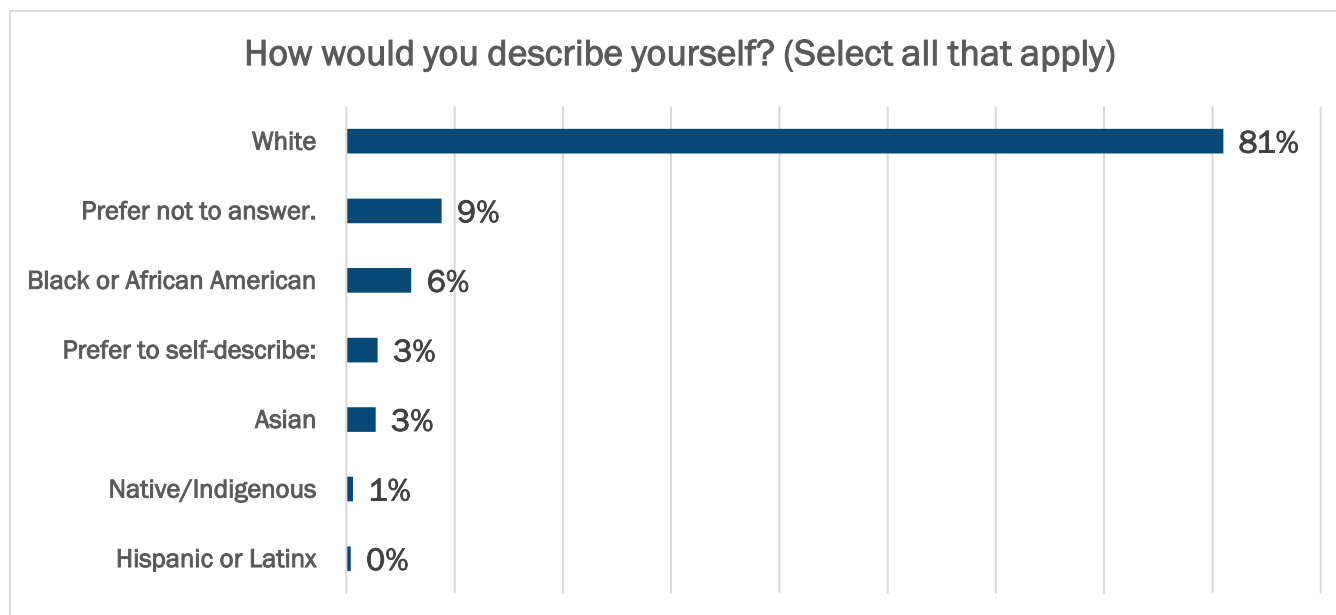


Figure 3: Race and ethnicity of respondents (n = 493)

Almost half (49 percent) of the respondents were between the age of 35-64 years old. 33 percent of respondents ranged from retirement age and above, 65-84 years, leaving 17 percent as young adults 17-34 years old and one percent as those over 85 (**Figure 4**).

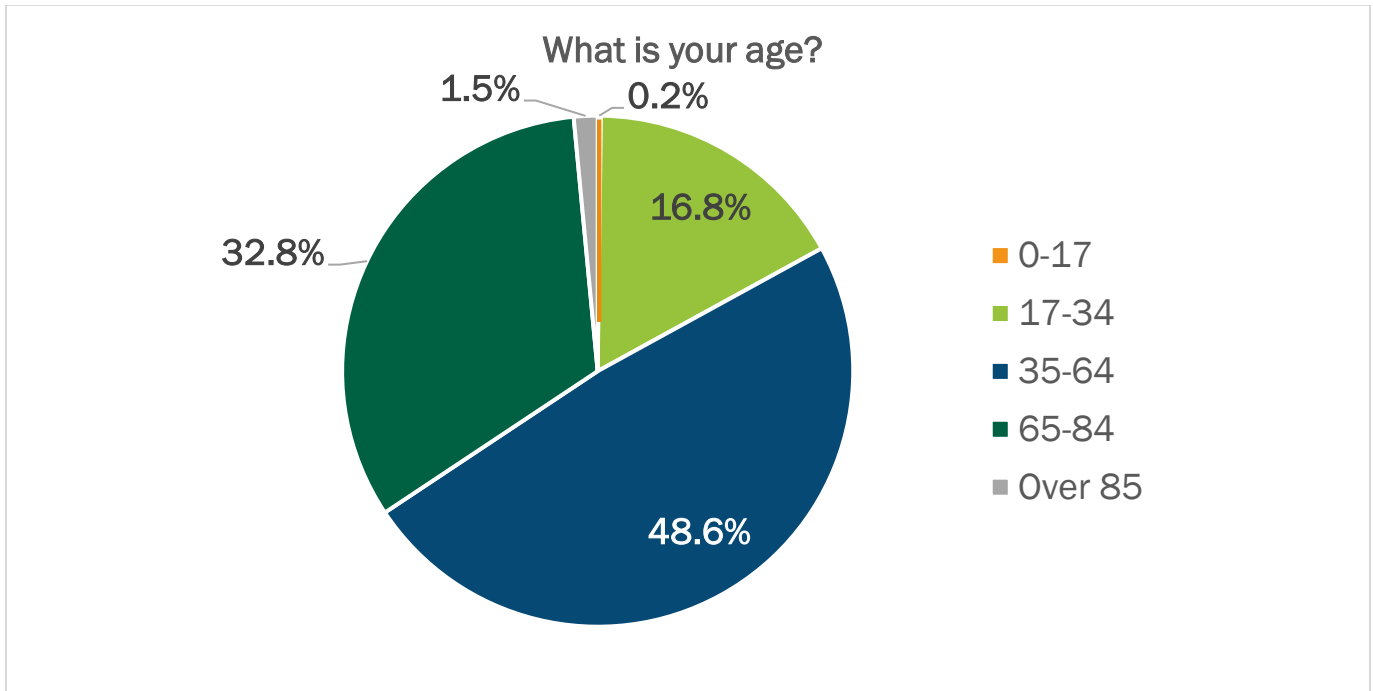


Figure 4: Age of respondents (n=481)

Over 60 percent of respondents were female, with 33 percent identifying as male. The rest of the distribution was between those who identify as transgender, nonconforming, and preferring not to answer (**Figure 5**).

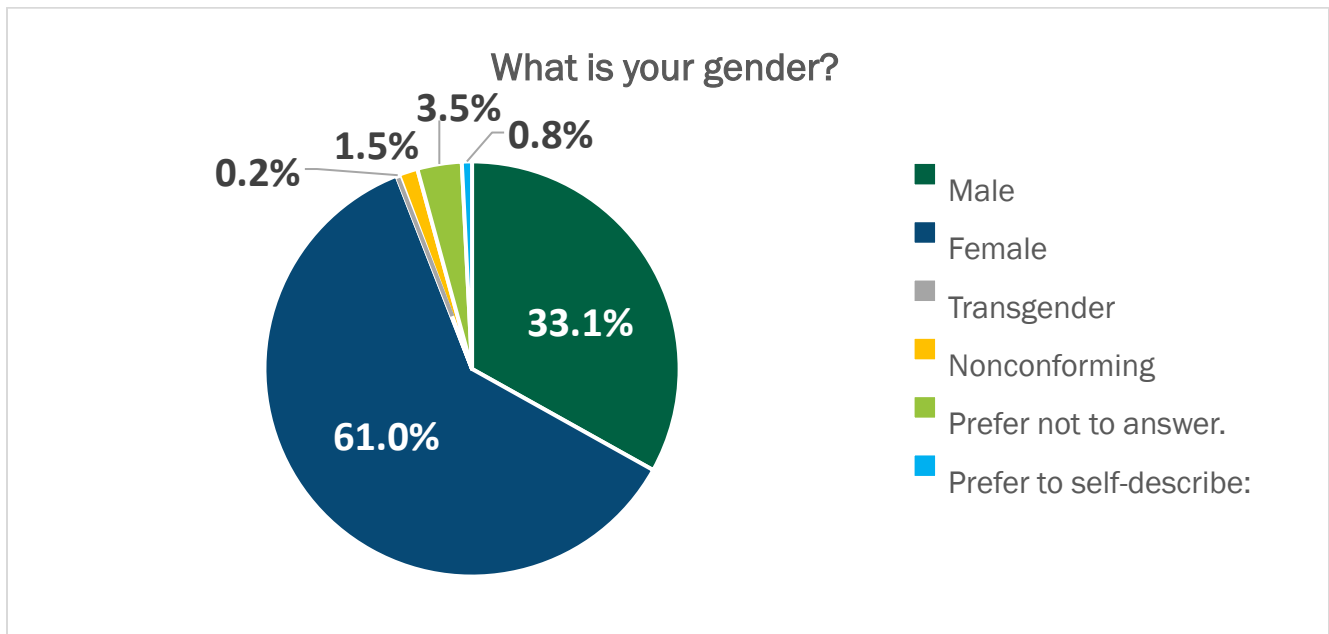


Figure 5: Gender of respondents (n=486)

The majority, 86 percent, of respondents indicated no physical limitations prevent them from utilizing active transportation modes. The remaining distribution was between those who do have physical limitations, such

as use a wheelchair, walker, or other mobility device (2 percent), sensory limitations in hearing (4 percent) and vision (2 percent), and other (6 percent), such as, balance issues, arthritis, respiratory complications, fear of falling, and cognitive complications. (**Figure 6**)

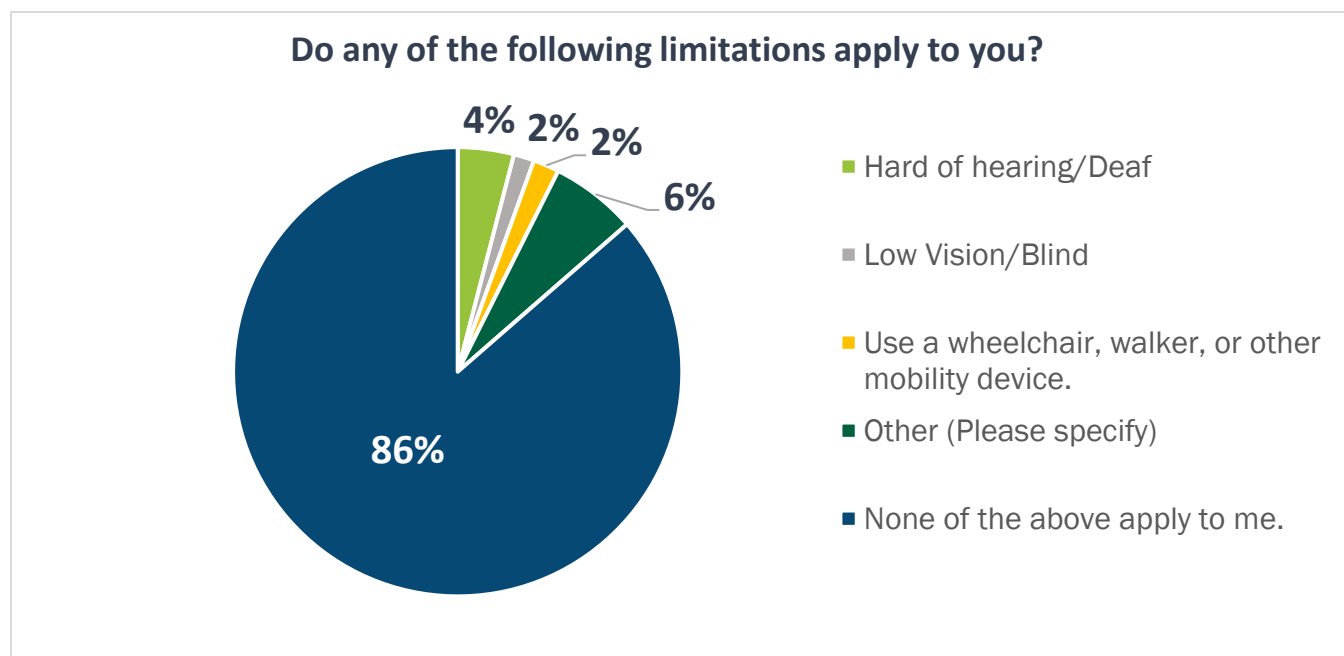


Figure 6: Physical limitations of respondents (n = 471)

Over 40 percent of people stated they were interested in biking, but don't feel comfortable biking most places. There was about an even divide between those who felt no interest in biking at all (20 percent) and people who do bike, but wish it was more comfortable (23 percent). Respondents who felt comfortable traveling most places, had the lowest percentage at 13 percent, indicating that majority of people do not currently feel comfortable biking many places (**Figure 7**).

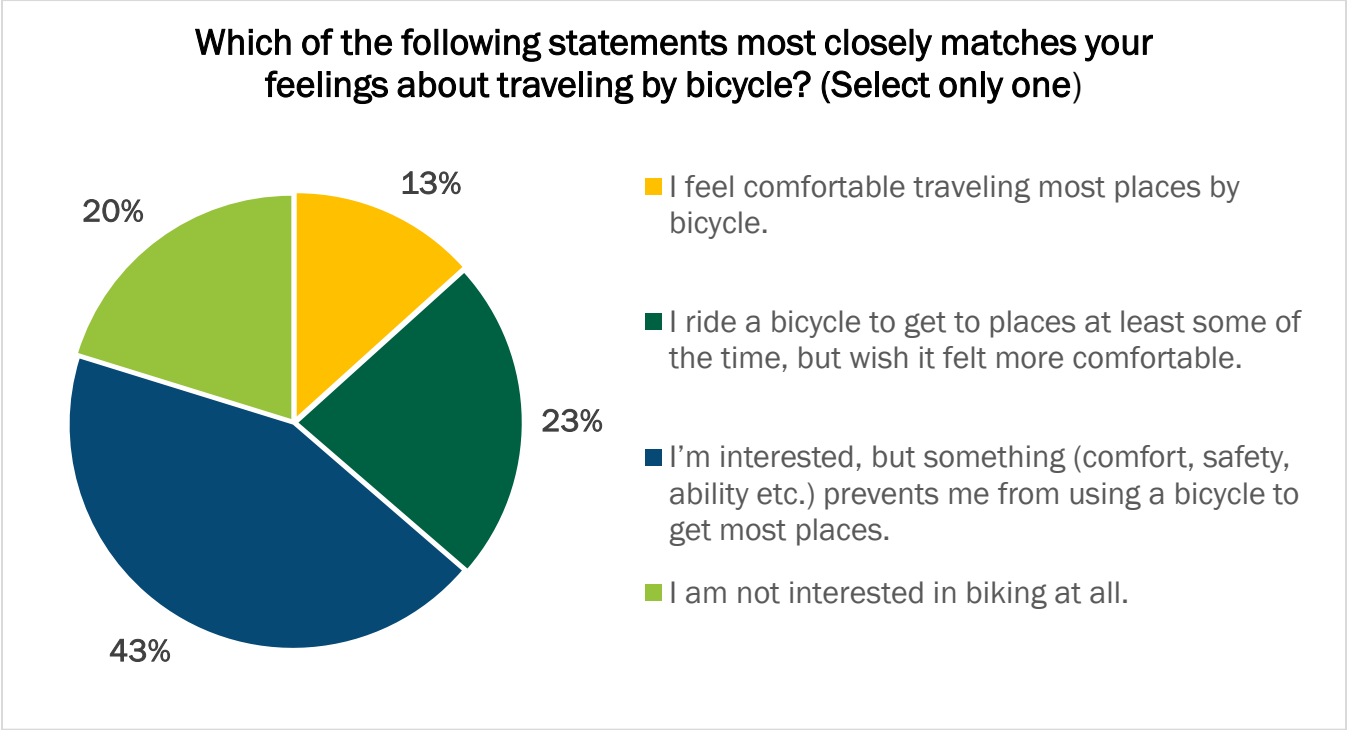


Figure 7: Type of bicyclists (n=478)

Respondents were asked multiple questions about how they currently get around, what are the challenges to them getting around by walking, biking, and rolling, and what would encourage them to walk, bike, or roll more.

When asked “How do you normally get around your community?,” respondents were allowed to select all modes of transportation that applied. Driving a personal vehicle was the dominant mode of transportation with 92 percent of respondents saying they drive to get around their community. Walking or rolling was the second highest option at 68 percent followed by biking (39 percent), and 14 percent use public transit. Ride sharing (6 percent) and carpooling (10 percent) are less often used within the community (**Figure 8**).

