Ride & Stride 2050

ACTIVE TRANSPORTATION PLAN

Existing Conditions

Active Transportation Plan Technical Appendix

Prepared for:
MetroPlan Orlando

September 2023

OR22-0019.07

Ride & Stride 2050

ACTIVE TRANSPORTATION PLAN

Appendix A: Policy Assessment

Ride & Stride 2050
ACTIVE TRANSPORTATION PLAN

Memorandum

Date: March 28, 2023

To: Taylor Laurent, MetroPlan Orlando
Slade Downs, MetroPlan Orlando

From: Kathrin Tellez, Fehr & Peers
Elizabeth Suárez, Fehr & Peers

Subject: Active Transportation Plan Regional Policy Review

Introduction

To support the development of the MetroPlan Orlando Regional Active Transportation Plan (ATP): Ride & Stride 2050, a review of relevant plans and policies from the three Counties, 22 incorporated cities and the Florida Department of Transportation (FDOT) was conducted to flag potential barriers to plan implementation and identify policy guidance that could be incorporated into the ATP.

This review was conducted through the lens of the Active Transportation Plan's key objectives:

1. Improve transportation safety outcomes for vulnerable roadway users, including pedestrians, bicyclists, and other non-auto transportation system users.
2. Identify a regional active transportation network that complements other travel modes, especially transit, and supports future land use patterns.
3. Develop a feasible project list to incorporate in the 2050 Metropolitan Transportation Plan.

The purpose of the review is to identify existing and planned bicycling and pedestrian infrastructure to incorporate into the project mapping (completed) and to identify if there are potential policy conflicts or regional needs that could be addressed through the preparation of this plan, and to identify how the preparation of this Active Transportation Plan can support other statewide, regional, or local goals and policies.

Document Review

For each jurisdiction within the MetroPlan Orlando region, including the Florida Department of Transportation (Statewide and District 5), various documents were reviewed including:

- Transportation Elements of Comprehensive Plans
- Active Transportation Plans
- Transportation Safety Documents

Each of the various document elements that were reviewed are described below. **Table 1** provides a summary of key regional documents. A matrix with a high-level summary for all counties/cites/towns in the MetroPlan Orlando region is provided as **Attachment A**.

Standalone Active Transportation Plan (ATP)

This type of plan includes a large menu of policy, program, and practice suggestions, as well as site-specific (and prototypical) engineering treatment suggestions. Active Transportation Plans document a jurisdiction's vision for improving walkability, bikeability, and bicycle and pedestrian safety; establish policies, programs, and practices; and outline the prioritization and budgeting process for project implementation. Different organizations use different terminology for their plans (i.e., Multi-modal Plan, Bicycle and Pedestrian Plan). Standalone Active Transportation Plans are more common for larger communities and those with extensive plans, as the work that goes into preparing the plan can help communities obtain implementation funding. One benefit of having identified alignments and standards for new active transportation facilities is that as development occurs, it either provides an opportunity to incorporate new facilities within planned development or ensures that development does not preclude the provision of facilities in the future.

Active Transportation Element Incorporated into Comprehensive Plan

If a jurisdiction did not have a standalone ATP, we reviewed the Comprehensive Plan to determine if it had an Active Transportation Element or specific maps highlighting the existing and planned active transportation facilities. Active Transportation Elements typically provide objectives and policies that promote a multi-modal transportation network. Policies can be related to active transportation directly (i.e., policies promoting pedestrian and bicycle safety) or indirectly (i.e., policies related to land use). Incorporation of ATP elements within a Comprehensive Plan is typical of smaller communities and those without extensive network plans.

Comprehensive Plan Policies that Support Development of Active Transportation Facilities

If an agency did not have a standalone ATP or an Active Transportation Element incorporated into their Comprehensive Plan, we reviewed the Comprehensive Plan policies to determine if they support the development of an active transportation network.

LOS Exemptions when Meeting LOS Standards Conflicts with Safety or ATP Goals

Traditional vehicle-delay based Level of Service (LOS) policies can conflict with safety and ATP goals. Meeting peak hour roadway LOS standards may require widening a roadway or intersection, which increases pedestrian and bicyclist crossing exposure, and can encourage higher speed vehicle travel outside periods of congestion. Roadway widening can also use right-of-way that could have otherwise been allocated for other roadway users, can encourage higher levels of auto use over time, and create land use patterns not conducive to non-auto modes. We examined the member agencies' Comprehensive Plans to understand if the jurisdiction provides exemptions to meeting roadway LOS standards and if meeting the standard would conflict with a safety or ATP goal. Some jurisdictions allow for operations beyond the LOS standard for constrained corridors or along corridors that have been identified for walking or bicycling priority.

Bicycle Parking Requirement

Providing bicycle parking and showers/locker rooms encourages more people to commute via an active mode. Bicycle parking can also facilitate last-mile connections between two modes, such as bicycle parking at a transit station. To be effective, bicycle parking needs to be visible and secure, and have enough capacity to accommodate bicycle demand, both long-term and short-term. Especially during hot months, it is common to sweat when commuting via an active mode. Showers and locker facilities promote active commutes by providing users a place to change and take a shower. This column indicates whether an agency requires new developments to provide bicycle parking and/or shower/locker rooms. A few jurisdictions do not require shower/locker rooms but allow developers to reduce their vehicle parking if they provide shower/locker rooms.

Active Transportation Planner

Active Transportation Planners provide guidance for pedestrian/bicycle planning efforts and oversee implementation of programs and helps with capacity building of staff. Typically, only large jurisdictions have a dedicated Active Transportation Planner position; in some agencies, the functions of an Active Transportation Planner are provided by staff with other primary responsibilities. Only the City of Orlando has a dedicated Active Transportation Planner position.

Organization has a BPAC

Bicycle Pedestrian Advisory Committees (BPACs) serve as important sounding boards for new policies, programs, and practices. Responding to public concerns through public feedback mechanisms represents a more proactive and inclusive approach to bicycle and pedestrian safety compared to a conventional approach of reacting to crashes. BPACs are common in jurisdictions with a high demand for bicycling and pedestrian facilities.

Vision Zero Plan

Vision Zero is a strategy to eliminate crashes that result in severe injuries and fatalities. It considers traffic-related fatalities and serious injuries to not only be unacceptable but also preventable. The approach stresses the importance of involving everyone that is connected to the transportation system, from engineers and planners, to the user, to enforcement personnel and first responders. This is a strategy that has been adopted worldwide. In the MetroPlan Orlando region, people walking and bicycling are more likely to be involved in a traffic crash that results in a severe injury or fatality. Providing improved bicycling and walking infrastructure can help reduce these deaths and injuries on our roadways. Currently only the City of Orlando has an adopted Vision Zero Plan, although several local agencies have adopted Vision Zero resolutions. The Federal Highway Administration recently announced grant funding that would support the development of Vision Zero Action plans for all jurisdictions within the MetroPlan Orlando region, furthering the goals of the ATP.

Electric-Bike and Electric-Scooter Ordinances

Electric-bikes and electric-scooters (e-bikes and e-scooters) have become increasingly popular and controversial. E-bikes and e-scooters can provide opportunities to increase mobility for underserved communities and people with mobility impairments but can also create issues as e-devices can block the sidewalk and some users may not ride appropriately for the condition (i.e., too fast on a crowded sidewalk). We reviewed the member jurisdictions' municipal codes to understand the various regulations around e-bikes and e-scooters in the MetroPlan Orlando region. Most agencies in the region do not have specific ordinances regulating e-bikes and e-scooters.

ADA Transition Plan

Americans with Disability Act (ADA) Transition Plans identify gaps and issues in the City/ County's current ADA infrastructure, prioritize projects for implementation, and set forth the process for bringing public facilities into compliance with ADA regulations. Transition Plans typically cover a range of locations, such as public buildings, sidewalks, ramps, and other pedestrian facilities. Each County has their own ADA Transition Plan covering "unincorporated areas" within the county. The County Plans provide guidance to the Cities, but do not identify, prioritize, or implement projects within these areas. ADA deficiencies can be a barrier for those with mobility disabilities to navigate through our communities.

Table 1. State and Regional Plan Review Summary

Plans Reviewed	Summary of Plan Reviewed	Applicability to ATP
State – Florida Pedestrian and Bicycle Strategic Safety Plan, September 2021	The primary goal of this plan is to identify strategies that ultimately eliminate roadway fatalities and serious injuries for people walking and bicycling on our roadways. This plan also incorporates other statewide plans, including the Highway Safety Improvement Plan (HSIP), the Highway Safety Plan (HSP), the Strategic Highway Safety Plan (SHSP), and the Florida Transportation Plan (FTP). The goals of this document are centered around data, law enforcement, emergency response, legislation, roadway planning, design and operations, education and outreach, and vision zero.	The MetroPlan Orlando ATP will incorporate the applicable statewide goals and objectives, with a focus on improving transportation safety outcomes.
State – District 5 Bicycle and Pedestrian Master Plan	This plan was not completed, but a detailed existing conditions assessment and public outreach campaign was conducted.	Relevant existing conditions data and public feedback was reviewed for the MetroPlan Orlando region and incorporated into background reports as appropriate.
Orange County Comprehensive Plan, July 2022	As a part of the comprehensive plan, numerous policies related to transportation safety and strategies to create multimodal transportation networks are provided, including network and connectivity considerations. Level of service standards have also been established for walking and bicycling modes and maps of future facilities have been created. Note: A draft of the Vision 2050 Comprehensive Plan is available but has not yet been adopted. A review of goals and strategies related to active transportation indicate similar multimodal transportation goals related to network planning and safety such that adoption of the Vision 2050 Comprehensive Plan would not change the findings of this review.	The ATP would Incorporate the existing and planned county-wide facilities and potentially identify new regional facilities that would help Orange County achieve goals related to bicycle and pedestrian network and connectivity.