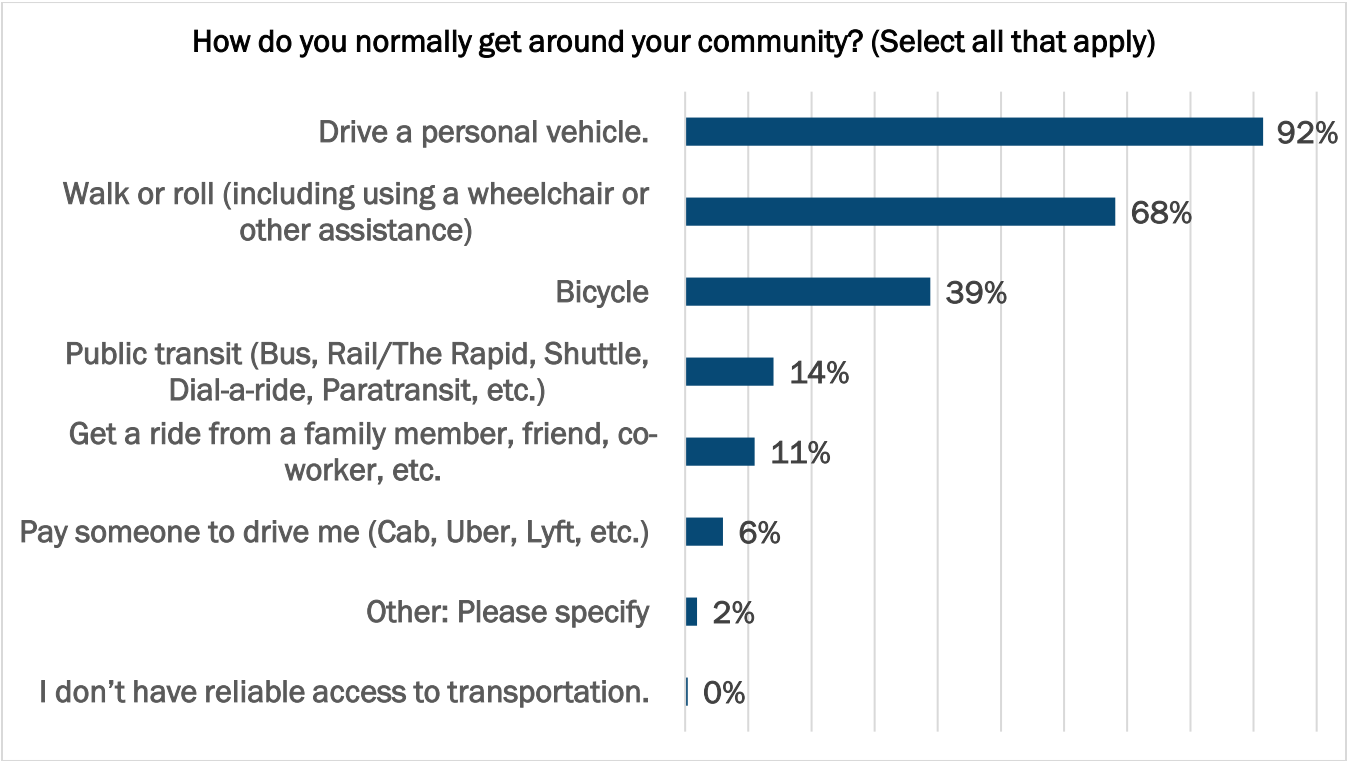


Figure 8: How respondents get around (n=1142)

ACTIVE TRANSPORTATION RESPONSES

Although driving was the most commonly used form of transportation, walking or rolling and biking were still significant transportation options in the community. 90 percent emphasized that exercise and recreation is the main reason that they walk or bike, 50 percent claimed to shop or run errands, 46 percent responded they walk or bike because its environmentally friendly, and 30 percent stated to visit family and friends. Nearly a quarter of respondents walk or bike for commuting purposes (22 percent). About 17 percent said that its more affordable than driving, and 10 percent walk or bike to get to a bus stop. Five percent do not walk or bike and four percent do not have a car. Reasons that were listed under Other (6 percent) included they bike for fun, to connect with the community, and to walk their dog (Figure 9).

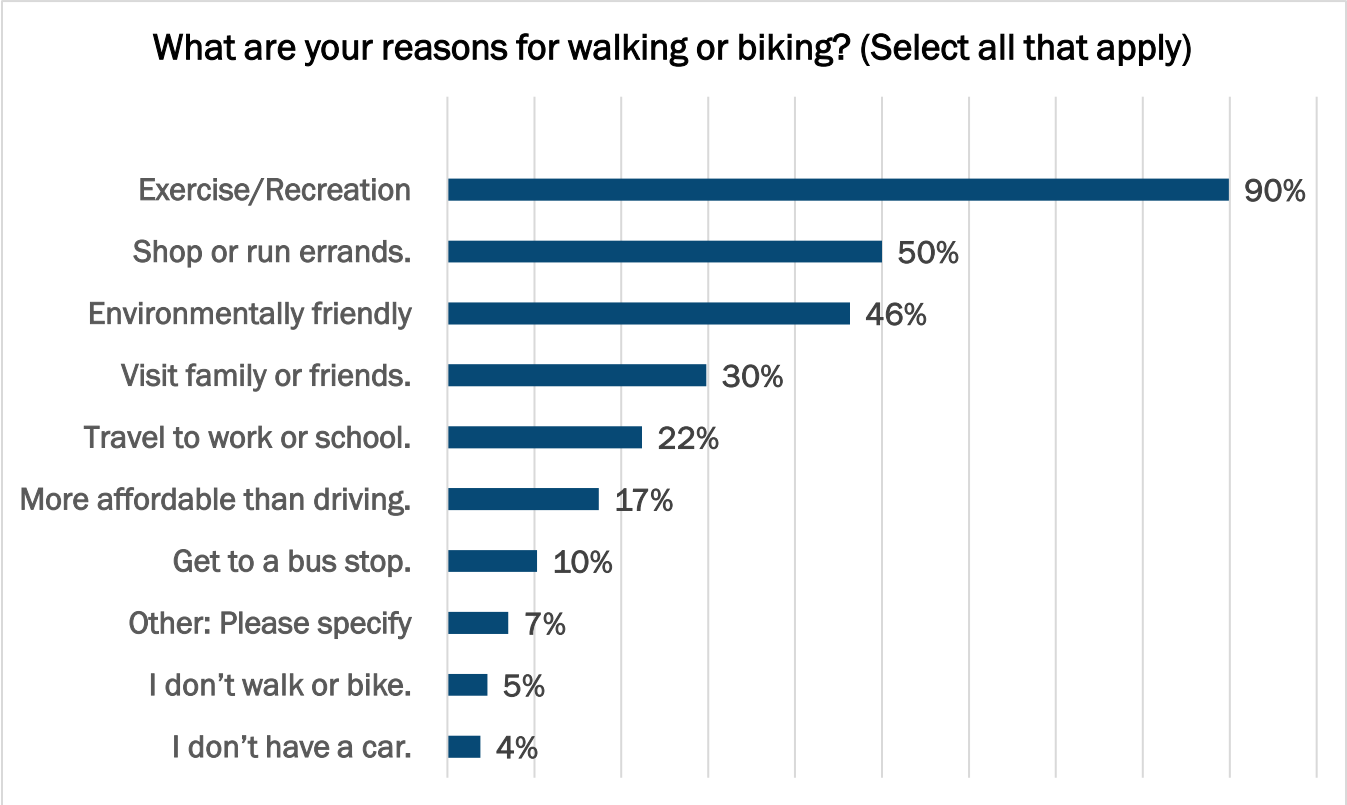


Figure 9: Reason for walking or biking



Many people claimed to not feel safe riding their bike (**Figure 7**). **Figure 10** displays the reasons why people feel unsafe both walking and biking. 56 percent of people feel that traffic is too fast or doesn't stop, 50 percent emphasized that intersections feel dangerous, 47 percent said that the maintenance of streets, sidewalks, or trails is inadequate, and 47 percent responded that there is a lack of facilities to safely walk or bike, such as sidewalks, bike lanes, or trails.

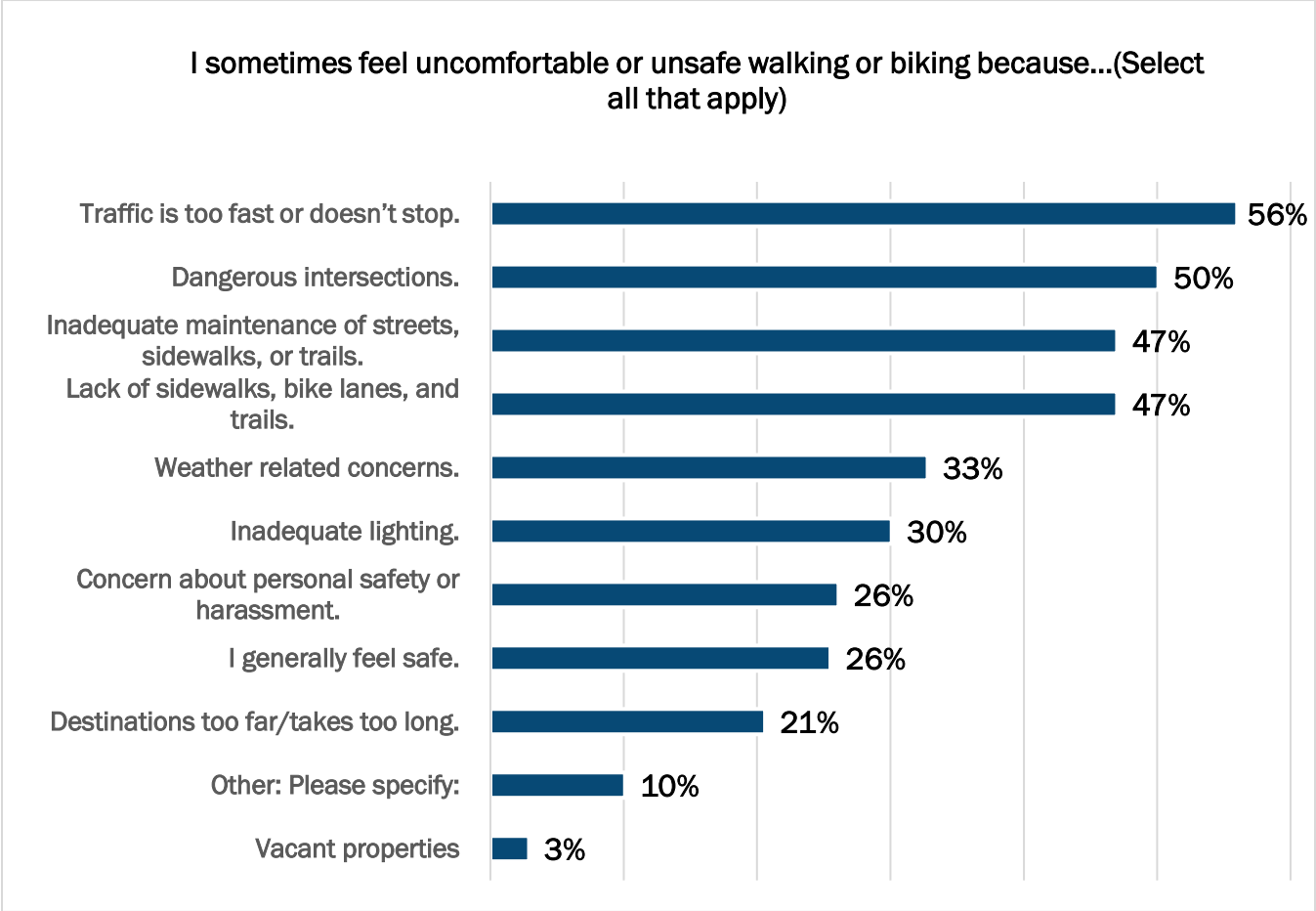


Figure 10: Reasons for feeling uncomfortable walking and biking (n=1702)

There is a strong correlation between why people feel unsafe (**Figure 10**) and what would encourage them to walk, roll and bike more. The top action that would encourage more walking and rolling was better maintenance of sidewalks and trails (55 percent). More separation between vehicles and people walking followed closed with 48 percent. 39 percent responded new sidewalks and trails in the community and better lighting (35 percent) would encourage them to walk or roll more (**Figure 11**). There is a strong indication that making sidewalks and trails safer will increase the amount that people walk or roll.

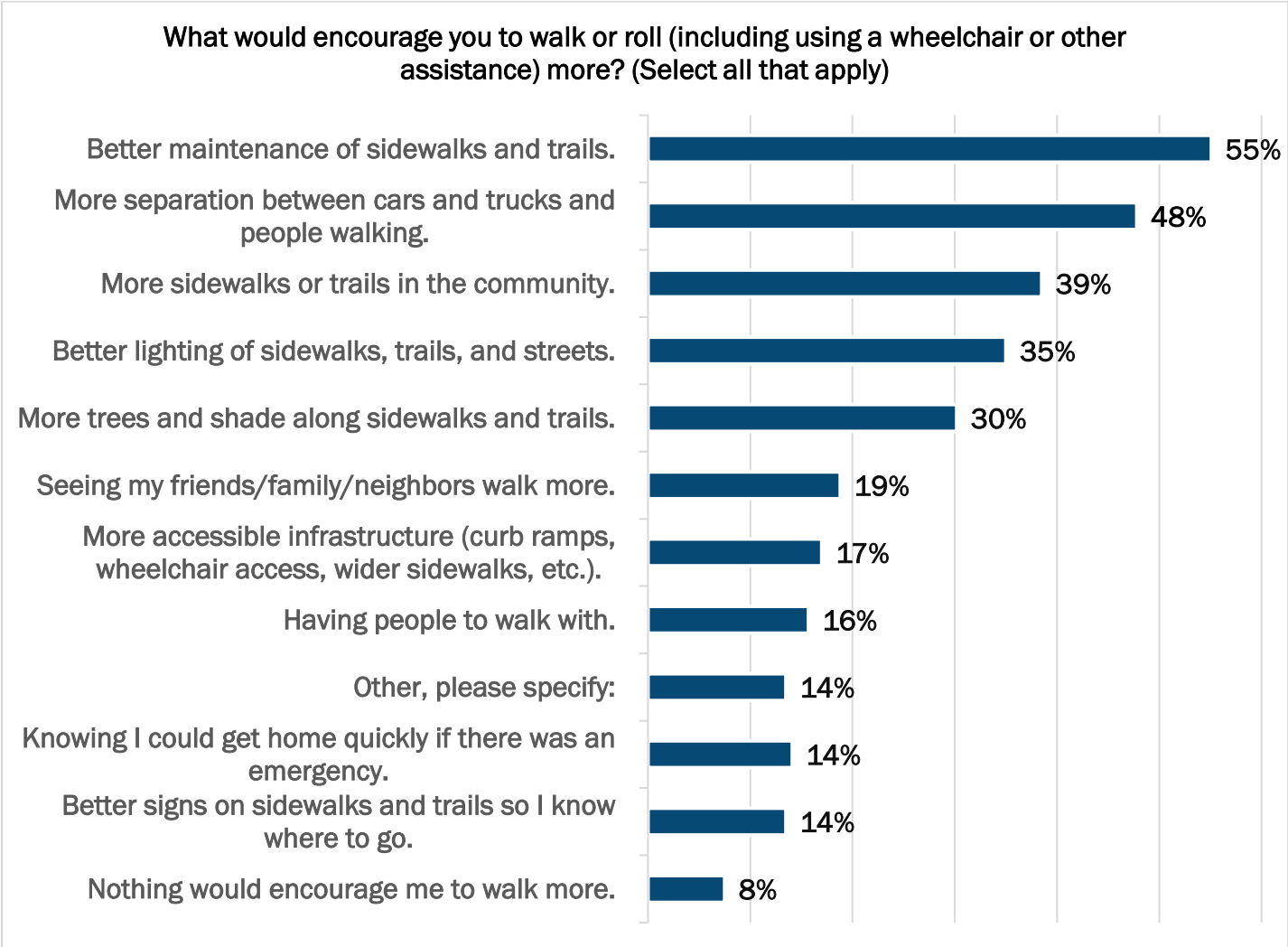


Figure 11: Improvements that would encourage residents to walk more (n=1481)

Respondents specified that more bike lanes or trails (61 percent) and separation from traffic (60 percent) would encourage them to bike more. This emphasis on improving routes and connections, is also evident in 45 percent of community members wanting better maintained bike lanes and streets. Respondents had similar motivations between what will encourage them to walk or roll more and bike more (Figure 12).

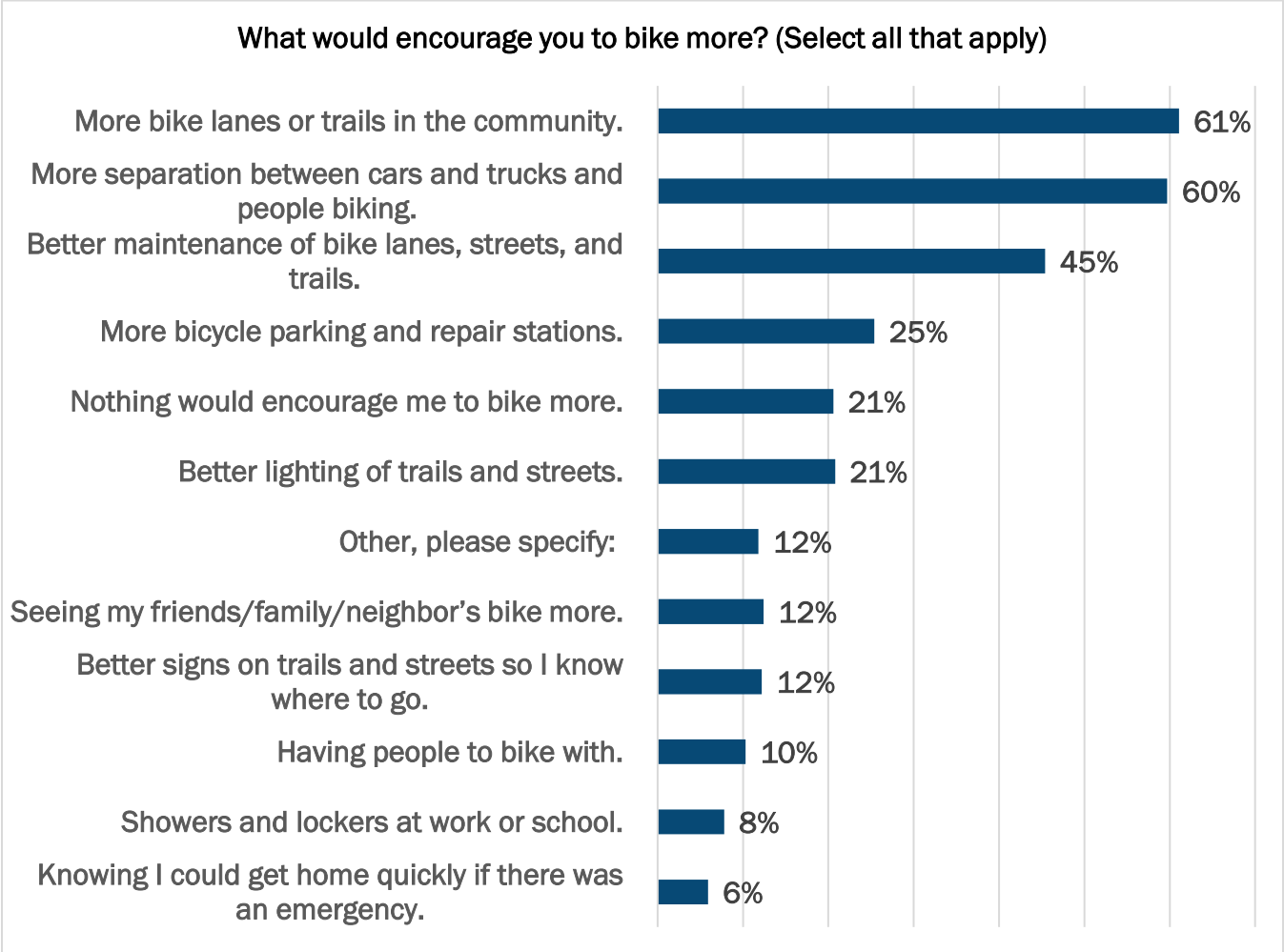


Figure 12: Improvements that would encourage residents to bike more (n=1397)

OPEN-ENDED RESPONSES

There was also an open-ended question asking, ‘Is there anything else you would like to share with us about walking and biking in your community?’ Over 225 people responded with a variety of answers. Some overarching themes included stressing the importance of bike lanes being protected, and it being the key to getting more people to bike. Other answers included building more bike infrastructure, improving the poor conditions of roads, increasing connections and accessibility, and more education on bike safety for adults and children would increase biking. There were only a few responses that discouraged the idea of adding bike lanes, claiming it an inconvenience to driving. For walking, many said that better maintenance of sidewalks, more shade during the summer months, increasing police visibility, and control of dogs around the neighborhood would increase walking.

Overall, there was excitement for the Active Transportation Plan and projects to be implemented. In general, people wanted to see more trails, walking and biking paths and believe it's a winning situation for their communities.

WEB MAP SUMMARY

The Heights ATP web map was open from December 1, 2023 through February 5, 2024 and received a total of 234 comments, of which 184 were points and 50 were lines. The number of comments by the three cities in the plan area were as follows, with some line comments counting towards more than one city when they crossed city boundaries:

- » 188 in Cleveland Heights
- » 35 in South Euclid
- » 25 in University Heights

The following sections summarize respondent's notes on high-comment corridors, followed by summaries of comment locations grouped by themes.

HIGH-COMMENT CORRIDOR HIGHLIGHTS

Lee Road

There were 35 comments on Lee Road, most of which were within the Cedar-Lee business district. Many commenters thought that Lee Road is dangerous for both pedestrians and bicyclists, with some expressing dissatisfaction with previous curb redesigns. Survey participants also commented that existing bicycle lanes south of Corydon Road are unsafe, narrow and dangerous. Respondents suggested measures such as removing on-street parking to accommodate the addition of protected bicycle lanes along Lee Road, pedestrian facility enhancement on the corridor, and interest in traffic calming measures like speed tables or chicanes to slow traffic flow. Popular destinations along this corridor include playground near the Scarborough Road/Lee Road intersection and the library.

Cedar Road

There were 25 comments on Cedar Road, most of which were west of Lee Road including nine within the Cedar-Fairmount business district. Multiple respondents noted that the road has narrow sidewalks near the road, and that there are occasional obstructions such as utility poles. Several community members also expressed specific concerns about vehicle speeds and safe crossings for pedestrians and bicyclists at the intersection with Euclid Heights Boulevard. One commenter suggested there should be more crosswalks in the Cedar-Fairmount business district, and another suggested narrowing the street and widening the sidewalks to support pedestrian activity and businesses there. Some commenters proposed protected bicycle lanes with physical barriers between car traffic and bicycle traffic to improve safety.

Euclid Heights Boulevard

There were 20 comments on Euclid Heights Boulevard. Multiple commenters mentioned difficult crossing the road as pedestrians either due to missing crosswalks or a lack of infrastructure such as traffic lights to improve yielding. People also reported pedestrian and bicyclist safety concerns regarding the intersection of

Cedar Road and Euclid Heights Boulevard, as noted for Cedar Road above. Respondents proposed bicycle facilities either in the median or by removing a vehicle lane in each direction.

Taylor Road

There were seven comments on Taylor Road, several of which were supportive of previously proposed bicycle facilities on the corridor or suggest adding bicycle facilities without reference to previous planning. One commenter noted that the area near Cain Park is home to a large Jewish Orthodox population that walks on the Sabbath and other holidays.

COMMENTS BY THEME

This section summarizes comments by themes across the three cities, including comments that may have been summarized on high-comment corridors above.

Existing Bicycle Facilities

Various comments discussed the issue of maintenance, safety, connectivity, accessibility, and intersection improvements. Commenters mentioned that:

- Debris such as leaves and branches accumulate in bicycle lanes, making them unsafe or unusable.
 - Locations: North Park Road, Green Road, Cedar Glen Road, Severance Circle, Edgehill Road, Lee Road, Euclid Heights Blvd, Warrensville Center Road, Overlook Road.
- There is a need for protected bicycle lanes instead of just painted lanes.
 - Locations: North Park Road, Green Road, Severance Road, Lee Road
- Cars frequently park in bicycle lanes, which is a safety issue.
 - Locations: North Park Road, Lee Road, Warrensville Center Road
- Speeding cars pose dangers to cyclists, and traffic calming measures are needed.
 - Locations: North Park Road, Lee Road, Silsby Road, Overlook Road, and Cedar Road.
- Many intersections are problematic for cyclists due to inadequate infrastructure or confusing layouts.
 - Locations: Cedar and Cottage Grove intersection, Euclid Heights and Coventry intersection, Euclid Heights Boulevard and Cedar Road, Scarborough Road and Coventry Road intersection, Cedar Road and Fairmount intersection, and Cedar Road, Harcourt Road, Cedar Glen Road, and Euclid Heights Boulevard intersection.
- Improving connectivity between existing bicycle routes and key destinations is essential. Survey participants also expressed concerns about the lack of sidewalks.
 - Locations: Green Road, Corydon Road, Stratford Road, Monmouth Road and Ashton Road intersection, Cedar Road and Cottage Grove Road intersection, Monticello Road and Lee Road intersection, Coventry Road, and Washington Boulevard.
- Access to bicycle facilities should be inclusive, considering the needs of all users.
 - Locations: Monticello Road and Noble Road intersection
- Bicycle lanes can be narrow or poorly maintained, discouraging less experienced cyclists from using them.
 - Locations: Euclid Heights Boulevard, Lee Road, Overlook Road, Warrensville Center Road

Existing Pedestrian Facilities

Several comments regarding the existing pedestrian facilities were highlighted by survey participants. These included:

- Comments about pedestrian safety due to high traffic and speeding vehicles.
 - Locations: Cedar Road and Warrensville Center Road intersection, Lee Road, Wrenford Road, Cedar Road, Lee Road and Tullamore Road intersection, Lee Road and Kensington Road, intersection, Cedar Road and Overlook Road Intersection, Coventry Road and within the Coventry commercial district.
- Suggestions for improved pedestrian infrastructure, including lighting, signal synchronization, and pedestrian crossings.
 - Locations: St. James Road and Fairmount Road intersection, Lee Road and Tullamore Road intersection, Lee Road, Mayfield Road and Green Road intersection, Cedar Road and Warrensville Center Road intersection, Euclid Heights Boulevard, and Coventry Road, Euclid Heights Boulevard and Edgehill intersection, Lee Road and Corydon Road intersection, Coventry Road.
- Requests for traffic calming measures to reduce speeding of vehicles.
 - Locations: Cedar Road and Warrensville Center Road intersection, Coventry Road and Hampshire intersection, and Lee Road.
- Concerns about inadequate or unsafe pedestrian crossings
 - Locations: Lee Road and Tullamore Road intersection, Coventry commercial district, Mayfield Road, Mayfield Road (Between Coventry Road and Kenilworth Road), Monticello Road and Lee Road intersection, and Euclid Heights Boulevard (Entrance to the Marc's parking lot)
- Concerns about the presence of obstacles making pedestrian infrastructure inaccessible, including debris, construction, and geese.
 - Locations: Lee Road, Oak Road
- A respondent expressed appreciation for a pedestrian-only-cut-through that goes through Queenston Road, Kingston Road, Princeton Road and Canterbury Road.

New Bicycle Facilities

Community members requested new bicycle lanes and supporting infrastructure. Additionally, comments touched on the need for connectivity between existing bicycle routes and key destinations, such as schools, parks and commercial areas. Commenters said that there is a need for introducing traffic calming measures in areas with high vehicle speeding, and improvements to confusing intersections.

A stakeholder requested that biking through Lakeview Cemetery should be allowed to improve connectivity. Another stakeholder proposed a multi-use path through a section of a development site and a section of Euclid Heights Boulevard for connectivity. Other commenters indicated the need for bicycle routes on Lee Road. Some commenters expressed interest in converting parts of lower-traffic roadways to allow for easier bicycle and pedestrian access.

New Pedestrian Facilities

Survey participants discussed the need to enhance pedestrian safety, improve connectivity and create more pedestrian-friendly environments in the specified areas. These include:

- Intersection improvements such as traffic calming devices (including speed tables, raised crossings, or gateway features), crosswalk enhancements, or traffic lights to improve pedestrian safety.
 - Locations: Lee Road and Ormond Road intersection, Woodridge Road and Euclid Heights Blvd intersection, Cedar Road and Lee Road intersection, Lee Rd (in front of the Library), Lee Road (near the business district), Mayfield Road, Euclid Heights Blvd, Fairmount Boulevard, and Cedar Fairmount district (potentially at Lennox Road).
- Comments regarding bicycle lane connectivity to parks.
 - Locations: Between Green Road bicycle lane and Euclid Creek Metropark, between Shaker Square/Larchmere and Cedar Hill areas via a bridge across Doan Brook, along North Park Boulevard (between MLK and Coventry Road)
- Implementation of stop signs, crosswalks and speed control measures.
 - Locations: South Overlook Road and Cecil Road, Delaware Road and Cecil Road, Overlook Road, Mayfield Road, and Cadwell and Hampshire intersections.
- Seating areas at the Monticello Boulevard/Taylor Road intersection for people waiting for buses toward Severance Circle's businesses and City Hall.

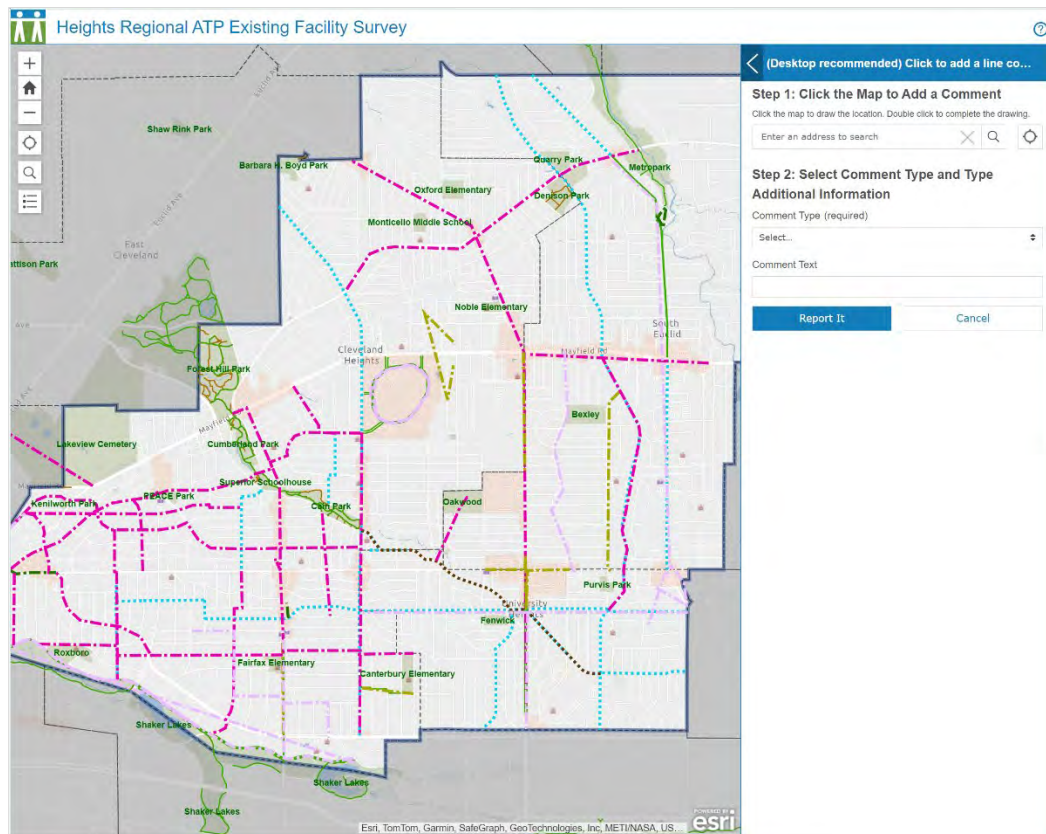


Figure 13: Image of Heights ATP Web Map with Public Comments (Lines)

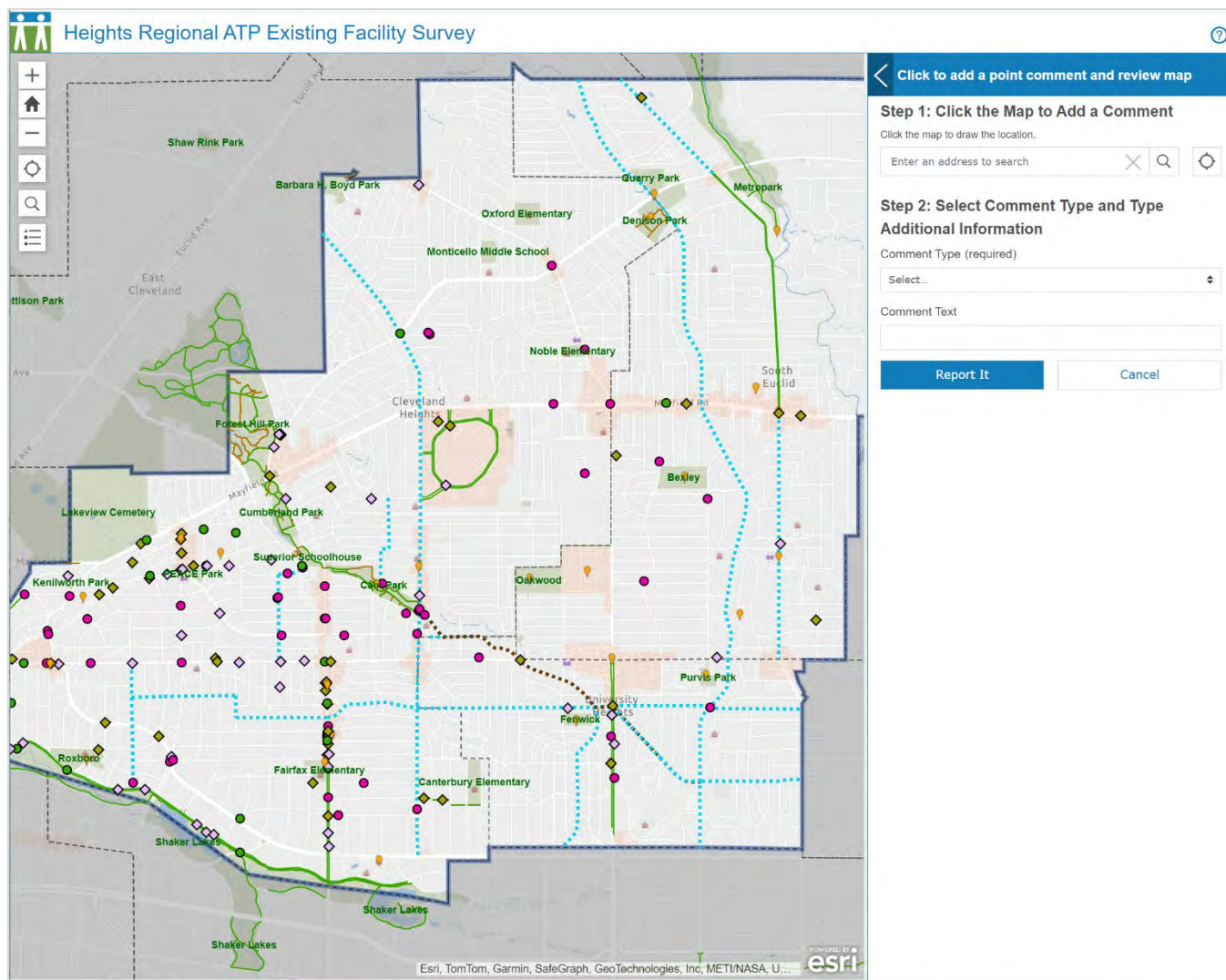


Figure 14: Image of Heights ATP Web Map with Public Comments (Points)

Popular Destinations

Participants expressed concerns and provided suggestions regarding various destinations and routes across the area. These include:

- Library and Notre Dame College: Requests for safer pedestrian access to the County Public Library.
- Euclid Creek Metropark: Cyclists and walkers frequent this location, emphasizing the need for safer biking routes and pedestrian crossings.
- University Circle, Lee Road, Cedar Road, Fairmount Road, Coventry Road: Stakeholders seek improvements for safer biking connections to these popular corridors.
- Walmart Superstore and Cedar Center Retail: Suggestions for better pedestrian and cyclist infrastructure near these major retail destinations.