Plans Reviewed	Summary of Plan Reviewed	Applicability to ATP
Orange County Multimodal Corridor Plan Phase 1, June 2014	To further goals articulated in the Comprehensive Plan, Orange County has several focused initiatives designed to ensure roadways and other transportation facilities are in place or planned to serve motorists, bicyclists, transit riders, pedestrians, and freight transport, referred to as multimodal planning. Phase 1 of the Plan reviews policy and design aspects of Orange Counties current and future transportation network, including analysis of network safety, livability, technology, economy, and amenity functions and needs. Phase 2 of the Multimodal Corridor Plan presents a conceptual year 2040 multimodal network for Orange County, including modeling, cost estimates, and phasing. Phase 3 will identify specific multimodal corridors for implementation, including corridor transition, funding options, and future alternatives to transportation concurrency.	The ATP will incorporate any new facilities identified as part of the Phase 2 Multimodal Corridor Plan, when it becomes available. The goals and strategies of the ATP would support the development of a multimodal network within Orange County.
Osceola County Comprehensive Plan, December 2018	The Transportation Element of the Osceola County Comprehensive Plan moves away from the conventional roadway functional classification and introduces thoroughfare types to better balance mobility, livability, and commerce. The goal of the throughfare-type system is to create a transportation network that is 100 percent walkable. Various goals and policies related to transportation and land use are articulated to support these goals.	The ATP will help further these goals by identifying the regional Active Transportation system that can be constructed as a part of new development to connect to and support the local network.
Osceola County Pedestrian and Bicycle Facility Master Plan, 2019	This plan contains policies that are supportive of providing a regionally coordinated bicycle and pedestrian system through the provision of multimodal corridors, off-street trails, and appropriate crossing infrastructure. One of the plan goals is to establish meaningful bicycle and pedestrian level of service standards for comprehensive planning. Potential facilities were identified.	The ATP mapping of potential new regional facilities incorporates the Osceola County vision as a starting point for new facilities in Osceola County.

Plans Reviewed	Summary of Plan Reviewed	Applicability to ATP
Seminole County 2040 Transportation Plan, February 2018	The Seminole County 2040 Transportation Plan was developed based on several key considerations supportive of the ATP effort: • Expand multimodal transportation options • Improve safety for all transportation users, especially pedestrians and bicyclists Bicycle and pedestrian quality of service standards are also identified. Various goals and objectives are aimed to improve transportation safety outcomes and provide multimodal travel options.	The ATP will help further these goals by identifying the regional Active Transportation system that can be constructed as a part of new development and connected to non MPO roadway network to provide improved walking and bicycling accessibility to existing and future residents of Seminole County.
Seminole County Trails Master Plan, Draft September 2021	The draft 2021 Trails Master Plan identifies new planned trail facilities, including cost estimates and project prioritization.	The ATP mapping of potential new regional facilities incorporates the Seminole County vision as a starting point for new facilities proposed in Seminole County.
Local Plans - Details of the local plan review are provided in Attachment A.	All local plans were reviewed to consider strategies for developing a complete and connected walking and bicycling network that promotes walking and bicycling access and safety.	The ATP aims to link ideas from local plans and align with them in both incorporated and unincorporated areas; however, it is the responsibility of each jurisdiction to fully implement their respective plans.

Source: Various documents as available from agencies on their website or by request.

Conclusion

Overall, MetroPlan Orlando member jurisdictions have goals and policies that are supportive of providing active transportation facilities within the region. However, some potential barriers were identified that could hinder the implementation of the Active Transportation Plan: Ride & Stride 2050 equally throughout the region, including:

- Some communities with vehicle delay-based level of service policies that do not have exceptions for prioritizing bicycle and pedestrian travel along some corridors.
- Lack of supportive regulations that require new developments to provide bicycle parking and other design features that could promote higher levels of walking, bicycling and transit use over time.
- Insufficient staffing resources to implement projects identified within their jurisdiction.
- Land Development Codes that may miss opportunities to require new bicycle and pedestrian facilities to be constructed as part of development.
- Technology changes that are not considered in local planning documents, such as e-scooters and e-bikes.

To help overcome some of these barriers, there are opportunities as part of the plan development to provide policy language and development code templates that could be used as jurisdictions update various plans in the future. Some examples include:

- Example Level of Service Exemptions
- Level of Service Standards for Active Transportation Modes
- Bicycle Parking Standards
- E-Scooter and E-Bike Ordinances

Additionally, there may be a need to develop a technical assistance program to help some jurisdictions navigate project implementation, including identification of grant programs and coordinating with FDOT and other regional/local partners to implement projects.

Attachment A – Policy Review Matrix

Attachment A: Policy Review Matrix

Agency	County	Standalone ATP?	ATP Year	Agency Active Transportation Element Incorporated into Comprehensive Plan?	Policies that support development of Active Transportation Facilities	LOS Exemptions when meeting LOS Standards conflicts with Safety or ATP Goals	Bicycle Parking and/or Shower/ lockers Required for New Developments	Organization has a BPAC	Vision Zero Resolutions and Plans	ATP Position	E-Scooter and E-Bike Ordinance	ADA Transition Plan
Orange County	Orange County	Yes	2014	Standalone ATP provided and incorporated into Comprehensive Plan by reference.	Yes	No	Bicycle Parking - yes Showers/lockers - no	Pedestrian Safety Initiative	Adopted Resolution	No	Private E-bikes and e-scooters permitted on trails	Yes
Osceola County	Osceola County	Yes	2013	Standalone ATP provided and incorporated into Comprehensive Plan by reference.	Yes	No	No	No	Adopted Resolution	No	Third party and private e-bikes and e-scooters permitted	Yes
Seminole County	Seminole County	Yes	2021	Standalone ATP provided and incorporated into Comprehensive Plan by reference.	Yes	No	Bicycle Parking - yes Showers/lockers - no	No	No	No	Private e-bikes and e-scooters permitted	Yes
Apopka, City	Orange County	No	N/A	No	Yes	No	Bicycle Parking - yes Showers/lockers - option to reduce required vehicle parking	No	No	No	No related ordinances	No standalone plan, but guidance to the cities is provided in the County Plan.
Bay Lake, City	Orange County	No	N/A	No	No	No	No	No	No	No	No related ordinances	No standalone plan, but guidance to the cities is provided in the County Plan.
Belle Isle, City	Orange County	No	N/A	No	Yes	No	No	No	No	No	No related ordinances	No standalone plan, but guidance to the cities is provided in the County Plan.
Eatonville, Town	Orange County	No	N/A	No	Yes	No	No	No	No	No	No related ordinances	No standalone plan, but guidance to the cities is provided in the County Plan.
Edgewood, City	Orange County	No	N/A	Yes	Yes	Yes	Bicycle Parking - yes Showers/lockers - no	No	No	No	No related ordinances	No standalone plan, but guidance to the cities is provided in the County Plan.
Lake Buena Vista, City	Orange County	No	N/A	No	No	No	No	No	No	No	No related ordinances	No standalone plan, but guidance to the cities is provided in the County Plan.

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Agency	County	Standalone ATP?	ATP Year	Agency Active Transportation Element Incorporated into Comprehensive Plan?	Policies that support development of Active Transportation Facilities	LOS Exemptions when meeting LOS Standards conflicts with Safety or ATP Goals	Bicycle Parking and/or Shower/ lockers Required for New Developments	Organization has a BPAC	Vision Zero Resolutions and Plans	ATP Position	E-Scooter and E-Bike Ordinance	ADA Transition Plan
Maitland, City	Orange County	No	N/A	Yes	Yes	Guidance provided to prioritize multi-modal transportation and widen roadways as a last option.	Bicycle Parking - yes Showers/lockers - no	No	No	No	Private e-bikes and e-scooters permitted	No standalone plan, but guidance to the cities is provided in the County Plan.
Oakland, Town	Orange County	Yes	2017	Standalone ATP provided and incorporated into Comprehensive Plan by reference.	Yes	No	No	No	No	No	No related ordinances	No standalone plan, but guidance to the cities is provided in the County Plan.
Ocoee, City	Orange County	No	N/A	Yes	Yes	No	No	No	No	No	No related ordinances	No standalone plan, but guidance to the cities is provided in the County Plan.
Orlando, City	Orange County	Yes	2020	Standalone ATP provided and incorporated into Comprehensive Plan by reference.	Yes	No	Bicycle Parking - yes Showers/lockers - no	Maybe	Yes	Yes	Third party and private e-bikes and e-scooters permitted	Yes
Windermere, Town	Orange County	Yes	2015	Standalone ATP provided and incorporated into Comprehensive Plan by reference.	Yes	No	Bicycle Parking - yes Showers/lockers - no	No	No	No	No related ordinances	No standalone plan, but guidance to the cities is provided in the County Plan.
Winter Garden, City	Orange County	No	N/A	No	Yes	No	No	No	No	No	None	No standalone plan, but guidance to the cities is provided in the County Plan.
Winter Park, City	Orange County	Yes	2010	Standalone ATP provided and incorporated into Comprehensive Plan by reference.	Yes	Yes	Bicycle Parking - yes Showers/lockers - no	Yes	No	No	Permitted in some areas	No standalone plan, but guidance to the cities is provided in the County Plan.
Kissimmee, City	Osceola County	Yes	2010	Yes	Yes	No	Bicycle Parking - yes Showers/lockers - option to reduce required vehicle parking	No	No	No	Restricted in some areas	No standalone plan, but guidance to the cities is provided in the County Plan.

Attachment A: Policy Review Matrix

Agency	County	Standalone ATP?	ATP Year	Agency Active Transportation Element Incorporated into Comprehensive Plan?	Policies that support development of Active Transportation Facilities	LOS Exemptions when meeting LOS Standards conflicts with Safety or ATP Goals	Bicycle Parking and/or Shower/ lockers Required for New Developments	Organization has a BPAC	Vision Zero Resolutions and Plans	ATP Position	E-Scooter and E-Bike Ordinance	ADA Transition Plan
St. Cloud, City	Osceola County	No	N/A	No	Yes	No	Bicycle Parking - yes Showers/lockers - option to reduce required vehicle parking	No	No	No	No related ordinances	No standalone plan, but guidance to the cities is provided in the County Plan.
Altamonte Springs, City	Seminole County	No	N/A	Yes	Yes	Yes	Bicycle Parking - no Showers/Lockers - option to meet Mobility Performance Standards	No	No	No	No related ordinances	No standalone plan, but guidance to the cities is provided in the County Plan.
Casselberry, City	Seminole County	Yes	2019	Standalone ATP provided and incorporated into Comprehensive Plan by reference.	ATP	Yes	No	No	No	No	No related ordinances	Yes
Lake Mary, City	Seminole County	No	N/A	No	Yes	Yes	No	No	No	No	No related ordinances	Yes
Longwood, City	Seminole County	No	N/A	Yes	Yes	Yes	Bicycle Parking - yes Showers/lockers - yes, for large developments	No	No	No	No related ordinances	No standalone plan, but guidance to the cities is provided in the County Plan.
Oviedo, City	Seminole County	In Progress	In Progress	No	Yes	No	Bicycle Parking - yes Showers/lockers - no	No	No	No	Restricted in some areas	No standalone plan, but guidance to the cities is provided in the County Plan.
Sanford, City	Seminole County	No	N/A	No	Yes	Concurrency Exceptions	Bicycle Parking - TDM strategy Showers/lockers - TDM strategy	No	No	No	No related ordinances	No standalone plan, but guidance to the cities is provided in the County Plan.
Winter Springs, City	Seminole County	No	N/A	No	Yes	Concurrency Exceptions	No	Yes	No	No	No related ordinances	Yes

Source: Various documents as available from agencies on their website or by request.

Appendix B: Mode Share by City

Appendix B: Mode Share for Cities in MetroPlan Orlando Region

Travel Mode	Altamonte Springs	Apopka	Bay Lake	Belle Isle	Casselberry	Eatonville	Edgewood	Kissimmee	Lake Buena Vista	Lake Mary	Longwood	Maitland	Oakland	Ocoee	Orlando	Oviedo	St. Cloud	Sanford	Windermere	Winter Garden	Winter Park	Winter Springs
Drove alone	81%	79%	93%	75%	72%	79%	86%	75%	100%	73%	86%	78%	64%	72%	77%	78%	81%	81%	76%	80%	73%	81%
Carpooled	7%	11%	8%	9%	13%	11%	6%	18%	0%	9%	4%	4%	20%	11%	8%	7%	10%	8%	6%	9%	5%	7%
Public transportation (excluding taxicab)	1%	1%	0%	0%	2%	1%	1%	2%	0%	1%	0%	2%	0%	2%	3%	0%	1%	2%	0%	0%	1%	0%
Walked	2%	1%	0%	1%	1%	2%	1%	1%	0%	1%	0%	4%	1%	1%	2%	1%	1%	1%	0%	1%	3%	1%
Bicycle	0%	0%	0%	0%	1%	5%	0%	1%	0%	0%	0%	0%	0%	1%	1%	0%	0%	0%	0%	0%	1%	0%
Walk, Bike, Transit	3%	2%	0%	1%	4%	8%	1%	3%	0%	2%	1%	6%	2%	4%	5%	1%	2%	3%	0%	1%	4%	1%
Taxicab, motorcycle, or other means	2%	2%	0%	4%	2%	0%	1%	1%	0%	3%	1%	1%	0%	6%	3%	1%	1%	2%	2%	2%	1%	3%
Worked from home	8%	7%	0%	11%	9%	2%	7%	3%	0%	14%	9%	11%	15%	7%	7%	14%	6%	6%	16%	8%	16%	9%

Source: 2020 5 Year ACS; Fehr & Peers

Ride & Stride 2050

ACTIVE TRANSPORTATION PLAN

Appendix C: Level of Traffic Stress/Pedestrian Level of Comfort Methodology

Ride & Stride 2050

ACTIVE TRANSPORTATION PLAN

Memorandum

Date: March 28, 2023

To: Taylor Laurent, MetroPlan Orlando
Slade Downs, MetroPlan Orlando

From: Kathrin Tellez, Fehr & Peers

Subject: Active Transportation Plan LTS/PLOC

Introduction

To evaluate where new and enhanced walking and bicycling facilities could improve accessibility within the MetroPlan Orlando region, a Level of Traffic Stress (LTS) analysis was conducted to assess the comfort for people bicycling on roadways within the region and a Pedestrian Level of Comfort (PLOC) analysis was conducted to assess the comfort of people walking on the transportation system.

The purpose of this memorandum is to document the data inputs and approach based on feedback from MetroPlan Orlando staff and the Steering Committee. The LTS and PLOC analysis was conducted using data inputs contained in the xGeographic Wave database, which includes an aggregation of roadway, property, demographic, environmental and other disparate data into a unified geodatabase. The most recent version of the Wave database incorporates feedback from all municipalities within the MetroPlan Orlando region to better reflect their existing bicycling infrastructure. Once the LTS and PLOC analysis is completed, an accessibility assessment to document the accessibility of different land uses by a low stress bicycling and walking network will be conducted and used to help set targets for the Active Transportation Plan.

This memorandum is organized to provide an overview of the LTS and PLOC methodology, scoring system and key data inputs.

Methodology

Level of Traffic Stress (LTS) is a way to evaluate the stress a person bicycling might experience while riding on the road and pedestrian level of comfort (PLOC) is a means to evaluate the stress a person walking might feel. The primary difference between the LTS and the PLOC analyses is that the LTS analysis considers the type of bicycle facility present while the PLOC analysis considers the type of pedestrian infrastructure present. A high-level description of LTS / PLOC Scores are presented in **Table 1**, with a visual depiction shown on **Figure 1** for LTS and **Figure 2** for PLOC.

Table 1. LTS / PLOC Scores

LTS / PLOC Score	Description	Typical Facilities
LTS / PLOC 1	Facilities are suitable for all users, including children traveling alone, the elderly and people using a wheeled mobility device. People generally feel safe and comfortable using the facility and they are willing to use the facility.	Low vehicle volume, low speed roadways with sidewalks on both sides of the street. As traffic volumes and speeds increase, the addition of separation between the vehicle lanes and walking and bicycling facilities increases.
LTS / PLOC 2	All users are able to use the facility, and most are willing to use the facility.	Moderate vehicle volume, moderate speed roadways with sidewalks on both sides of the street. As traffic volumes and speeds increase, the addition of separation between the vehicle lanes and walking and bicycling facilities increases. In some instances, there may only be sidewalks on one side of the roadway but typically not active uses on that side of the roadway.
LTS / PLOC 3	Tolerable for trained and experienced bicyclists and some pedestrians. People may only use the facility when there are limited route and mode choices available.	Higher vehicle volume, higher speed roadways with sidewalks on both sides of the street. Limited separation exists between vehicle lanes and walking and bicycling facilities. In some instances, there may only be sidewalks on one side of the roadway.

LTS / PLOC Score	Description	Typical Facilities
LTS / PLOC 4	Uncomfortable for most people and a barrier to walking and bicycling for many. For people using a wheeled mobility device, such as a wheelchair, the facility may be impassible. People may only use the facility when there are limited route and mode choices available.	Multilane roadways with high speed/high volume vehicle travel typically without facilities for bicycling. Sidewalks may be present, but typically with no separation between sidewalk and travel lane. Bicycle facilities may be present, but with no separation from the adjacent travel lane.
PLOC 5	No pedestrian facilities present. For people using a wheeled mobility device, such as a wheelchair, the facility is impassible. There may be an unimproved area where people can walk, but people typically only use the facility when there are limited route and mode choices available.	Roadways without sidewalks on both sides of the street (excludes limited access facilities where non-motorized vehicles are not permitted).