- Memorial Junior High and Brush High School: Concerns about safety on routes for students walking or biking to these schools in South Euclid.
- Ruffing Montessori School: Parents express the need for safer biking routes when dropping off their children at Ruffing Montessori.
- Outdoor Performing Arts Venue: Requests for improved pedestrian and cyclist safety around this major summer entertainment destination, along with tennis courts and a skateboard park.
- Parks: Various parks mentioned, including Nature Reserve Park, Quarry Park/Dog Park, Denison Park, and Walter Stinson Park, indicating a desire for enhanced accessibility and safety for pedestrians and cyclists.
- Intersection Challenges: Specific intersections noted for their dangers to pedestrians and cyclists, such as Warrensville Center Rd and Hillbrook, and the issue of traffic light sensors not detecting bicycles.
- General Concerns: Observations of inadequate transportation options, poorly maintained sidewalks during winter, and unfavorable traffic patterns for bicyclists in certain areas.

KEY TAKEAWAYS

Overall, survey responses suggest there is an interest in walking, rolling, biking, and other active transportation modes, however, there are factors that reduce interest or prevent people from using active transportation such as lack of accessibility, safety, and feeling uncomfortable. There is a clear connection between why people feel unsafe and factors that would encourage them to walk, roll and bike more. People noted that they feel uncomfortable because of traffic that is fast or doesn't stop, dangerous intersections, inadequate maintenance, and a lack of facilities. Respondents suggested that improvements to encourage more walking and rolling include better maintenance of sidewalks and trails, roadways designed with more separation between vehicles and people walking, new sidewalks and trails in the community, and better lighting. The web map comments were generally consistent with the survey responses, and respondents were able to provide more detailed locations where they experience different challenges. Many of the web map comments were on major corridors such as Lee Road, Cedar Road, and Euclid Heights Boulevard. Several responses noted concerns about debris in bicycle lanes, which suggests a need for regular bicycle facility cleaning. People also noted locations where they have concerns about walking near high traffic and speeding vehicles, and where they would like crossing improvements. Overall, the survey displayed positive interest and engagement with the Heights Regional ATP. The results gathered from both the survey and web map provide the Cleveland Heights, South Euclid, and University Heights communities with ideas of what people would like to see in the three cities to improve walking and biking.

PUBLIC INPUT #2: OPEN HOUSE AND ONLINE SURVEY

This section summarizes the second round of public input for the Heights Regional ATP, which consisted of an open house and online survey. The two public input opportunities are summarized separately below.

OPEN HOUSE

An open house for the Heights Regional ATP was held on July 15, 2024, from 6:00pm to 8:00pm at the Cleveland Heights Library on Noble Road (2800 Noble Rd). The intent was to present the Plan's draft recommendations to the public and receive feedback. Approximately 50 people attended, 30 people signed in and 22 people submitted a comment card. Of those who answered the question "Where do you live?", nine people marked Cleveland Heights, eight people marked South Euclid, and four people marked University Heights.

GENERAL FEEDBACK

People were generally excited for the new proposed changes within their community and some participants provided additional ideas. Many people mentioned safety as a top priority and there was a lot of interest in prioritizing a complete bicycle boulevard network. Speeding was mentioned as a problem by several people and there was a general interest in traffic calming. Several people mentioned the importance of helping children safely travel to/from school by walking and biking. A few people mentioned focusing on quick-build projects. Other comments included separating bicycle and pedestrian traffic.

INFRASTRUCTURE RECOMMENDATIONS FEEDBACK

In general participants wanted to see new and improved infrastructure along existing roads that safely accommodate pedestrians and bicyclists. Participants wanted to feel safe as they drive, bike and walk through their neighborhoods. For example, one person commented "Narrower lanes are safer for everyone: drivers & pedestrians." Many people commented that a priority is traffic calming and bicycle boulevards with improved crossings. Of those who answered the infrastructure question "What are your top 1-3 projects?", the top three projects were the Cedar Road shared use path and separated bicycle lane (8 votes, project #25), Lee Road separated bicycle lane (4 votes, project #19), and Washington Boulevard buffered bicycle lane (4 votes, project #23). Tallies of all project votes are included in **Table 2**. Specific feedback on infrastructure projects from comment sheets and other notes included:

- Linear Projects
 - » The Severance Circle additional connection (project #54) should be a shared use path instead of a sidewalk. Multiple people voiced support for this change.
 - » The existing Severance Circle bicycle lanes are not sufficient and should be improved.
 - » There should be more trees/ greenery along streets and major roadways.
 - » Include a shared use path on the south side of North Park instead of existing bike lanes.

- » Coventry Road should have a bicycle facility to the school. Multiple people mentioned this connection.
- » There should be dedicated infrastructure for pedestrian and bicycle access to RTA, especially the Blue/Green Line.
- » “Consider using parallel streets instead of main roads to save money. Many cyclists already seem to be using side street[s] for safety.”
- » Interest in seeing a buffered bike lane on Taylor Road instead of the proposed mix of facilities.
- » The Lincoln Boulevard bicycle boulevard (project #17) should be extended to connect to Euclid Heights Boulevard.
- » Interest in a road diet and two-way separated bicycle lane along Euclid Heights Boulevard.
- » Interest in improved infrastructure proposed on Lee Road.
- » Interest in infrastructure on Warrensville Center Road and questions about if bicycle and pedestrian improvements could be incorporated in the resurfacing project.
- Crossing Improvements
 - » Ensure that signals have bicycle detection and actuation.
 - » Interest in marked crossings on all sides of the Clarkson Road and Coventry Road intersection.
 - » Improved crossing spacing along Mayfield Road, particularly near Lakeview Cemetery.
 - » One person noted that the curb cut into the gas station at Lee Road and Silsby Road is an issue.

PROGRAM AND POLICY RECOMMENDATIONS FEEDBACK

The program and policy recommendation feedback expressed the different ideals of the community, mostly focusing on safety. Of those who answered the program and policy question “What are your top 1-3 programs, policies, and why?”, seven people marked *Street Tree Planting and Maintenance Policy*, six people marked *Provide Leading Pedestrian Intervals (LPIs) at traffic signals city-wide*, and five people marked *Implement an “Idaho Stop” law where cyclists can yield at stop signs*. Tallies of all program and policy votes are included in **Table 3**. Specific feedback on programs and policies from comment sheets and other notes included that “Every single non-police technique to slow down cars on all our streets should be utilized;” libraries should be utilized to provide tools, materials, and guidance for bike repair; the cities should adopt policies that leverages repaving and resurfacing to make streets safer; and to expand access to rapid transit to extend the range of non-drivers as a way of increasing equity.

Table 2: Infrastructure Project Comment Sheets Vote Counts

<i>Project ID</i>	<i>Project Description</i>	<i>Comment Card Votes</i>
25	Shared Use Path & Separated Bicycle Lane on Cedar Road	8
19	Separated Bicycle Lane on Lee Road	4
23	Shared Use Path on Washington Boulevard	4
65	Crossing Improvement Zone on Coventry Road	3
11	Bicycle Boulevard on Liberty Road, Norma Road, and Ardmore Road	3
9	Buffered Bicycle Lane on Belvoir Boulevard	3
5	Separated Bicycle Lane on Warrensville Center Road/Noble Road	3
4	Shared Use Path on Monticello Road	3
29	Bicycle Boulevard on Saybrook Road and Traymore Road	2
22	Buffered Bicycle Lane on Washington Boulevard	2
12	Shared Use Path & Separated Bicycle Lane on Mayfield Road	2
8	Bicycle Boulevard on Miramar Boulevard, Felton Road, Avondale Road, and Quarry Drive	2
54	New Sidewalk on Severance Circle (additional connection)	2
30	Bicycle Boulevard on Washington Boulevard	2
13	Shared Use Path on Euclid Heights Boulevard	2
28	Bicycle Boulevard on Silsby Road, Essex Road, Westminster Road, and Clarkson Road	1
10	Bicycle Boulevard, Bicycle Lane, Buffered Bicycle Lane on Taylor Road	1
138	Signalized Intersection Improvements on Warrensville Center Road/Cedar Road	1
113	Signalized Intersection Improvements on Warrensville Center Road/Mayfield Road	1
44	New Sidewalk on Monticello Boulevard	1
45	New Sidewalk on Belvoir Boulevard	1
34	New Sidewalk on Belvoir Boulevard	1
52	New Sidewalk on Warrensville Center Road	1

Table 3: Program and Policy Comment Sheets Vote Counts

Theme	Program/ Policy	Comment Card Votes
Connectivity	<i>Increase Transit Access</i>	3
	<i>Implement an “Idaho Stop” law where cyclists can yield at stop signs when safe.</i>	5
	<i>Adopt a Complete Streets Policy</i>	3
	<i>Evaluate Complete Streets Policy Updates and Implementation Best Practices</i>	0
	<i>Wayfinding Program</i>	1
Safety	<i>Develop a “quick build” program used to implement, track, and analyze temporary infrastructure builds</i>	4
	<i>Provide Leading Pedestrian Intervals (LPIs) at traffic signals city- wide</i>	6
	<i>Implement speed management on arterial, collector, and local roads</i>	4
	<i>Remove all slip lanes</i>	1
	<i>Sidewalk and Trail Maintenance Policy</i>	0
	<i>Ban right turns on red at all stoplights</i>	1
	<i>Adopt a Vision Zero Policy</i>	0
	<i>Street Tree Planting and Maintenance Policy</i>	7
Accessibility	<i>Ensure that active transportation network is ADA compliant and accessible to all</i>	1
	<i>Bicycle Parking and Storage Requirements in Commercial Districts</i>	2
Health	<i>Community Walking and Biking Events</i>	2
Education	<i>Trainings & Curricula</i>	0
	<i>Bicycle and Pedestrian Safety Training, Policies, and Conversations with Police Department</i>	0
	<i>Spread Transit Awareness</i>	0
	<i>Bicycle and Pedestrian Counts</i>	0
Equity	<i>Expand access to free and low-cost bicycles and gear</i>	1
	<i>Expand access to bicycle repair programs</i>	2
	<i>Equity in Project Prioritization</i>	1
	<i>Remove bicycle license requirement</i>	3

ONLINE SURVEY

A webpage was launched to gather feedback on the proposed active transportation projects. It featured a brief overview of the Heights Regional ATP's purpose and progress, descriptions of various active transportation facility types, an interactive map of all proposed projects, and a survey. The webpage and survey were available online from July 15 to August 12, 2024, and received 26 responses. A screenshot of the survey is shown in **Figure 15**. The survey included two open-ended questions. Responses to those questions are summarized below.

WHAT ARE YOUR TOP 1-3 PROJECTS AND WHY?

Survey participants wrote in their top projects, and the projects that received votes are shown in **Table 4**. Additionally, four people responded that they like the recommendations for separated and protected bicycle facilities in general, particularly on main roads. The bicycle boulevard on Silsby Road and connecting streets was the most popular project, followed by the proposed bicycle and shared use path projects on Mayfield Road and Lee Road.

Table 4: Project Votes

<i>Project ID</i>	<i>Road Name</i>	<i>Proposed Project</i>	<i>Public Input Votes</i>
28	Silsby Road, Essex Road, Westminster Road, and Clarkson Road	Bicycle Boulevard	6
12	Mayfield Road	Shared Use Path & Separated Bicycle Lane	5
19	Lee Road	Separated Bicycle Lane	4
10	Taylor Road	Bicycle Boulevard, Bicycle Lane, Buffered Bicycle Lane	3
25	Cedar Road	Crossing Improvement Zone	3
10	Taylor Road	Crossing Improvement Zone	2
12	Mayfield Road	Crossing Improvement Zone	2
19	Lee Road	Crossing Improvement Zone	2
20	Oakwood Green Park Path	Shared Use Path	2
23	Washington Boulevard	Shared Use Path	2
25	Cedar Road	Shared Use Path & Separated Bicycle Lane	2
54	Severance Circle (additional connection)	New Sidewalk	2
145	Fairmount Boulevard/Coventry Road/Scarborough Road	Signalized Intersection Improvements	2
147	Taylor Road/Scarborough Road	Signalized Intersection Improvements	2
1	Belvoir Boulevard	Shared Use Path	1
4	Monticello Road	Shared Use Path	1
5	Warrensville Center Road/Noble Road	Separated Bicycle Lane	1
8	Miramar Boulevard, Felton Road, Avondale Road, and Quarry Drive	Bicycle Boulevard	1
13	Euclid Heights Boulevard	Shared Use Path	1
14	Compton Road	Bicycle Boulevard & Shared Use Path	1
18	Edgehill Road	Bicycle Boulevard	1

<i>Project ID</i>	<i>Road Name</i>	<i>Proposed Project</i>	<i>Public Input Votes</i>
22	Washington Boulevard	Buffered Bicycle Lane	1
62	North Park Boulevard	New Sidewalk	1
65	Coventry Road	Crossing Improvement Zone	1
128	Warrensville Center Road/Antisdale Road/Verona Road	Signalized Intersection Improvements	1
131	Taylor Road/Washington Boulevard	Signalized Intersection Improvements	1
141	Taylor Road/Silsby Road	Signalized Intersection Improvements	1
144	Fairmount Boulevard/Demington Drive	RRFB	1
146	Lee Road/Scarborough Road	Offset Intersection Treatment	1

OPEN-ENDED RESPONSES

The open-ended responses are summarized below into themes of safety, what has worked, project feedback, and general comments.

Safety

- **Speed Reduction:** Several people responded that there is a general need to slow down cars in the area.
- **Noble Road North of Monticello:** There were pedestrian safety concerns due to speeding and running red lights.
- **South Belvoir Boulevard/Silsby Road/Wrenford Road Intersection:** A respondent would like a roundabout with pedestrian facilities considered at this intersection because they feel it is unsafe to cross.
- **Bicycle Safety on High-Speed Roads:** Several people responded with concerns about the danger of riding bikes on high-speed roads and expressed a desire for all bicycle facilities to be safe enough for young children to use.
- **Protected Multi-Use Paths and Bicycle Lanes:** Several people responded that protected facilities and multi-use paths are the most desirable.
- **Pedestrian Safety Prioritization:** One person said pedestrian safety should be a priority.

What Has Worked

- **Multi-Use Paths:** There was positive feedback for bicycle and pedestrian paths that are off the road and near greenspaces, Washington Boulevard was given as an example of how this is done well.
- **Traffic Barriers on Lee Road:** Someone noted that barriers were installed last summer north and south of the Cedar intersection which made walking feel safer.

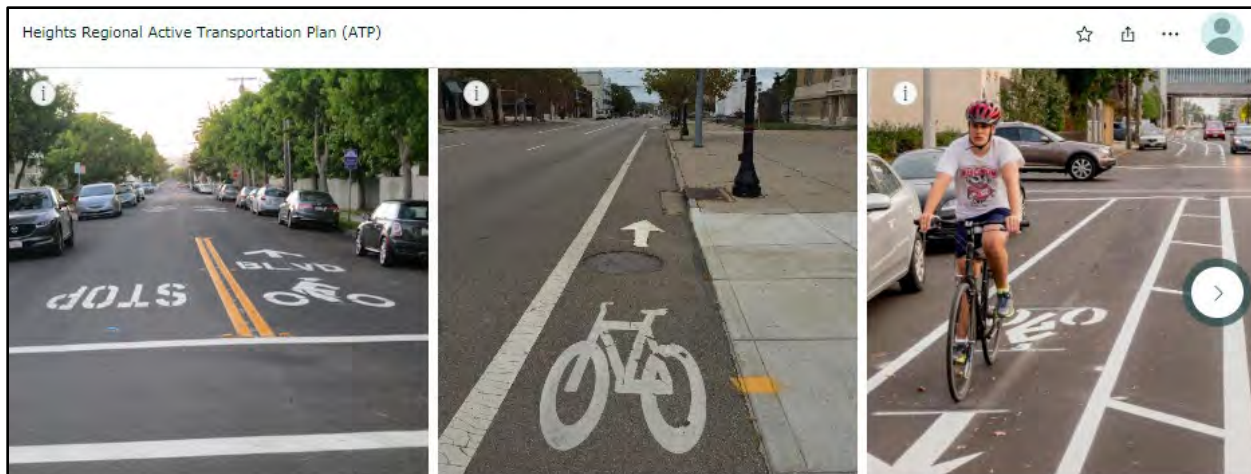
Project Feedback

- **Sidewalks at Bus Stops:** One person noted a need for sidewalks where bus stops are located.

- **Silsby Road/Essex Road Bike Boulevard:** A respondent suggested moving the bike boulevard a block or two south, as Silsby Road is a main thoroughfare for cars.
- **Fairmount Boulevard/Coventry Road/Scarborough Road Intersection:** Someone suggested that crosswalks could be more generous, allowing more frequent pedestrian crossings and longer crossing times. They asked to consider a traffic circle with a bike curb.
- **Taylor Road Bike Lanes:** A respondent asked whether it was feasible to add bike lanes on Taylor Road.
- **Cumberland Road:** Someone asked to consider extending the bike lane or multi-use path in front of the pool.