Notes: Adapted from the research conducted by the Mineta Transportation Institute

Level of Traffic Stress and Pedestrian Level of Comfort ratings should not be construed as a predictor of facility use by people walking and bicycling. Area demographics and land uses along a corridor are better predictors of the level of walking and bicycling that does and could occur. For example, in a low-density area where land uses are spread apart and most people have access to a vehicle, people may walk or bicycle for recreational purposes in the area, but not as a primary mode of travel. Conversely, in an area where complementary uses are within close proximity and people have less access to vehicles, walking and bicycling activity is typically higher, even when low stress facilities are not available.

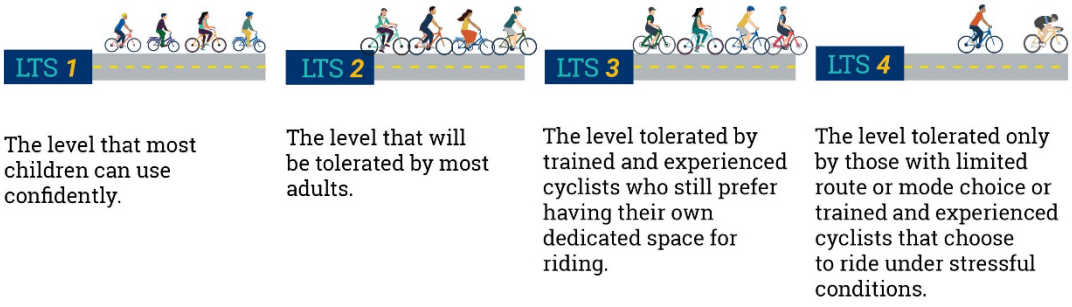


Figure 1: Visual Depiction of LTS

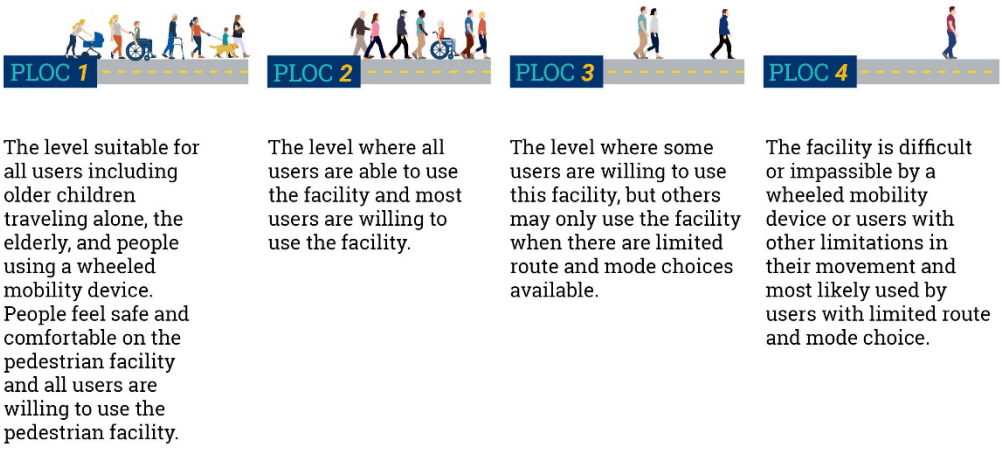


Figure 2: Visual Depiction of PLOC

Figure 3 provides a flowchart of the LTS methodology for roadways with bicycle facilities and **Figure 4** provides a flowchart of the LTS methodology for roadways without bicycle facilities. **Table 2** provides the scoring criteria for the PLOC calculations.

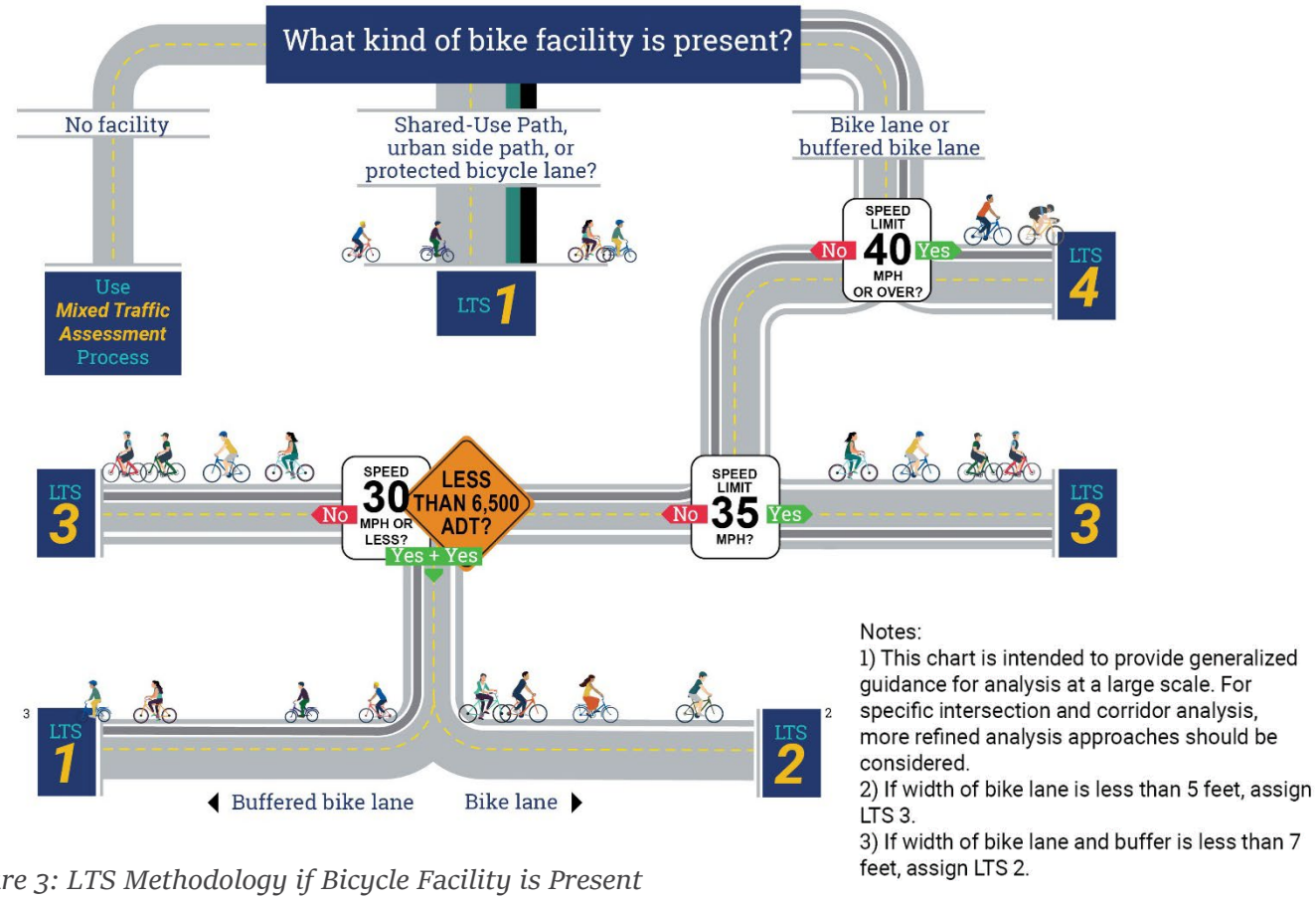


Figure 3: LTS Methodology if Bicycle Facility is Present

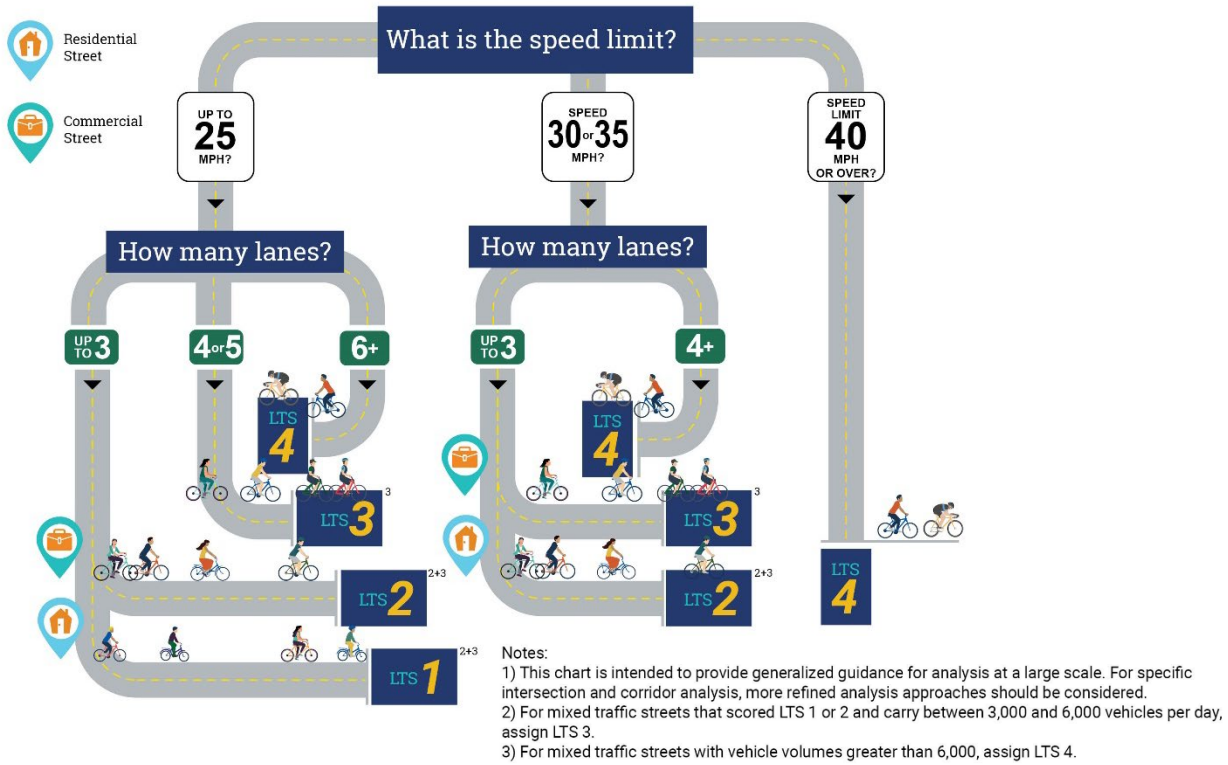


Figure 4: LTS Methodology if No Bicycle Facility is Present

Table 2. Pedestrian Level of Comfort Matrix

Sidewalk Separation	AADT	Posted Speed (mph)	Sidewalk Coverage						
			Both sides of the roadway			One side of the roadway			No sidewalk
			Number of Through-Lanes						
			<4	4-5	6+	<4	4-5	6+	2+
High Separation (distance from curb or edge of pavement to sidewalk is 7+ feet on both sides of roadway; separation elements could include bicycle lane, landscape strip or paved shoulder)	Low	25	1	1	2	2	2	3	5
		30-35	1	1	2	2	2	3	5
		40+	2	2	2	2	2	3	5
	Moderate	25	1	1	2	2	2	3	5
		30-35	1	1	2	2	2	3	5
		40+	2	2	2	2	2	3	5
	High	25	1	2	2	2	2	3	5
		30-35	2	2	2	2	3	3	5
		40+	2	2	2	3	3	3	5
Moderate Separation (distance from curb or edge of pavement to sidewalk is 3 to 6 feet on both sides of roadway; separation elements could include bicycle lane, landscape strip or paved shoulder)	Low	25	1	1	2	2	2	3	5
		30-35	1	1	2	2	2	3	5
		40+	2	2	3	3	3	4	5
	Moderate	25	1	1	2	2	2	3	5
		30-35	1	1	3	2	3	3	5
		40+	2	2	3	3	3	4	5
	High	25	1	2	2	2	3	3	5
		30-35	2	2	3	3	3	3	5
		40+	3	3	3	3	3	4	5
Low Separation (distance from curb or edge of pavement to sidewalk is 0-2 ft)	Low	25	1	1	2	2	2	3	5
		30-35	2	3	3	3	3	3	5
		40+	3	3	4	3	3	4	5
	Moderate	25	1	2	2	2	2	3	5
		30-35	2	3	3	3	3	3	5
		40+	3	4	4	4	4	4	5
	High	25	2	2	2	3	3	3	5
		30-35	3	3	3	3	3	4	5
		40+	4	4	4	4	4	4	5

Notes: AADT = Average Annual Daily Traffic

Low = < 10,000 vehicles per day

Moderate = 10,000 to 19,999 vehicles per day

High = over 20,000 vehicles per day

Speed Data

For both the LTS and PLOC analysis, two sets of speed data were used. One analysis was conducted using the posted speed limit for each roadway. The second was conducted using the 85th percentile speed as measured regionally through connected vehicle data. While the connected vehicle data only provides a sample of speeds along the corridor, it has been shown to be a good general representation of the speeds people are driving on roadways within the MetroPlan Orlando region. For most roadways, the LTS/PLOC results do not change between the two speed data sets, but for some roadways, especially those that have a posted speed limit of 35 to 40 miles per hour, the actual travel speed based on the connected vehicle data is closer to 45 to 50 miles per hour, resulting in more LTS / PLOC 4 facilities.

For the purposes of the LTS and PLOC analyses, the posted speed limit was used. Based on the initial results, potential strategies to enforce existing posted speed limits and identify opportunities to reduce the posted speed will be explored during the bicycle and pedestrian system planning phases of the Active Transportation Plan to improve the LTS and PLOC ratings, respectively.

FDOT Quality of Service Handbook – January 2023

The Florida Department of Transportation published an updated Quality of Service Handbook in January 2023 after an initial LTS analysis had been completed using the approach outlined in our January 27, 2023 technical memorandum. Based on the results of the initial analysis and feedback from MetroPlan Orlando staff, some changes were made to better incorporate the FDOT guidance while providing an approach that can be conducted at the regional level based on available data, which is reflected in the methodology which has been outlined in this document.

Next Steps

The final LTS and PLOC analyses incorporate feedback from MetroPlan Orlando staff and the Steering Committee. These results will be used as the basis for the accessibility analysis that will be used to help identify the location of new and modified walking and biking facilities as well as other systemwide strategies that can improve the comfort for people walking and bicycling in the region.

Ride & Stride 2050

ACTIVE TRANSPORTATION PLAN

Appendix D: Accessibility Analysis Methodology

Ride & Stride 2050

ACTIVE TRANSPORTATION PLAN

Draft Memorandum

Date: July 6, 2023

To: Taylor Laurent, MetroPlan Orlando
Slade Downs, MetroPlan Orlando

From: Kathrin Tellez and Stephen Spana, Fehr & Peers

Subject: Active Transportation Plan Accessibility Analysis Overview

Introduction

As a part of the MetroPlan Orlando Active Transportation Plan, a travel access analysis was conducted to identify locations in the region that have a high level of access to a variety of destinations via low stress walking and bicycling facilities, and parts of the region that may have high levels of access, but only on high-stress facilities.

Based on feedback from the public as well as the steering committee, the travel access analysis considered how accessible a variety of key destinations are from the surrounding area, with the following destination types considered locations where travel access should be prioritized:

- Public Schools
- Transit Facilities, such as LYNX stops and SunRail stations
- Parks, including neighborhood parks and regional parks
- Jobs, based on the location of businesses in the xGeographic Wave database
- Shopping, including grocery stores

The distance that an average person might be able to bicycle within different time periods was based on an average biking speed of 10 miles per hour, meaning that it would take an average person about 30 minutes to travel 5-miles on their bicycle. For walking access, an average walking speed of 3 miles per hour was used. Some people may bike or walk faster or slower than the averages, with these speeds selected for planning purposes. For each destination type, the areas that are reachable within 1-5 minutes, 6-15 minutes, and 16-30 minutes were assessed. It was assumed that sidewalk gaps were a barrier for walking trips.

Bike trips, however, were allowed to traverse any road with or without bike facilities (since bicyclists could presumably share the road with vehicles).

Analysis Inputs

Inputs to the analysis include network features and points of interest with the data sources for each provided below.

Network

- Bike: Federal Aid roadway network for Orange, Osceola, Seminole counties (minus limited access facilities); Existing shared-use paths, side paths, and cycle tracks
    - Planned shared-use paths, side paths, and cycle tracks were added to the future scenario
- Pedestrian: Federal Aid roadway network for Orange, Osceola, Seminole counties (minus limited access facilities and facilities with no sidewalks); Existing shared-use paths and side paths
    - Planned shared-use paths and side paths were added to the future scenario

Points of Interest (POIs)

- Schools (Elementary, Middle, High) – Wave
- Transit stops – bus stops from LYNX GTFS, SunRail stations form Wave
- Park centroids – Wave
- Shopping – Supermarkets (e.g. Publix, Winn Dixie, Walmart) and Markets (e.g. Dollar General, gas stations) from Wave
- Jobs – TAZ centroids from CFRPM7 model

Travel Sheds

Travel sheds for each point of interest type and each travel mode were developed using ArcGIS Pro, assuming a 10 mile per hour (mph) travel speed for bikes and 3 mph travel speed for pedestrians. Travel sheds were generated for 5-, 15-, and 30-minute travel times. Within each travel shed, an accessibility score was then developed:

- For each mode and POI, assign accessibility score to each travel shed
    - 0-5 minute sheds: Accessibility Score 3
    - 6-15 minute sheds: Accessibility Score 2
    - 16-30 minute sheds: Accessibility Score 1
- For Jobs POI only –number of jobs within each TAZ had to be represented differently
    - Multiply accessibility score by total TAZ employment to create weighted accessibility score. For example, a TAZ with 100 total jobs would be scored as follows:
        - 0–5-minute sheds: Accessibility Score 300
        - 6–15-minute sheds: Accessibility Score 200
        - 16–30-minute sheds: Accessibility Score 100

Joining accessibility scores to the network

For each travel mode and POI, the accessibility score for each travel shed was summed over each road segment in the network. This resulted in every road segment having an accessibility score associated with it. For example, for the shopping POI type using the pedestrian network, if there are 3 5-minute sheds, 6 15-minute sheds, 10 30-minute sheds overlapping a single roadway segment, the segment accessibility score would be:

Segment accessibility score (shopping, ped network) = 3*(5) + 6*(2) + 10*(1) = 37

Accessibility Score

To calculate an accessibility score for each roadway segment, the scores were normalized and combined. Specifically, for each mode the segment accessibility score for each POI was scaled to a value between 0 or 1, assuming all POI types are equally as important.