General Comments

- **Adaptive Signals:** One respondent noted a need for adaptive signals at major intersections.
- **Maintenance:** One person noted a need to ensure facilities, particularly bicycle lanes, are maintained and kept pothole-free.
- **Connections to Cleveland:** Someone noted that the plan should consider active transportation connections to Cleveland.
- **Driving Encouragement:** A participant would like the plan not to discourage driving and consider those unable to walk or bicycle.
- **Left Turn Arrows:** One person noted a need for left turn arrows in both directions on Superior at the intersections of Lee Road and Taylor.
- **Street Trees on Lee Road:** There was a suggestion to add back street trees on Lee Road between Mayfield Road and Euclid Heights Boulevard, which were taken away during a construction project.
- **Overall Enthusiasm:** Several responses indicated strong support for the plan and proposed facilities and how these improvements could help revitalize and attract people to the community.



Descriptions of Pedestrian and Cyclist Improvements

1. Navigate on the map with your mouse or touch screen. Click the arrows in the top right to view the map full screen, and the list icon in the bottom left to view the legend (may require full screen mode).
2. To view a recommendation click on one of the points or lines on the map. This will give you a pop-up screen. Some projects overlap, click on the arrows in the corner of the pop-up screen to view each project.

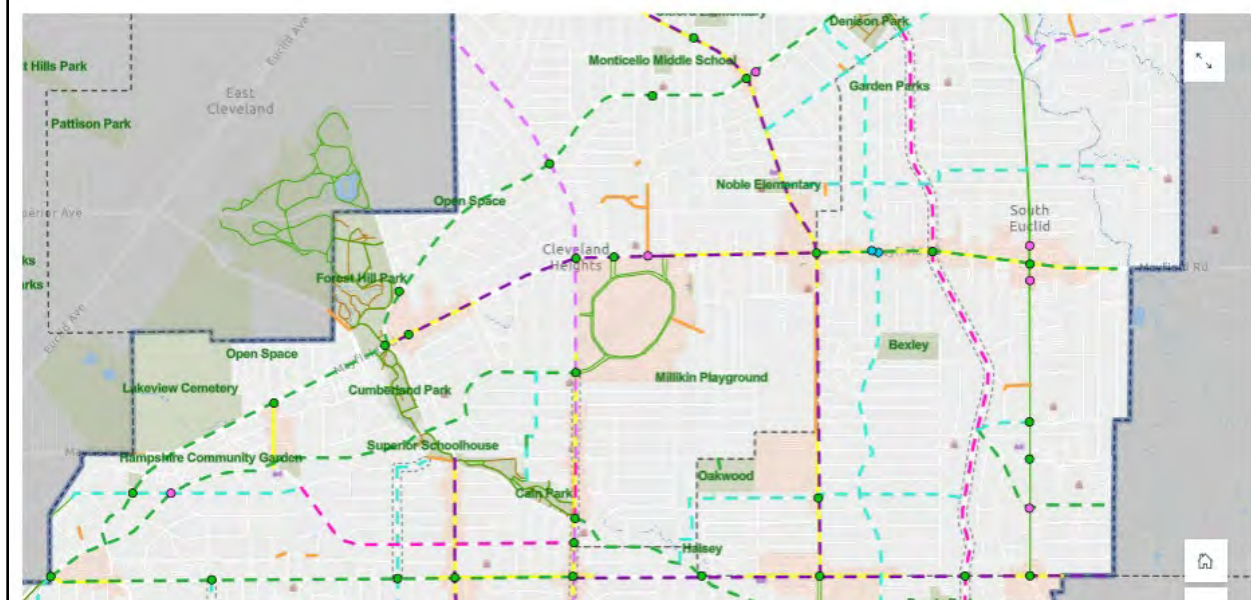


Figure 15: Online survey screenshot

APPENDIX B

SYSTEMIC SAFETY ANALYSIS METHODOLOGY



APPENDIX B - SYSTEMIC SAFETY ANALYSIS METHODOLOGY

This appendix provides additional detail on the systemic safety analysis methodology reported in the Existing Conditions section of the Heights Regional ATP. It follows [FHWA guidelines](#) for systemic safety analysis, which involves selecting focus crash types, identifying focus facilities, and identifying and evaluating roadway risk factors.

SELECT FOCUS CRASH TYPES

This analysis is focused on increasing safety for bicyclist and pedestrians; therefore, the following AASHTO emphasis areas for special users were chosen: (1) to make walking and street crossing safer and (2) ensure safer bicycle travel. Those two emphasis areas were analyzed by looking at all bicycle and pedestrian related crashes in years 2018 through 2022.

IDENTIFY FOCUS FACILITIES

All 179 pedestrian and bicycle crashes in Cleveland Heights, University Heights, and South Euclid from 2018 through 2022, regardless of injury severity, were used to determine the facility type on which bicycle and pedestrian crashes most often occurred. These crashes were first categorized by mode (pedestrian/bicycle), then separated based on if the crash location occurred at a segment, signalized intersection, or unsignalized intersection. A manual review of crash reports resulted in 43 crashes that were originally categorized as “Not An Intersection” being recategorized as the appropriate intersection type, while two crashes that were categorized as intersection-based were recategorized as “Not An Intersection.”

Intersection crashes were further categorized based on whether the intersection was a T-intersection, four-way intersection, or traffic circle/roundabout, and all crashes were categorized depending on the road classifications at the crash location (arterials, collectors, or local roads). As shown in **Figure 1** for pedestrians and **Figure 2** for bicyclists, the following focus facilities were identified:

- » Arterial roadway segments (pedestrians)
- » Signalized Four-Way Intersections on arterial roads (pedestrians and bicyclists)
- » Unsignalized Four-Way Intersections on arterial roads (pedestrians)
- » Unsignalized T-intersections on arterial roads (pedestrians and bicyclists)
- » Unsignalized Four-Way Intersections on collector roads (bicyclists)

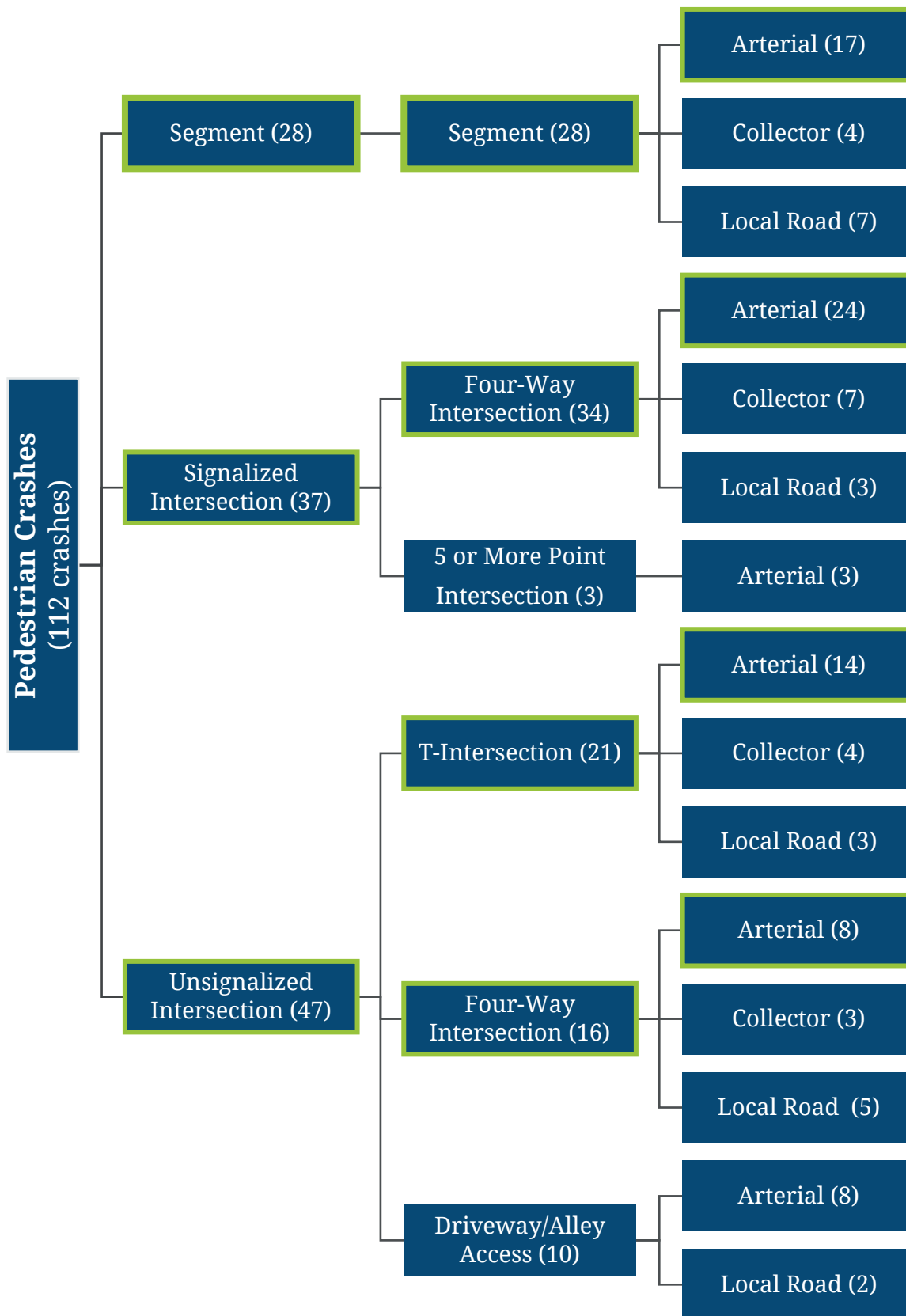


Figure 1: Pedestrian Crash Tree Diagram

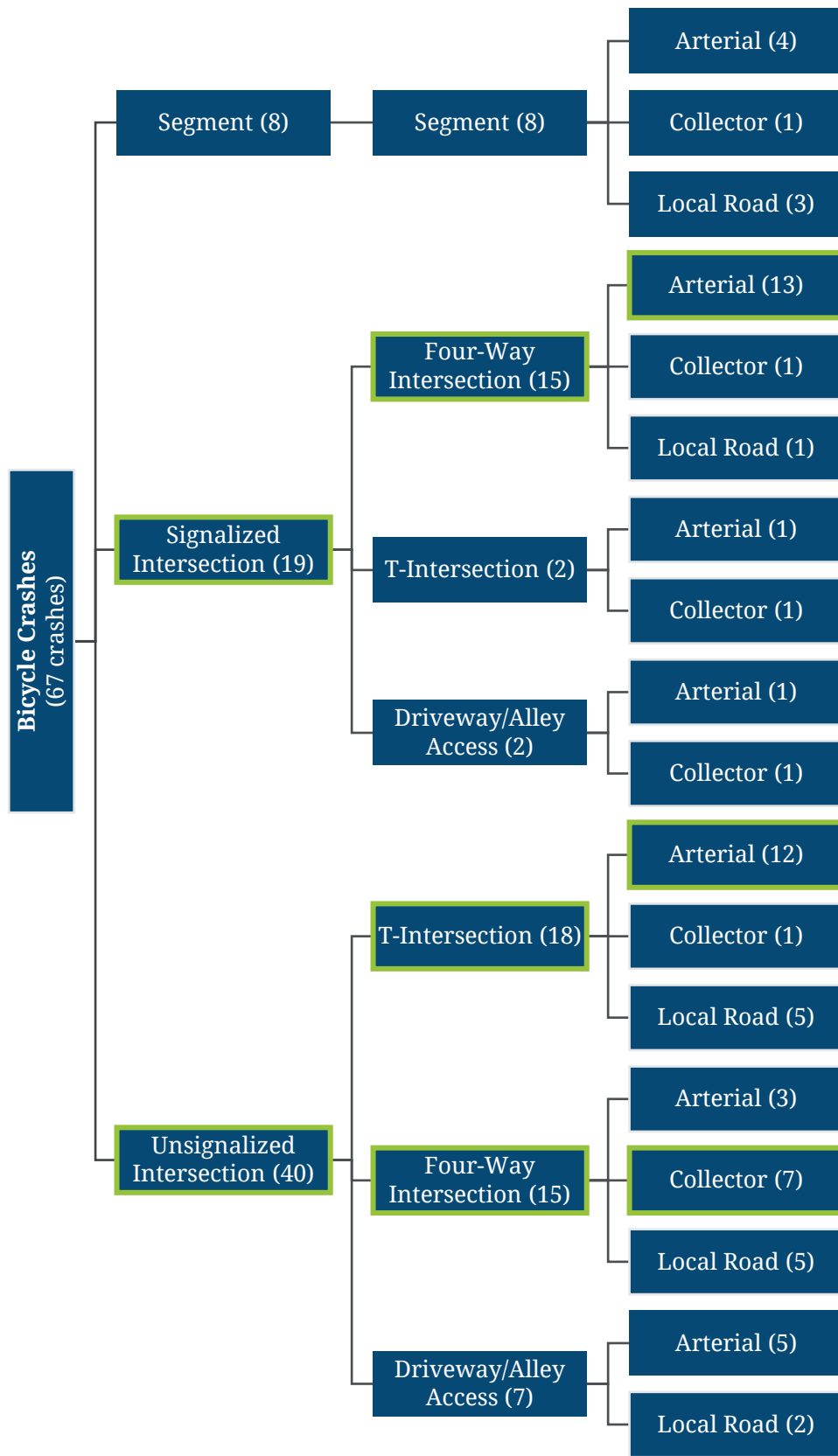


Figure 2: Bicycle Crash Tree Diagram

EVALUATE RISK FACTORS

Based on research, experience, and characteristics of the identified crash locations, potential risk factors for bicycle and pedestrian related crashes were identified for each focus facility type. Available data from the following sources was used to identify a list of verified risk factors:

- » Ohio Department of Transportation's Transportation Information Mapping System (ODOT TIMS) roadway inventory
- » Cleveland Heights, University Heights, and South Euclid GIS data:
 - Bicycle facility inventory
 - School inventory
 - Park inventory
 - Business district inventory

If no local data was available, the potential risk factor was not assessed. If data becomes available in the future, the cities should consider assessing the potential risk to further refine their focus facilities and help identify improvements to high-risk facilities. Cleveland Heights, University Heights, and South Euclid did not have a database of intersection characteristics, so an intersection network was created based on ODOT TIMS segment data and OpenStreetMap (OSM) traffic signal location data. Some risk factors were able to be verified using crash data, but these factors could not be applied to the local network due to risk factor information not being present in available databases. Therefore, these factors (time of day and lighting) were not included in the roadway risk scoring.

IDENTIFY RISK FACTORS

Potential risk factors were identified for each of the focus facilities based on existing crash risk factor research. Crash data for crashes that occurred on the focus facilities within the Heights ATP area were then evaluated to determine if each risk could be verified. In some cases, there was no or incomplete data available to assess some of the potential risk factors. Those potential risk factors (lighting, presence of on-street parking, and presence of sidewalks) can be evaluated in the future if additional data is gathered.

Table 1 shows the risk factors considered for pedestrians on arterial segments. There were 17 verified crashes on this focus facility type. The verified risk factors for pedestrians on arterial segments are:

- » Average Daily Traffic Volume (10,001 or greater)
- » Speed limit 35 mph or greater
- » Location relative to a business district (1/16 mile)
- » Areas that have lighting
- » Roads that have four lanes

Roads with average daily traffic volumes of 10,001 to 15,000 represented 47 percent (8 of 17) of pedestrian crashes and roads with average daily traffic volumes of over 15,000 represented 18 percent (3 of 17) of pedestrian crashes. Roads with a speed limit of 25 to 30 mph represented 71 percent (12 of 17) of pedestrian crashes on arterial segments. However, based on professional judgement speed of 35-40 mph was included as a risk factor since higher speeds typically correspond to higher crash risk. The location of a crash relative

to a business district also played a significant role in pedestrian crashes as 76 percent (13 of 17) of pedestrian crashes happened within 1/16 mile of a business district. Pedestrian crashes also occurred mostly at dark on arterial segments that had lighting. Lighting would typically be a solution to nighttime crashes rather than a risk factor. The lighting risk factor suggests the cities could evaluate existing nighttime lighting in high-risk areas and consider design solutions such as pedestrian-scale lighting. Roadways that have four lanes were also determined to be a risk factor for pedestrians on arterial segments with 82 percent (14 of 17) crashes occurring on four-lane roadways.