The total accessibility score was then calculated for each road segment for walking and bicycling modes as follows:

- Sum the normalized accessibility scores for all POI types to create a total accessibility score (which will be between 0 and 5). Example for road segment in ped network:
    - Normalized shopping accessibility score: 0.6
    - Normalized transit accessibility score: 0.8
    - Normalized job accessibility score: 0.2
    - Normalized school accessibility score: 0.1
    - Normalized park accessibility score: 0.1
    - Total road segment accessibility score (ped): 0.6 + 0.8 + 0.2 + 0.1 + 0.1 = 1.8

Incorporation of LTS/ PLOC

To account for the comfort of walking and bicycle facilities provided, the underlying Level of Traffic Stress (LTS) and Pedestrian Level of Comfort (PLOC) ratings were factored into the results. Based on the stress of the routes, a score was assigned to assess the overall comfort of walking and biking to various destinations within the region. High LTS/PLOC was defined as LTS/PLOC greater than 2, and Low LTS/PLOC was defined as less than or equal to 2. Areas that are either inaccessible or only accessible via high stress networks received a lower score than areas that are accessible via lower stress networks. High/Low access

thresholds were determined by the distribution of total road segment accessibility scores for each mode. Roadways were rated with one of four scores:

- *Low LTS/PLOC and High Access* - these are roadways where there are many destinations within the travel buffers (above average access score), and the route is comfortable (average LTS/PLOC score of 2 or better).

- *Low LTS/PLOC and Low Access* - these are roadways where there are not that many destinations within the travel buffers (lower than average access score), but the route is comfortable (average LTS/PLOC score of 2 or better).

- *High LTS/PLOC and Low Access* - these are roadways where there are not that many destinations within the travel buffers (lower than average access score), and the route is uncomfortable (average LTS/PLOC score greater than 2).

- *High LTS/PLOC and High Access* – these are roadways where there are many destinations within the travel buffers (above average access score), but the route is uncomfortable (average LTS/PLOC score greater than 2).

The results are presented in the Existing Conditions report for the existing and planned future Active Transportation system.

Ride & Stride 2050

ACTIVE TRANSPORTATION PLAN

Appendix E: First Round Public Engagement Summary

Ride & Stride 2050

ACTIVE TRANSPORTATION PLAN

Draft Memorandum

Date: May 25, 2023

To: Taylor Laurent, MetroPlan Orlando
Slade Downs, MetroPlan Orlando

From: Kathrin Tellez, Fehr & Peers
Elizabeth Suárez, Fehr & Peers

Subject: Active Transportation Plan Public Engagement Summary

Introduction

Community outreach and engagement is a critical component of the MetroPlan Orlando Regional Active Transportation Plan (ATP): Ride & Stride 2050 for both informing the public and key stakeholders about the effort and for soliciting their feedback. This memorandum summarizes feedback received from the public during the first round of community engagement, which occurred between February 1st and March 21st, 2023.

The engagement materials were hosted on an online platform called Social Pinpoint, which people could access through the MetroPlan Orlando project website (https://metroplanorlando.org/atp). The goal of the engagement was to understand the barriers to walking and biking that community members face, what their values and interests are related to walking and biking, and what kind of projects they would like to see implemented to make it easier for them to walk and bike to key destinations. The outreach was comprised of two components, a survey and a comment map. An option for people to call or email feedback was also available for people who do not have access to the internet or do not feel comfortable using it. Because Spanish is the most prevalent language in the region after English, all outreach materials were provided in both English and Spanish.

Targeted online outreach was conducted via Facebook and Instagram, with a sample outreach ad shown on **Figure 1**. MetroPlan Orlando public information staff sent information to the general MetroPlan Orlando mailing list. Information was also shared through the various MetroPlan Orlando committees and boards, and the project Steering Committee also shared the opportunity to provide project feedback through their networks. MetroPlan

Orlando staff also participated in the Healthy West Orange Take Over the Trails Day on February 17, 2023, to promote the project, answer questions and provide links to the survey and comment map.

Between the survey and comment map, approximately 371 people participated. The following sections provide summaries of the feedback received from the survey and comment map.

Figure 1: Sample Outreach Ad

Survey Results

The survey consisted of six key questions related to where people currently walk and bike and where they would like to walk and bike, as well as what types of improvements could be made to increase their comfort level when walking and bicycling on our transportation system. Each question is provided below with a summary of responses.

There were 336 people who took the survey, of which 4 people took the survey in Spanish. Not every person answered each question.

The survey asked community members what the most important land uses are to connect to with safe walking paths/sidewalks and, in a separate question, with biking facilities. Respondents were able to select from the following land uses, including an open response option, and asked them to provide a score from one to ten, with one being the lowest, to each category:

- Jobs
- Schools
- Shopping Centers, including grocery stores
- Medical centers
- Transit facilities (bus stops or SunRail stations)
- Recreational facilities (park, trail, neighborhood center)
- Other (open response)

Of the land uses provided, survey respondents thought it was most important to provide safe walking and biking facilities to schools, with recreational facilities and transit facilities being a close second. Although respondents indicated that providing walking and biking access to medical facilities was the least important of the given land uses, more than half indicated it was an important destination for people walking and biking. Respondents ranked the ability to bike to jobs higher than the ability to walk to jobs, presumably given the distance most people live from their place of employment.

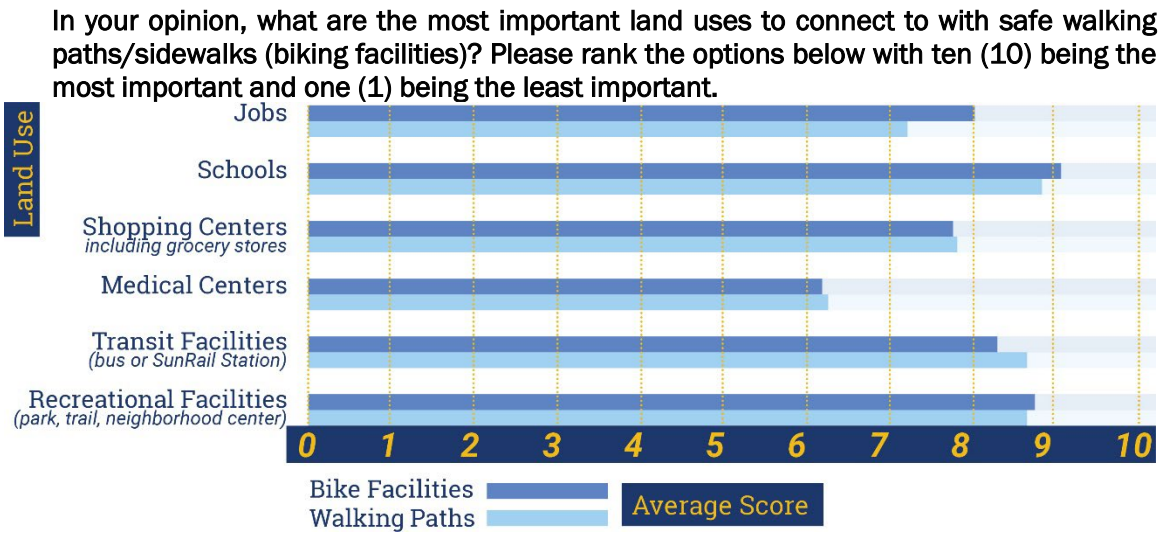


Figure 2: Walking and Biking Connections Preferences

In response to what other places people think should be connected to walking or biking facilities, the most common answers were:

- Churches and religious facilities
- Neighborhoods, particularly a desire to walk to a friend's house
- Community centers
- Sports arenas and event venues
- Local businesses (coffee shops, restaurants/bars, local shops, gyms etc.)

The next question asked where people are **currently walking and biking.** We asked them if they currently walk or bike to the following places:

- Work
- School – alone
- School – with children
- Medical centers
- Shopping Centers, including grocery stores
- Recreational facilities (park, trail, neighborhood center)
- Transit facilities (bus stops or SunRail stations)
- Walk for fun/exercise with no specific destination
- Other (open response)

Around 90 percent of survey respondents walk or bike for fun or exercise, with no specific destination. If going somewhere specific, most participants walk or bike to recreational facilities. The second most popular destination is shopping centers/grocery stores. For most of the destinations noted in the survey, similar numbers of people tend to walk or bike, except for employment uses. About 22 percent of respondents said they bike to work, and only 6 percent said they walk to work.

Do you currently walk or bike to the following places? Please rank the options below with ten (10) being the most important and one (1) being the least important.

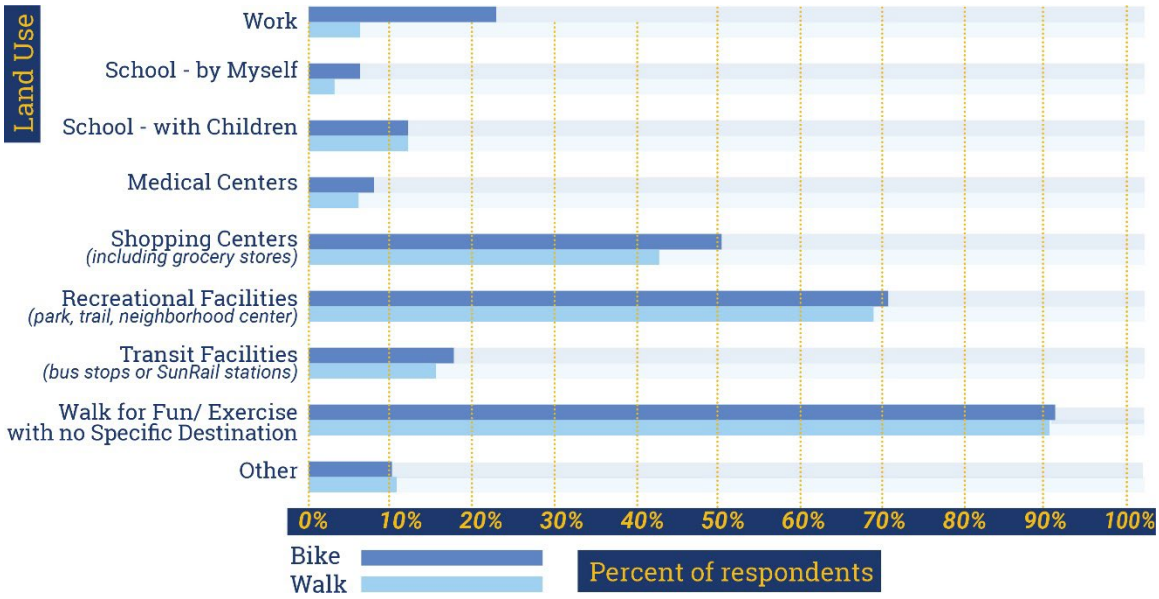


Figure 3: Walking and Bicycling Destinations

A review of the survey responses comparing the responses about where people think they should be able to walk and bike versus where they actually walk and bike shows that if safer walking and bicycling facilities were provided, more people might walk and bike places if the destination is within a reasonable distance from their origin, such as schools and transit facilities.

Next, we asked users what improvements would make it easier for them to walk or bike to the destinations discussed in the previous questions.

Below is a list of improvements that respondents said would make it easier for them to walk to desired destinations:

- Wide, continuous, shaded, buffered, unobstructed sidewalks
- Better sidewalk maintenance
- More and enhanced crosswalks
- Pedestrian bridges/underpasses at large intersections
- Traffic calming
- Better lighting
- Having more destinations within walking distance
- More reliable transit
- Enforcement of reckless driving

The following is a list of improvements that respondents said would make it easier for them to bike to desired destinations:

- Wider sidewalks to accommodate bikes

- Separation between bicyclists and pedestrians
- More and wider bike lanes
- Protected bike lanes, particularly on wide, fast roads
- Better maintenance – clear of debris and vegetation
- Smooth facilities, including adding concrete bike lanes on brick streets
- Better intersection crossings, including signal priority, shorter cycle lengths, bicycle detection, and pavement markings
- Bike paths
- Better connectivity, including continuous bike lanes
- More connections to transit
- More secured bike parking
- Lighting along routes including trails
- Signs warning drivers to look for bikes
- Improved wayfinding
- More shade
- Fewer vehicle lanes in residential areas
- Housing built near destinations
- Lower speed limits and traffic calming measures
- More enforcement of reckless driving
- Routine driver education

Then, we wanted to understand what types of bicycle facilities people feel comfortable using. We showed users images of different facility types and asked them to select the ones they would feel comfortable riding on. The results are shown on Figure 4. Most respondents were comfortable riding on a roadway with a protected bike lane (including vertical separation) and trails. The facilities respondents were least comfortable riding on were roadways without any dedicated bicycle facility. These results confirm feedback from other local engagement efforts and national research, in that that there is a public preference for bicycling facilities that have a physical separation from vehicle traffic.

Figure 3: Visual Preference Survey Results

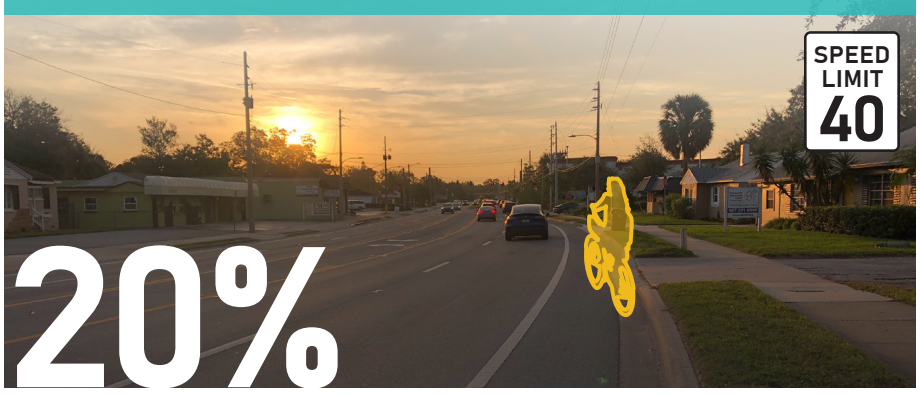
Two-Lane Roads with No Bike Lanes

Roads with Shared Lane Markings *("sharrows")*

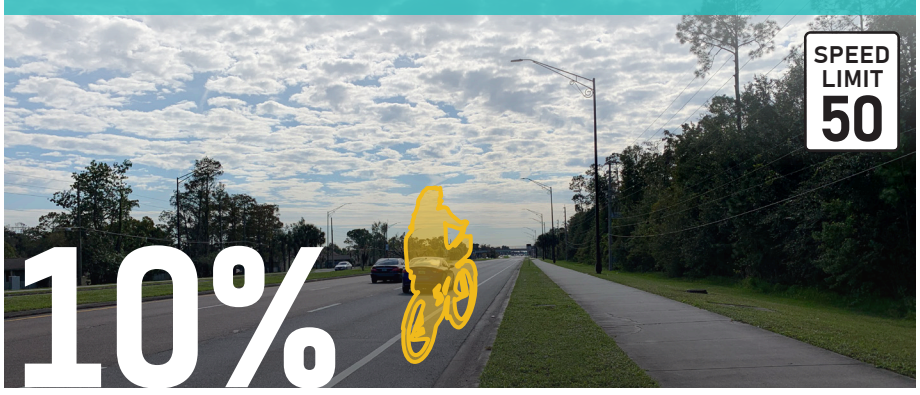
Two-Lane Roads with Bike Lanes

Four-Lane Roads with Bike Lanes

Four-Lane Roads with Bike Lanes



Six-Lane Roads with Bike Lanes

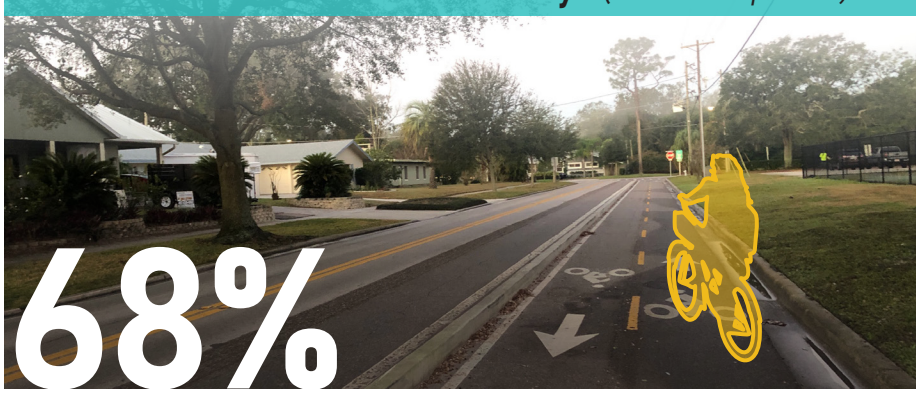


Roads with Buffered Bike Lanes *(narrow buffer)*

Roads with Buffered Bike Lanes *(wide buffer)*

Roads with Protected Bikeways *(vertical protection)*

Roads with Protected Bikeways *(concrete separator)*



Roads with Side Paths

Trails / Shared-Use Biking & Walking Paths

At the end of the survey, we asked participants to provide additional comments. Below is a summary of some of the general themes from those who provided further feedback.