Table 1. Risk Factors Considered for Pedestrians on Arterial Segments

<i>Risk Factors</i>	<i>Data Available¹</i>	<i>Heights ATP Risk</i>	<i>Verified Risk Factor</i>
<i>Time of day</i>	<i>Yes</i>	<i>3-6 PM: 29% (5 crashes)</i>	<i>No</i>
<i>Average Daily Traffic</i>	<i>Yes</i>	<i>10k-15k ADT: 47% (8 crashes) 15k+ ADT: 18% (3 crashes)</i>	<i>Yes</i>
<i>Speed limit</i>	<i>Yes</i>	<i>25-30 mph: 71% (12 crashes) 35-40 mph: 29% (5 crashes)</i>	<i>Yes</i>
<i>Location relative to a school (1/8 mile)</i>	<i>Yes</i>	<i>Near school: 0% (0 crashes)</i>	<i>No</i>
<i>Location relative to a school (1/4 mile)</i>	<i>Yes</i>	<i>Near school: 41% (7 crashes)</i>	<i>No</i>
<i>Location relative to a park (parks) (1/16 mile)</i>	<i>Yes</i>	<i>Near Park: 18% (3 crashes)</i>	<i>No</i>
<i>Location relative to a business district (1/16 mile)</i>	<i>Yes</i>	<i>Near Business District: 76% (13 crashes)</i>	<i>Yes</i>
<i>Vertical grade</i>	<i>Yes</i>	<i>12% (2 crashes)</i>	<i>No</i>
<i>Horizontal curvature</i>	<i>Yes</i>	<i>6% (1 crash)</i>	<i>No</i>
<i>Lighting levels</i>	<i>Partial</i>	<i>Dark, lighted: 59% (10 crashes)</i>	<i>Yes</i>
<i>Number of Lanes</i>	<i>Yes</i>	<i>Four Lanes: 82% (14 crashes)</i>	<i>Yes</i>
<i>Roadway Conditions (Wet/Dry)</i>	<i>Yes</i>	<i>Wet: 18% (3 crashes)</i>	<i>No</i>
<i>Presence of on-street parking</i>	<i>No</i>		
<i>Presence of sidewalk</i>	<i>Yes</i>	<i>No Sidewalk: 6% (1 crashes)</i>	<i>No</i>

Notes:

1. Partial = Crash data was used to verify risk factors; however data is not available for some or all cities for the network analysis in the Heights ATP. Presence of sidewalk was evaluated manually for this focus facility due to its potential importance.

Table 2 shows the risk factors considered for pedestrians at signalized four-way intersections on arterial roadways. There were 24 pedestrian crashes on this road facility in the study period. The verified risk factors in the Heights ATP for pedestrians on this road facility are:

- » Time of day (evening commute)
- » Average Daily Traffic Volume (15k +)
- » Location relative to a business district (1/16 mile)
- » Roads that have four lanes

The evening commute time of day, between 6pm to 9pm, represented 33 percent (8 of 24) of pedestrian crashes at signalized four-way intersections. Roads with average daily traffic volumes of over 15,000 represent 54 percent (13 of 24) of pedestrian crashes. Roads with a speed limit of 25 to 30 mph represent 88 percent (21 of 24) of pedestrian crashes on signalized four-way intersections. However, based on professional judgement, speed was excluded as a risk factor because 25 to 30 mph road segments on arterials almost always overlap with business districts, which are the more likely connection between road characteristics and these crashes. The location relative to a business district also played a significant role in pedestrian crashes as 79 percent (19 of 24) of pedestrian crashes happened within 1/16 mile of a business district. Roadways that have four lanes were also determined to be a risk factor for pedestrians with 100 percent (24 of 24) of these crashes occurring on four-lane roadways.

Table 2. Risk Factors Considered for Pedestrians at Signalized Four-Way Intersections on Arterial Roadways

<i>Risk Factors</i>	<i>Data Available¹</i>	<i>Heights ATP Risk</i>	<i>Verified Risk Factor</i>
<i>Time of day</i>	Yes	6-9 PM: 33% (8 crashes)	Yes
<i>Average Daily Traffic</i>	Yes	15k + ADT: 54% (13 crashes)	Yes
<i>Speed limit</i>	Yes	25-30 mph: 88% (21 crash)	No
<i>Location relative to a school (1/8 mile)</i>	Yes	Near school: 0% (0 crashes)	No
<i>Location relative to a school (1/4 mile)</i>	Yes	Near school: 25% (6 crashes)	No
<i>Location relative to a point of interest (parks) (1/16 mile)</i>	Yes	Near park: 17% (4 crashes)	No
<i>Location relative to a point of interest (business district) (1/16 mile)</i>	Yes	Near business district: 79% (19 crashes)	Yes
<i>Vertical grade</i>	Yes	0% (0 crashes)	No
<i>Horizontal curvature</i>	Yes	0% (0 crashes)	No
<i>Lighting Levels</i>	Partial	Dark, Lighted: 38% (9 crashes)	No
<i>Number of Lanes</i>	Yes	Four Lanes: 100% (24 crashes)	Yes
<i>Road conditions (wet or dry)</i>	Yes	Wet: 21% (5 crashes)	No
<i>Presence of on-street parking</i>	No		
<i>Presence of sidewalk</i>	No		

Notes:

1. Partial = Crash data was used to verify risk factors; however data is not available for some or all cities for the network analysis in the Heights ATP.

Table 3 shows the risk factors considered for pedestrians at unsignalized four-way intersections on arterial roadways. There were eight pedestrian crashes on this road facility in the study period. The verified risk factors in the Heights ATP for pedestrians on this road facility are:

- » Time of day (6pm to 12am)
- » Average Daily Traffic Volume (15k +)
- » Speed limit between 35 and 40 mph
- » Location relative to a business district (1/16 mile)
- » Areas that have lighting
- » Roads that have four lanes

The evening commute and late evening time of day, between 6pm to 9pm and 9pm to 12am, represented 50 percent (4 of 8) of pedestrian crashes at unsignalized four-way intersections. Roads with average daily traffic volumes of average daily traffic volumes of over 15,000 represent 63 percent (5 of 8) of pedestrian crashes. Roads with a speed limit of 35 to 40 mph represent 63 percent (5 of 8) of pedestrian crashes on signalized four-way intersections. The location relative to a business district also played a significant role in pedestrian crashes as 75 percent (6 of 8) of pedestrian crashes happened within 1/16 mile of a business district. Pedestrian crashes also occurred mostly after dark at unsignalized four-way intersections that had lighting. Lighting would typically be a solution to nighttime crashes rather than a risk factor. The lighting risk factor suggests the cities could evaluate existing nighttime lighting in high-risk areas and consider design solutions such as pedestrian-scale lighting. Roadways that have four lanes were also determined to be a risk factor for pedestrians with 75 percent (6 of 8) crashes occurring on four-lane roadways.

Table 3. Risk Factors Considered for Pedestrian crashes at Unsignalized Four-Way Intersections on Arterial Roadways

<i>Risk Factors</i>	<i>Data Available¹</i>	<i>Heights ATP Risk</i>	<i>Verified Risk Factor</i>
<i>Time of day</i>	<i>Yes</i>	<i>6-9 PM: 25% (2 crashes) 9 PM -12 AM: 25% (2 crashes)</i>	<i>Yes</i>
<i>Average Daily Traffic Volumes</i>	<i>Yes</i>	<i>15k + ADT: 63% (5 crashes)</i>	<i>Yes</i>
<i>Speed Limit</i>	<i>Yes</i>	<i>35-40 mph: 63% (5 crashes)</i>	<i>Yes</i>
<i>Location relative to a school (1/8 mile)</i>	<i>Yes</i>	<i>Near school: 13% (1 crash)</i>	<i>No</i>
<i>Location relative to a school (1/8 mile)</i>	<i>Yes</i>	<i>Near school: 38% (3 crash)</i>	<i>No</i>
<i>Location relative to a point of interest (parks) (1/16 mile)</i>	<i>Yes</i>	<i>Near park: 0% (0 crashes)</i>	<i>No</i>
<i>Location relative to a point of interest (business district) (1/16 mile)</i>	<i>Yes</i>	<i>Near business district: 75% (6 crashes)</i>	<i>Yes</i>
<i>Vertical grade</i>	<i>Yes</i>	<i>13% (1 crash)</i>	<i>No</i>
<i>Horizontal curvature</i>	<i>Yes</i>	<i>0% (0 crashes)</i>	<i>No</i>
<i>Lighting Levels</i>	<i>Partial</i>	<i>Dark, Lighted: 63% (5 crashes)</i>	<i>Yes</i>
<i>Number of Lanes</i>	<i>Yes</i>	<i>Four Lanes: 75% (6 crashes)</i>	<i>Yes</i>

<i>Risk Factors</i>	<i>Data Available¹</i>	<i>Heights ATP Risk</i>	<i>Verified Risk Factor</i>
<i>Road conditions (wet or dry)</i>	<i>Yes</i>	<i>Wet: 38% (3 crashes)</i>	<i>No</i>
<i>Presence of on-street parking</i>	<i>No</i>		
<i>Presence of sidewalk</i>	<i>No</i>		

Notes:

1. Partial = Crash data was used to verify risk factors; however data is not available for some or all cities for the network analysis in the Heights ATP.

Table 4 shows the risk factors considered for pedestrians at unsignalized T-intersections on arterial roadways. There were 14 pedestrian crashes on this road facility in the study period. The verified risk factors in the Heights ATP for pedestrians on this road facility are:

- » Time of day (evening commute)
- » Average Daily Traffic Volume (10,001 or greater)
- » Location relative to a school (1/4 mile)
- » Location relative to a business district (1/16 mile)
- » Roads that have four lanes

The evening commute time of day, between 6pm to 9pm, represented 36 percent (5 of 14) of pedestrian crashes at unsignalized T-intersections. Roads with average daily traffic volumes of 10,001 or greater 64 percent (9 of 14) of pedestrian crashes. The location relative to a school (1/4 mile) and business district (1/16 mile) also played significant roles in pedestrian crashes. Crashes relative to a school represented 57 percent (8 of 14) and relative to a business district represented 71 percent (10 of 14). Roadways that have four lanes were also determined to be a risk factor for pedestrians with 57 percent (8 of 14) crashes occurring on four-lane roadways.

Table 4. Risk Factors Considered for Pedestrian crashes at Unsignalized T-Intersections

<i>Risk Factors</i>	<i>Data Available¹</i>	<i>Heights ATP Risk</i>	<i>Verified Risk Factor</i>
<i>Time of day</i>	<i>Yes</i>	<i>6-9 PM: 36% (5 crashes)</i>	<i>Yes</i>
<i>Average Daily Traffic Volumes</i>	<i>Yes</i>	<i>10k-15k ADT: 43% (6 crashes) 15k+ ADT: 21% (3 crashes)</i>	<i>Yes</i>
<i>Speed Limit</i>	<i>Yes</i>	<i>25-30 mph: 50% (7 crashes) 35-40 mph: 50% (7 crashes)</i>	<i>No</i>
<i>Location relative to a school (1/8 mile)</i>	<i>Yes</i>	<i>Near school: 14% (2 crashes)</i>	<i>No</i>
<i>Location relative to a school (1/4 mile)</i>	<i>Yes</i>	<i>Near school: 57% (8 crashes)</i>	<i>Yes</i>
<i>Location relative to a point of interest (parks) (1/16 mile)</i>	<i>Yes</i>	<i>Near park: 7% (1 crash)</i>	<i>No</i>

<i>Risk Factors</i>	<i>Data Available¹</i>	<i>Heights ATP Risk</i>	<i>Verified Risk Factor</i>
<i>Location relative to a point of interest (business district) (1/16 mile)</i>	<i>Yes</i>	<i>Near business district: 71% (10 crashes)</i>	<i>Yes</i>
<i>Vertical grade</i>	<i>Yes</i>	<i>7% (1 crash)</i>	<i>No</i>
<i>Curve Grade</i>	<i>Yes</i>	<i>0% (0 crashes)</i>	<i>No</i>
<i>Lighting Levels</i>	<i>Partial</i>	<i>Dark, Lighted: 36% (5 crashes)</i>	<i>No</i>
<i>Number of Lanes</i>	<i>Yes</i>	<i>Four Lanes : 57% (8 crashes) Six Lanes : 7% (1 crash)</i>	<i>Yes</i>
<i>Road conditions (wet or dry)</i>	<i>Yes</i>	<i>Wet: 14% (2 crashes)</i>	<i>No</i>
<i>Presence of on-street parking</i>	<i>No</i>		
<i>Presence of sidewalk</i>	<i>Yes</i>	<i>No Sidewalk: 0% (0 crashes)</i>	<i>No</i>

1. Notes: Partial = Crash data was used to verify risk factors; however data is not available for some or all cities for the network analysis in the Heights ATP. Presence of sidewalk was evaluated manually for this focus facility.

Table 5 shows the risk factors considered for bicycles at signalized four-way intersections on arterial roadways. There were 13 bicycle crashes on this road facility in the study period. The verified risk factors in the Heights ATP for pedestrians on this road facility are:

- » Time of day (early evening commute)
- » Average Daily Traffic Volume (15k +)
- » Location relative to a business district (1/16 mile)
- » Absence of a bicycle facility
- » Roads that have four lanes

The early evening commute time of day, between 3pm to 6pm, represented 38 percent (5 of 13) of bicycle crashes at signalized four-way intersections. Roads with average daily traffic volumes of 15,000 or more represent 54 percent (7 of 13) of pedestrian crashes. Roads with a speed limit of 25 to 30 mph represent 77 percent (10 of 13) of bicycle crashes on signalized four-way intersections. However, based on professional judgement speed was excluded as a risk factor because 25 to 30 mph road segments on arterials almost always overlap with business districts, which are the more likely connection between road characteristics and these crashes. The location relative to a business district also played a significant role in pedestrian crashes as 62 percent (8 of 13) of bicycle crashes happened within 1/16 mile of a business district. All 13 bicycle crashes (100 percent) occurred at signalized four-way intersections that lacked the presence of a bicycle facility. Roadways that have four lanes were also determined to be a risk factor for bicyclists with 85 percent (11 of 13) of crashes occurring on four-lane roadways.

Table 5. Risk Factors Considered for Bicycle crashes at Signalized Four-Way Intersections with Arterials

<i>Risk Factors</i>	<i>Data Available¹</i>	<i>Heights ATP Risk</i>	<i>Verified Risk Factor</i>
<i>Time of day</i>	Yes	3-6 PM: 38% (5 crashes)	Yes
<i>Average Daily Traffic Volumes</i>	Yes	15k+ ADT: 54% (7 crashes)	Yes
<i>Speed Limit</i>	Yes	25-30 mph: 77% (10 crashes)	No
<i>Location relative to a school (1/8 mile)</i>	Yes	Near school: 8% (1 crash)	No
<i>Location relative to a school (1/4 mile)</i>	Yes	Near school: 15% (2 crashes)	No
<i>Location relative to a point of interest (parks) (1/16 mile)</i>	Yes	Near park: 23% (3 crashes)	No
<i>Location relative to a point of interest (business district) (1/16 mile)</i>	Yes	Near business district: 62% (8 crashes)	Yes
<i>Vertical grade</i>	Yes	0% (0 crashes)	No
<i>Curve Grade</i>	Yes	0% (0 crashes)	No
<i>Presence of a bicycle facility</i>	Yes	No Facility: 0% (0 crashes)	Yes
<i>Lighting Levels</i>	Partial	Dark, Lighted: 38% (5 crashes)	No
<i>Number of Lanes</i>	Yes	Four Lanes: 85% (11 crashes)	Yes
<i>Road conditions (wet or dry)</i>	Yes	Wet: 15% (2 crashes)	No
<i>Presence of on-street parking</i>	No		

Notes:

- Notes: Partial = Crash data was used to verify risk factors; however data is not available for some or all cities for the network analysis in the Heights ATP.

Table 6 shows the risk factors considered for bicycles at unsignalized T-intersections on arterial roadways. There were 12 bicycle crashes on this road facility in the study period. The verified risk factors in the Heights ATP for bicycles on this road facility are:

- » Average Daily Traffic Volume (15k +)
- » Location relative to a school (1/4 mile)
- » Location relative to a business district (1/16 mile)
- » Absence of a bicycle facility
- » Roads that have four lanes

Roads with average daily traffic volumes of 15,000 or more represent 50 percent (6 of 12) of bicycle crashes. Roads with a speed limit of 25 to 30 mph represent 58 percent (7 of 12) of bicycle crashes on unsignalized T-intersections. However, based on professional judgement speed was excluded as a risk factor because 25 to 30 mph road segments on arterials almost always overlap with business districts, which are the more likely connection between road characteristics and these crashes. The location relative to a school (1/4 mile) and business district (1/16 mile) also played significant roles in pedestrian crashes. Crashes relative to a school represented 42 percent (5 of 12) and relative to a business district represented 50 percent (6 of 12).

Bicycle facilities were absent for 77 percent (10 of 13) bicycle crashes on unsignalized t-intersections. Roadways that have four lanes were also determined to be a risk factor for pedestrians with 77 percent (10 of 13) crashes occurring on four-lane roadways.

Table 6. Risk Factors Considered for Bicycle crashes at Unsignalized T-Intersections

<i>Risk Factors</i>	<i>Data Available¹</i>	<i>Heights ATP Risk</i>	<i>Verified Risk Factor</i>
<i>Time of day</i>	<i>Yes</i>	6-9 PM: 33% (4 crashes) 6-9 AM: 25% (3 crashes)	<i>No</i>
<i>Average Daily Traffic Volumes</i>	<i>Yes</i>	15k+ ADT: 50% (6 crashes)	<i>Yes</i>
<i>Speed Limit</i>	<i>Yes</i>	25-30 mph: 58% (7 crashes)	<i>No</i>
<i>Location relative to a school (1/8 mile)</i>	<i>Yes</i>	Near school: 8% (1 crash)	<i>No</i>
<i>Location relative to a school (1/4 mile)</i>	<i>Yes</i>	Near school: 42% (5 crashes)	<i>Yes</i>
<i>Location relative to a point of interest (parks) (1/16 mile)</i>	<i>Yes</i>	Near park: 8% (1 crashes)	<i>No</i>
<i>Location relative to a point of interest (business district) (1/16 mile)</i>	<i>Yes</i>	Near business district: 50% (6 crashes)	<i>Yes</i>
<i>Vertical grade</i>	<i>Yes</i>	0% (0 crashes)	<i>No</i>
<i>Curve Grade</i>	<i>Yes</i>	0% (0 crashes)	<i>No</i>
<i>Presence of a bicycle facility</i>	<i>Yes</i>	No Facility: 77% (10 crashes)	<i>Yes</i>
<i>Lighting Levels</i>	<i>Partial</i>	Dark, Lighted: 8% (1 crash)	<i>No</i>
<i>Number of Lanes</i>	<i>Yes</i>	Four Lanes: 77% (10 crashes)	<i>Yes</i>
<i>Road conditions (wet or dry)</i>	<i>Yes</i>	Wet: 17% (2 crashes)	<i>No</i>
<i>Presence of on-street parking</i>	<i>No</i>		

Notes:

- Notes: Partial = Crash data was used to verify risk factors; however data is not available for some or all cities for the network analysis in the Heights ATP.

Table 7 shows the risk factors considered for bicycles at unsignalized four-way intersections on collector roadways. There were seven bicycle crashes on this road facility in the study period. The verified risk factors in the Heights ATP for bicyclists on this road facility are:

- » Time of Day (evening commute)
- » Average Daily Traffic Volume (7,501 – 10,000)
- » Location relative to a school (1/4 mile)
- » Location relative to a business district (1/16 mile)
- » Presence of a bicycle facility
- » Roads that have four lanes

The early evening commute time of day, between 6pm to 9pm, represented 43 percent (3 of 7) of bicycle crashes at unsignalized four-way intersections on collector roadways. Roads with average daily traffic volumes of 7,500 to 10,000 represent 57 percent (4 of 7) of bicycle crashes. Roads with a speed limit of 25 to 30 mph represent 100 percent (7 of 7) of bicycle crashes on unsignalized t-intersections. However, based on professional judgement this was not verified as a risk factor because typically higher speeds represent a greater risk of crashes. The location relative to a school (1/4 mile) and business district (1/16 mile) also played significant roles in pedestrian crashes. Crashes relative to a school represented 43 percent (3 of 7) and relative to a business district represented 50 percent (6 of 12). All seven bicycle crashes (100 percent) occurred at unsignalized four-way intersections on collector roadways that lacked the presence of a bicycle facility. Roadways that have four lanes were also determined to be a risk factor for pedestrians with 86 percent (6 of 7) crashes occurring on four-lane roadways.

Table 7. Risk Factors Considered for Bicycle crashes at Unsignalized Four-Way Collector Intersections

<i>Risk Factors</i>	<i>Data Available¹</i>	<i>Heights ATP Risk</i>	<i>Verified Risk Factor</i>
<i>Time of day</i>	Yes	6-9 PM: 43% (3 crashes)	Yes
<i>Average Daily Traffic Volumes</i>	Yes	7.5k-10k ADT: 57% (4 crashes)	Yes
<i>Speed Limit</i>	Yes	25-30 mph: 100% (7 crashes)	No
<i>Location relative to a school (1/8 mile)</i>	Yes	Near school: 14% (1 crash)	No
<i>Location relative to a school (1/4 mile)</i>	Yes	Near school: 43% (3 crashes)	Yes
<i>Location relative to a point of interest (parks) (1/16 mile)</i>	Yes	Near park: 14% (1 crashes)	No
<i>Location relative to a point of interest (business district) (1/16 mile)</i>	Yes	Near business district: 57% (4 crashes)	Yes
<i>Vertical grade</i>	Yes	0% (0 crashes)	No
<i>Curve Grade</i>	Yes	14% (14 crashes)	No
<i>Presence of a bicycle facility</i>	Yes	No Facility: 100% (7 crashes)	Yes
<i>Lighting Levels</i>	Partial	Dark, Lighted: 14% (1 crash) Dark, Unknown Lighting: 14% (1 crash)	No
<i>Number of Lanes</i>	Yes	Four Lanes: 86% (6 crashes)	Yes
<i>Road conditions (wet or dry)</i>	Yes	Wet: 14% (1 crash)	No
<i>Presence of on-street parking</i>	No		

Notes:

1. Partial = Crash data was used to verify risk factors; however data is not available for some or all cities for the network analysis in the Heights ATP.

A risk assessment was performed on each focus facility identified within the Heights ATP area by determining the presence of each verified risk factor with data available for segments and intersections and applying a risk score. **Tables 8 through 10** below show each verified risk factor and their criteria. Each segment or intersection received one point towards the risk score for being a focus facility, and one point for each additional risk factor present at that location.

Table 8. Available Risk Factor Scoring for Pedestrians on Arterial Segments

<i>Location Type</i>	<i>Volume</i>	<i>Speed</i>	<i>Business District Proximity</i>	<i>Number of Lanes</i>
<i>Arterial roadway segments</i>	<i>>10,000</i>	<i>35-40 mph</i>	<i>Within 1/16 of a mile</i>	<i>4</i>

Table 9. Available Risk Factor Scoring for Pedestrians at Intersections

<i>Location Type</i>	<i>Volume</i>	<i>Speed</i>	<i>Business District Proximity</i>	<i>School Proximity</i>	<i>Number of Lanes</i>
<i>Signalized four-way intersections with arterials</i>	<i>>15,000</i>	<i>Not a factor</i>	<i>Within 1/16 of a mile</i>	<i>Not a factor</i>	<i>4</i>
<i>Unsignalized four-way intersections with arterials</i>	<i>>15,000</i>	<i>35-40 mph</i>	<i>Within 1/16 of a mile</i>	<i>Not a factor</i>	<i>4</i>
<i>Unsignalized T-intersections with arterials</i>	<i>>10,000</i>	<i>Not a factor</i>	<i>Within 1/16 of a mile</i>	<i>Within a quarter mile</i>	<i>4</i>

Table 10. Available Risk Factor Scoring for Bicyclists at Intersections

<i>Location Type</i>	<i>Volume</i>	<i>Bicycle Facility</i>	<i>Business District Proximity</i>	<i>School Proximity</i>	<i>Number of Lanes</i>
<i>Signalized four-way intersections with arterials</i>	<i>>15,000</i>	<i>No Bicycle Facility</i>	<i>Within 1/16 of a mile</i>	<i>Not a factor</i>	<i>4</i>
<i>Unsignalized T-intersections with arterials</i>	<i>>15,000</i>	<i>No Bicycle Facility</i>	<i>Within 1/16 of a mile</i>	<i>Within a quarter mile</i>	<i>4</i>
<i>Unsignalized four-way intersections with collectors</i>	<i>7,500-10,000</i>	<i>No Bicycle Facility</i>	<i>Within 1/16 of a mile</i>	<i>Within a quarter mile</i>	<i>4</i>

The scores for the verified risk factors were summed to create the total risk score for a focus facility, which ranges from 0 to 5 for the pedestrian segment and intersection scores and 0 to 6 for the bicycle intersection scores. The total pedestrian segment risk score was added to the RoadInventory_Clip_LTS_Existing_SSA shapefile as the field SSA_Score. The total pedestrian and bicycle intersection risk scores were added to the Intersection_Inventory_SSA shapefile as the fields SSA_Score_Intersection_Ped and SSA_Score_Intersection_Bike

For some roadway segments, the TIMS roadway inventory split the roadway into two features, one for each direction of the roadway (e.g., eastbound and westbound). When this occurred, often only one of the features provided all the roadway data and, therefore, the feature without all the information had incorrect individual risk scores. Therefore, the total risk score for the feature with the information was applied to both features.

APPENDIX C

PRIORITY PROJECT CUT SHEETS



November 7, 2024

The Heights Regional Active Transportation Plan

Warrensville Center Road/Noble Road; Project #5

Separated Bicycle Lane and Sidewalk (Project 52)

Extents: Northern Boundary of Cleveland Heights (near Greyton Road) to Cedar Road

Mileage: Approx. 3 miles

PLANNING CONSIDERATIONS

Posted Speed Limit	20mph (School Zone) - Rosemond Road, Glenwood Road, Warrensville Community (Mayfield Road - Oakwood Drive), Bexley Boulevard
	25mph - Greyton Road to Woodview Road; Roanoke Road to Delmore Road; Mayfield Road Intersection; Colony Road to Cedar Road
	35mph- Colony Road to Herold Road; Glenwood Road to Delmore Road; Roanoke Road to Woodview Road
Average Daily Traffic Count ¹	9,000-19,600
Connectivity to existing/ future bikeways	Future multi-use path on Monticello Boulevard and Mayfield Road
	Future bicycle boulevard on Bluestone Road, Ardmore Road, Verona Road, and Silsby Road
	Future separated bike lane on Cedar Road
Major Barriers (constrained bridges or underpasses, freeway ramps)	Topography constraints for sidewalk gap
On-Street Parking	No (in some places, Noble Road, University Heights, mix)
	Greyton Road – Woodview Road, Roanoke Road - Monticello Boulevard, Warrensville Center Road
Transit	Yes

¹ <https://gis.dot.state.oh.us/tims/Map/ActiveTransportation>

Warrensville Center Road/Noble Road

Existing

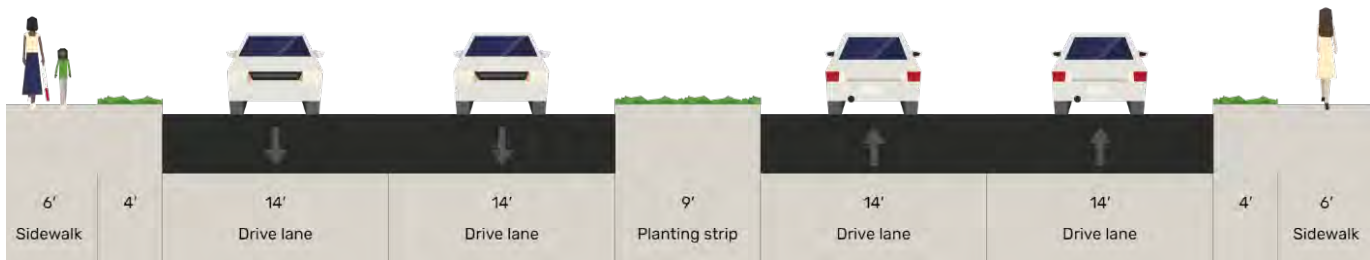
Greyton Road to Mayfield Road (4 lanes)



Mayfield Road to Herold Road (6 lanes)



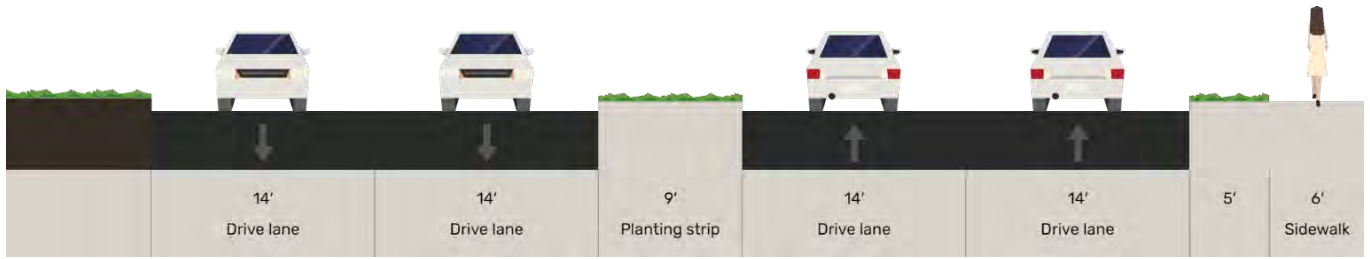
Herold Road to Cedar Road (2 lanes in each direction with center median) Section 1



Herold Road to Cedar Road (2 lanes in each direction with center turn lane) Section 2



Herold Road to Cedar Road (sidewalk on one side) Section 3

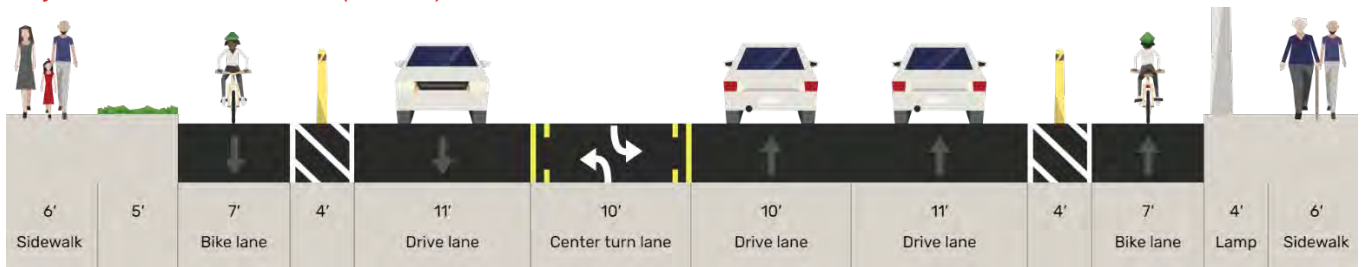


Proposed (One-way separated bike lanes)

Greyton Road to Mayfield Road (4 lanes)



Mayfield Road to Herold Rd (6 lanes)



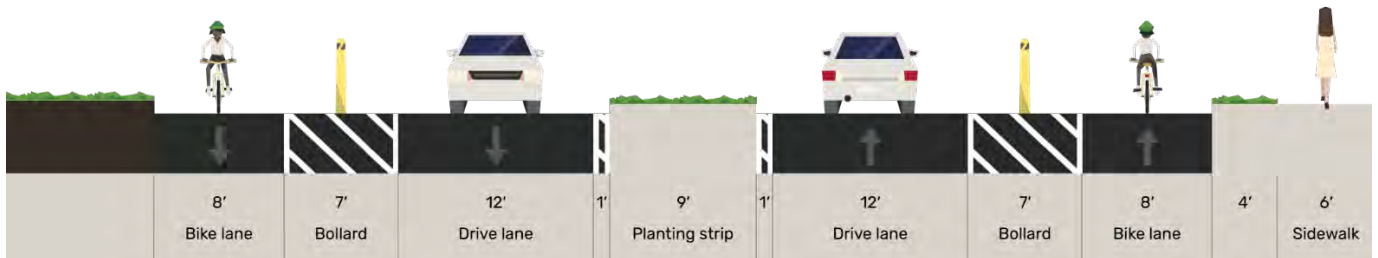
Herold Rd to Cedar Road (2 lanes in each direction with center median) Section 1



Herold Road to Cedar Road (2 lanes in each direction with center turn lane) Section 2



Herold Road to Cedar Road (sidewalk on one side) Section 3



Opinion of Probable Cost

The following page contains the Opinion of Probable Cost to add separated bike lanes to Warrensville Center Road/Noble Road from the northern boundary of Cleveland Heights (near Greyton Road) to Cedar Road. Adding a sidewalk between Herold Road and just north of Baynard Road on the west side of the road would require additional budget. The project team made the following assumptions:

- Existing grates on drainage inlets will be replaced with bike-safe grates. There will be no changes to the overall drainage patterns.
- At bus stops, raised platforms will be installed for pedestrians to cross from the sidewalk across the bike lane to the bus stop at grade.
- Intersections would need minor modifications, such as adjustments to signal head locations or detection, optimization of timings, and ensuring efficient traffic flow. No signal supports would be required to be replaced.
- Opinion of Probable Cost includes removal of existing roadway pavement markings and installation of new markings. If roadway pavement markings were completed in conjunction with resurfacing, these costs could be reduced or eliminated.

Warrensville-Noble Road		
Opinion of Probable Costs		
Description		Total Cost
Roadway Pavement Markings and Delineators		\$ 974,300.00
Bus Stops		\$ 960,000.00
Intersections		\$ 900,000.00
Bicycle Safe Grates (Drainage)		\$ 124,500.00
Construction Costs		\$ 2,958,800.00
Maintenance of Traffic	LS	\$ 100,000.00
Mobilization	LS	\$ 150,000.00
Public Utilities	LS	\$50,000
Construction Subtotal		\$ 3,258,800.00
Contingency	20%	\$ 651,760.00
Design	10%	\$ 391,060.00
Total Construction Costs (2024)		\$ 4,301,620.00
Total Construction Costs (2029)*		\$5,370,226.51
* Inflation costs calculated using the ODOT FY 2024-2028 Business Plan Inflation Calculator		
<p>Opinions of probable cost were developed by identifying major pay items and establishing rough quantities to determine a rough order of magnitude cost. Additional pay items have been assigned approximate lump sum prices based on a percentage of the anticipated construction cost. Planning-level cost opinions include a 20% contingency to cover items that are undefined or are typically unknown early in the planning phase of a project. Unit costs are based on 2024 dollars and were assigned based on historical cost data from ODOT. Cost opinions do not include easement and right-of-way acquisition; permitting, inspection, or construction management; engineering, surveying, geotechnical investigation, environmental documentation, special site remediation, escalation, or the cost for ongoing maintenance. A cost range has been assigned to certain general categories such as utility relocations; however, these costs can vary widely depending on the exact details and nature of the work. The overall cost opinions are intended to be general and used only for planning purposes. Toole Design Group, LLC makes no guarantees or warranties regarding the cost estimate herein. Construction costs will vary based on the ultimate project scope, actual site conditions and constraints, schedule, and economic conditions at the time of construction.</p>		

November 11, 2024

The Heights Regional Active Transportation Plan

Bluestone Road; Project #6

Bicycle Boulevard and Multi-Use Path Connection

Project Overview

Extents: Noble Road to Entrance of Euclid Creek Reservation

Mileage: Approx. .4 miles

PLANNING CONSIDERATIONS

Posted Speed Limit	25mph
Average Daily Traffic Count ¹	Unknown
Connectivity to existing/ future bikeways	Existing bicycle lane on Green Road Future separated bicycle lane on Noble Road and buffered bicycle lane on S Belvoir Boulevard
Major Barriers (constrained bridges or underpasses, freeway ramps)	Entrance to Euclid Creek Reservation is unclear
On-Street Parking	On-street parking permitted (south side in both cities)
Transit	No

The following tables summarize possible design elements that could be used to implement a bicycle boulevard along Bluestone Road (from Noble Road to S Green Road) along with shared lane markings and wayfinding. The Bluestone Road corridor includes a total of 17 intersections, comprising 4 major intersections and 13 minor intersections. Speed cushions and curb extensions are traffic calming feature, so they may not be necessary in every area of the project corridor, depending on the existing traffic speeds. The maximum operating speed on a bicycle boulevard is 25 mph, although 15 mph is the preferable speed (*ODOT Multimodal Design Guide*).

¹ <https://gis.dot.state.oh.us/tims/Map/ActiveTransportation>

Potential Bicycle Boulevard Elements for Major Intersections

	Quantity	Location
High-Visibility Crosswalks	10	Noble Road (1)
		Winston Road/Keystone Road (2)
		S Belvoir Road (4)
		S Green Rd (3)
Bicycle Detection and Pedestrian Signal Head	2	S Belvoir Road (2)
Crossing Islands and Medians	1	S Belvoir Road (1)
Rectangular Rapid Flashing Beacon (RRFB)	1	S Green Road (1)

Potential Bicycle Boulevard Elements for Minor Intersections

	Quantity	Location
High-Visibility Crosswalks	12	Pomona Road (1)
		Erievue Road (1)
		Sylvania Road (1)
		Hillstone Road (1)
		Clifford Road (1)
		Allston Road (1)
		Plainfield Road (1)
		Renfield Road (1)
		Avondale Road (1)
		Argonne Road (1)
		Chelston Road (1)
Curb Ramps	4	Glenside Ave (1)
		Pomona Road (2)
		Erievue Road (2)

Potential Corridor Bicycle Boulevard Elements

	Quantity	Location
Speed Cushions	10	Spaced 200-400 ft (<i>ODOT Multimodal Design Guide</i>)

Existing Roadway Conditions



Bluestone Road and Green Road Visualization



Bluestone Road and Green Road Visualization Labeling



November 11, 2024

The Heights Regional Active Transportation Plan

S Belvoir Blvd; Project #9

Buffered Bicycle Lane

Miramar Blvd/Felton Rd; Project #8

Bicycle Boulevard

Extents:

- S Belvoir Blvd from Bluestone Road to Southern boundary of University Heights (Fairmount Boulevard)
- Miramar Boulevard/Felton Road/Grantleigh Rd/Winston Rd from Bluestone Rd to southern boundary of University Heights (Fairmount Circle)

Mileage:

- S Belvoir Blvd: Approx. 3.4 miles
- Miramar Boulevard/Felton Road: Approx 3.3 miles

PLANNING CONSIDERATIONS – S Belvoir Blvd

Posted Speed Limit	35 mph
Average Daily Traffic Count ¹	Approx. 7,800-8,900
Connectivity to existing/ future bikeways	Future bicycle boulevards on Bluestone Rd, Ardmore Rd, Verona Road, Bayard Rd, Silsby Rd and Washington Boulevard Future multi-use path on Mayfield Rd Future separated bicycle lane on Cedar Road
Major Barriers (constrained bridges or underpasses, freeway ramps)	Large intersection crossing (S Belvoir Boulevard: Bayard Rd and Silsby)

¹ <https://gis.dot.state.oh.us/tims/Map/ActiveTransportation>

On-Street Parking	Yes; Lots of on-street parking near John Carroll (game day); verify where no parking signs have recently been installed
Transit	No

PLANNING CONSIDERATIONS – Miramar Boulevard

Posted Speed Limit	25mph
Average Daily Traffic Count ²	Unknown
Connectivity to existing/ future bikeways	Future bicycle boulevards on Verona Road, and Silsby Rd Future multi-use path on Mayfield Rd and Washington Boulevard Future separated bicycle lane on Cedar Road
Major Barriers (constrained bridges or underpasses, freeway ramps)	Mayfield – Unsignalized crossing of major roadway and off-set intersection
On-Street Parking	Yes, No parking on west side (verify)
Transit	No

² <https://gis.dot.state.oh.us/tims/Map/ActiveTransportation>

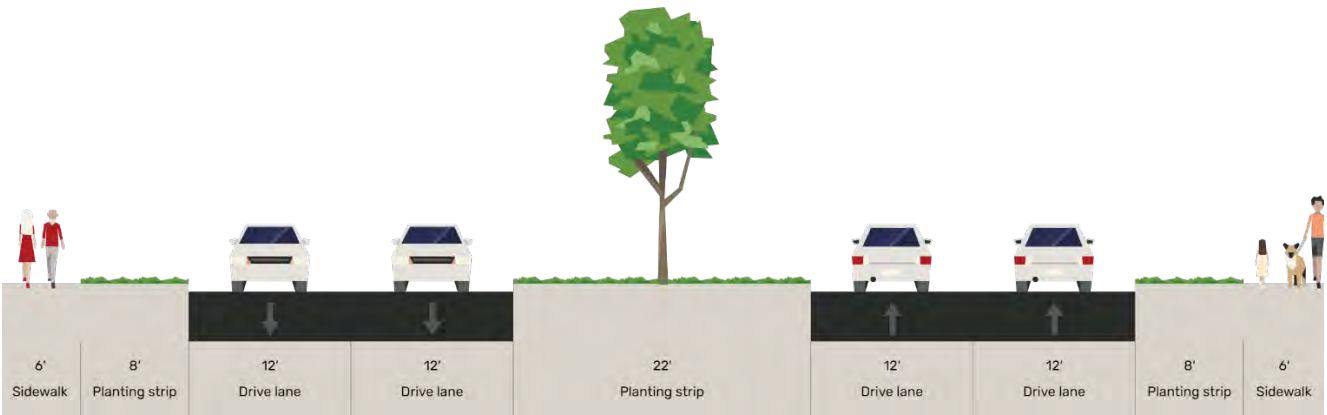
Belvoir Boulevard

Existing

Bluestone Rd to Cedar Rd



Cedar Rd to Washington Boulevard



Proposed

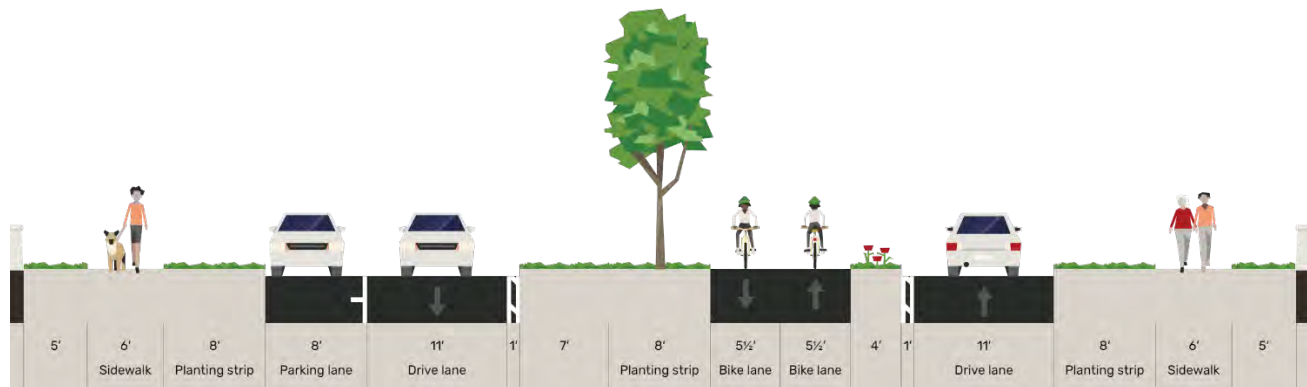
Bluestone Rd to Cedar Rd

Proposed Option A (One-way separated bicycle lanes)



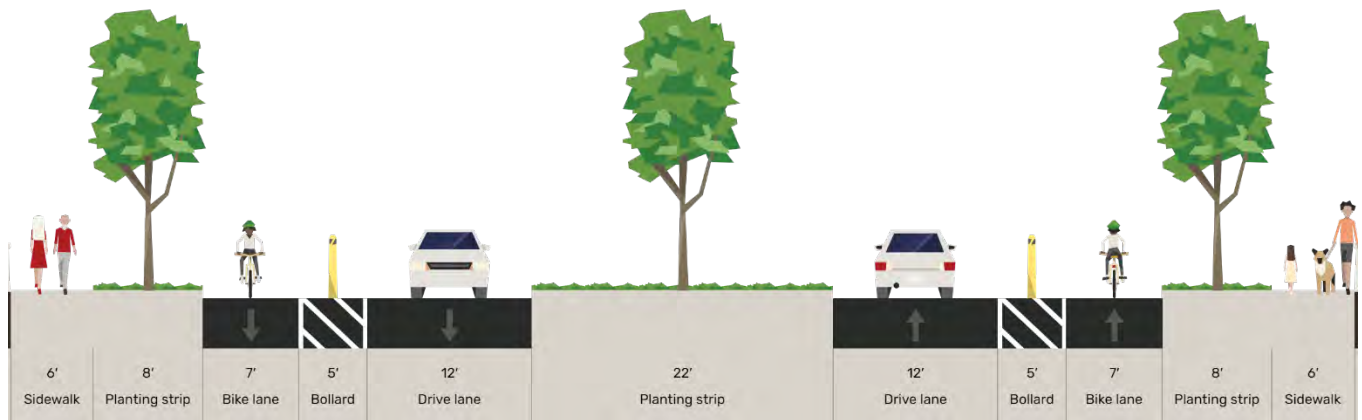
Proposed Option B (Two-way separated bicycle lane)

Note: This option would try to preserve median trees. Also, shared use path could split based on trees in median.



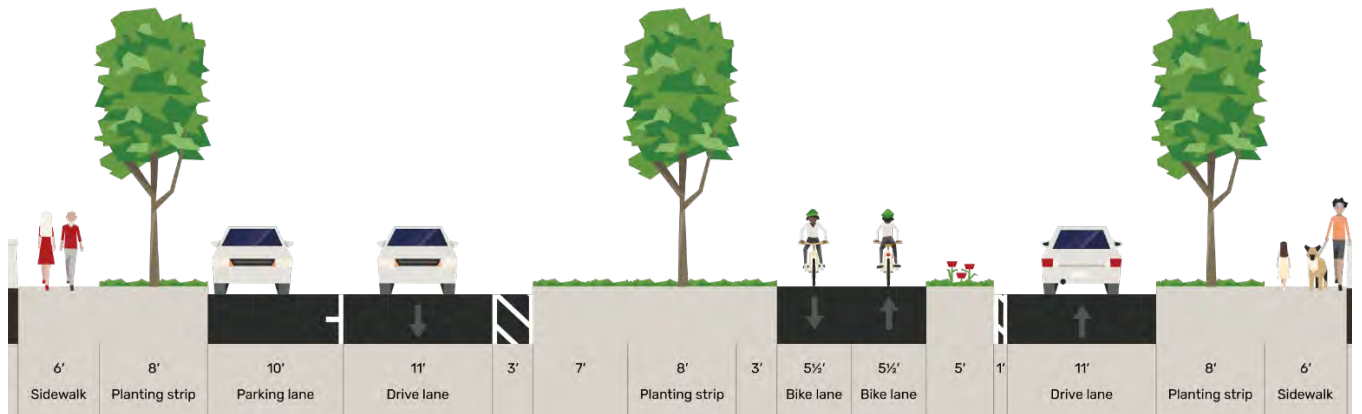
Cedar Rd to Washington Boulevard

Proposed Option A (One-way separated bicycle lanes)



Proposed Option B (Two-way separated bicycle lane)

Note: This option would try to preserve median trees



Washington Blvd to Fairmount Blvd

Existing curb extensions would need to be removed to extend bicycle facility, so recommend a shared lane with added curb extensions at Fairmount Boulevard. Miramar could also be an alternative parallel route for this segment.

Miramar Boulevard Potential Traffic Calming

The following table summarizes some possible design elements that could be used to implement a bicycle boulevard along Miramar Boulevard (from Fairmount Circle to Charlton Road), Felton Road (Charlton Road to Mayfield Road), Grantleigh Road/Winston Road (Mayfield Road to Bluestone Road). Speed cushions and curb extensions can also be traffic calming features but may not be necessary in every area of the project corridor, depending on the existing traffic speeds. The maximum operating speed on a bicycle boulevard is 25 mph, although 15 mph is the preferable speed (*ODOT Multimodal Design Guide*).

Potential Bicycle Boulevard Elements

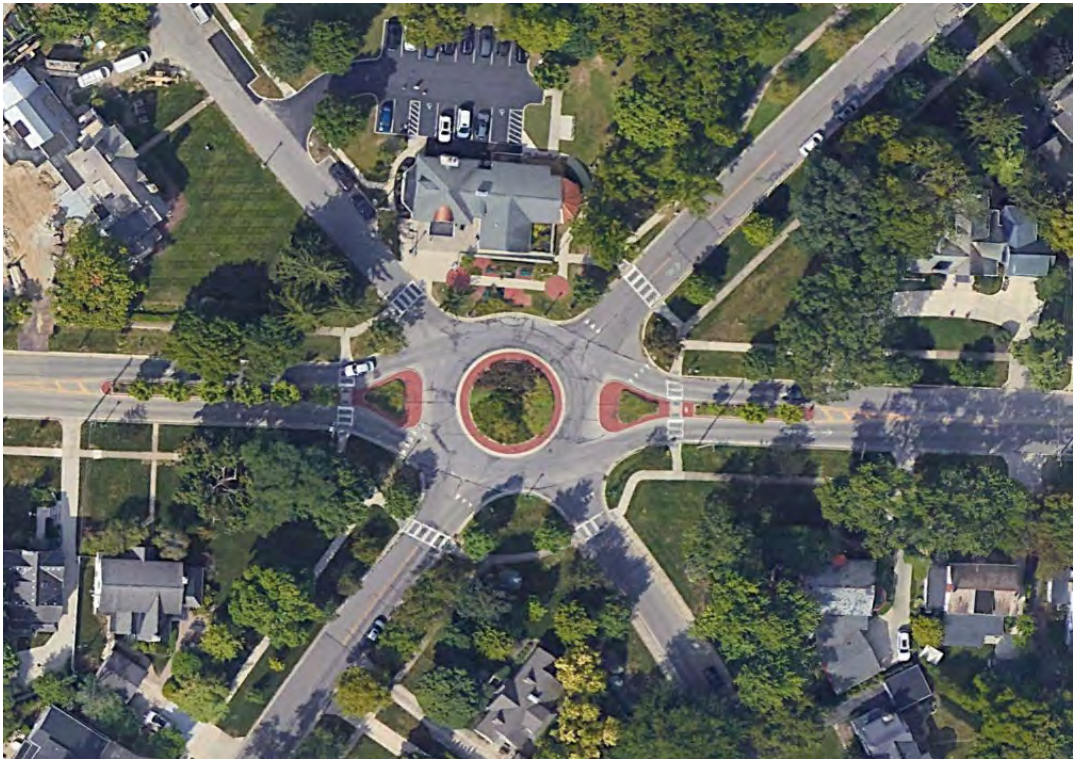
	Quantity	Location
High-Visibility Crosswalks	132	Elmwood Road (4)
		Ardmore Road (4)
		Charlton Road (4)
		Linnell Road (2)
		Bexley Boulevard (4)
		Lambert Road (4)
		Ellison Road (4)
		Harwood Road (4)
		Hinsdale Road (4)
		Bayard Road (4)
		Stonehaven Road (4)
		Wilmington Road (2)
		Stilmore Road (4)
		Vernona Road (4)
		Wyncote Road (4)
		Eastway (4)
		Colony Road (4)
		Okalona Road (4)
Curb Ramps	18	Grantleigh Road and Mayfield Road intersection (2)
		Charlton Road and Miramar Boulevard intersection (4)
		Bexley Boulevard and Miramar Boulevard intersection (4)
		Bayard Road and Miramar Boulevard intersection (4)
		Stonehaven Road and Miramar Boulevard intersection (4)

Crossing Islands and Medians	1	Off-set intersection of Grantleigh Rd and Felton Rd with Mayfield Rd
Rectangular Rapid Flashing Beacon (RRFB) or Pedestrian Hybrid Beacon (PHB)*	1	Off-set intersection of Grantleigh Rd and Felton Rd with Mayfield Rd* (1)

**PHB may be necessary based on volumes and speeds on Mayfield Rd.*

Complex Intersections

Some intersections along Belvoir Blvd and Miramar Blvd are complex with unique geometries and more than four legs. These intersections include Belvoir Blvd at Silsby Rd, Belvoir Blvd at Bayard Rd, and Miramar Blvd at Washington Blvd. These intersections could potentially be reconfigured using a roundabout to make them easier and safer to navigate, not just for bicyclists but all roadway users. An example six-legged intersection featuring a roundabout along Arlington Ave in Upper Arlington, Ohio, is pictured below.



A sketch of a roundabout at the intersection of Belvoir Blvd and Silsby Rd, showing one-way bicycle lanes on Belvoir Blvd, is pictured on the next page.



Offset Intersection

The intersection of the bicycle boulevard along Felton Rd and Grantleigh Rd with Mayfield Rd is offset and unsignalized, which would likely be challenging to cross for most bicyclists. A short section of shared-use path, a pedestrian refuge median island, and an enhanced crossing featuring a Rectangular Rapid Flashing Beacon (RRFB) or Pedestrian Hybrid Beacon (PHB), depending on traffic speeds and volumes, is recommended. A sketch of this configuration is included below.