- Maintain continuity of bicycle facilities
- Don't implement sharrows
- Don't provide unprotected bike lanes on large roads
- Look to the Europeans for inspiration
- Provide bicyclist education
- Provide vertical separation between bike lanes and travel lanes
- Implement new land use policies to encourage bike/ped/transit friendly development
- Start with temporary materials if permanent materials are too expensive
- Provide walking and biking education in schools
- Freight loading and unloading should be prohibited during the morning and evening commute hours
- Use asphalt instead of jointed concrete for facilities where bikes are supposed to ride
- Buses should have more than two bike racks
- Provide clearer regulations around electric bikes and scooters

Although the Active Transportation Plan is focused on bicycle and pedestrian facilities, there were several comments related to improving transit in the region. Below is a summary of the transit-related comments:

- Bus reliability needs to be improved
- Buses need to operate at a higher frequency
- Some of the bus lines need to be rerouted to create more efficient routes
- High speed rail is needed
- Buses should have dedicated lanes
- SunRail should operate 24 hours a day, 7 days a week
- Buses should have room for more than two bikes

Comment Map

Geographic Information

The comment map provided an online map of the existing and planned bicycle facilities in the MetroPlan Orlando region and allowed users to leave comments. There were four pre-set options for comment types, each of which gave the user the possibility to write in a comment. The map was in English and Spanish although no map comments in Spanish were provided. The four options were:

- Great facility
- Currently unsafe
- Facilities needed
- Additional comments

About 83 percent of the comments 240 were placed in Orange County. Osceola and Seminole Counties received a similar number of comments. Based on population, responses from Orange County (62 percent of population and about 83 percent of responses) are disproportionately higher than both Osceola (16 percent of population and about 9 percent of responses) and Seminole (21 percent of population and about 9 percent of responses) Counties. This was noted throughout the public engagement period and additional outreach was conducted to the Public Information Officers with each jurisdiction in Osceola and Seminole Counties to further promote the project.

Of the total responses, about 75 percent of the comments related to a facility not feeling safe or that a facility was needed. Approximately 13 percent of comments noted that a facility was great (**Table 1**). The remainder of comments were related to a wide range of topics, mostly related to maintenance, such as potholes and faded paint, and driver behavior, such as failure to yield at marked crosswalks. **Figure 5** displays the geographic distribution of the comments.

The location of comments was also compared against the Level of Traffic Stress (LTS) analysis results to see if there was a relationship between the public's perception of facilities and their calculated stress level based on the number of travel lanes, vehicle volumes, vehicle speeds and roadway characteristics (please see technical memorandum that describes the LTS analysis methodology dated March 28, 2023). As shown in **Table 2,** approximately half of the comments related to the safety of a facility are within 250 feet of an LTS 3 or 4 facility, which is generally a higher stress facility, and a disproportionate number of the overall comments related to safety are within 250 feet of a LTS 3 or 4 facility.

Finally, general themes, such as speeding, were compared geographically (**Table 3**). Top themes in the comments include: speeding, lighting, visibility, roadway condition, and a need for bicycling and walking facilities.

This information will be used in combination with the LTS, Pedestrian Level of Comfort (PLOC) and accessibility analyses to identify locations on the MPO roadway network for new and enhanced facilities. How each comment was incorporated into the analysis will be documented here.

Table 1: Comment Geographic Distribution

			Currently Unsafe		Facilities Needed		Great Facility		Additional Comments	
County	Total	Total (%)	Total	%	Total	%	Total	%	Total	%
Orange	240	83%	98	41%	84	35%	34	14%	24	10%
Osceola	25	9%	7	28%	8	32%	3	12%	7	28%
Seminole	25	9%	12	48%	8	32%	1	4%	4	16%
Total	*290*		*117*	*40%*	*100*	*35%*	*38*	*13%*	*35*	*12%*

Source: Social Pinpoint Comment Map; Fehr & Peers, 2023

Table 2: Comment Proximity to High Stress Facilities for Bicycling (LTS 3 or 4)

			Currently Unsafe		Facilities Needed		Great Facility		Additional Comments	
County	Total	Total (%)	Total	%	Total	%	Total	%	Total	%
Orange	144	50%	69	48%	50	35%	15	10%	10	7%
Osceola	15	5 %	5	33%	3	20%	3	20%	4	27%
Seminole	17	6%	7	41%	7	41%	0	0%	3	18%
Total	**176**		**81**	**46%**	**60**	**34%**	**18**	**10%**	**17**	**10%**

Source: Social Pinpoint Comment Map; Fehr & Peers, 2023:

Table 3: Comment Themes by Geography

County	Total	Speeding	Connectivity	Road Condition	Lighting/ Visibility	Mentions Sidewalks	Mentions Bike Lanes	Ped Comments	Bike Comments
Orange	206	26	44	12	24	56	43	121	105
Osceola	22	4	3	0	0	7	6	11	9
Seminole	24	0	4	0	1	6	9	11	13
Total	*252*	30	51	12	25	69	58	143	127

Source: Social Pinpoint Comment Map; Fehr & Peers, 2023:

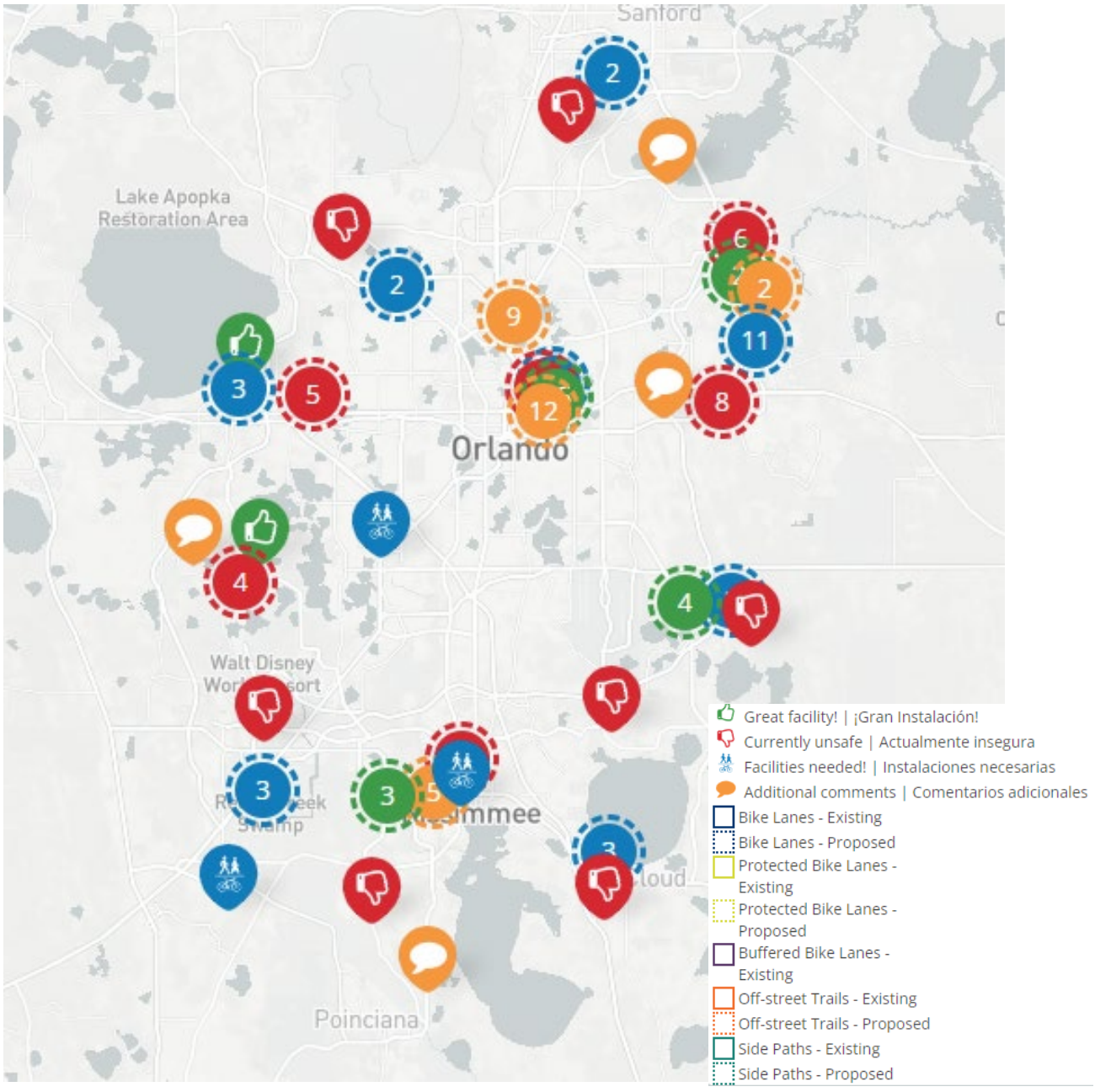


Figure 5: Geographic Distribution of Comments

Comment Summary

There were many comments about specific facilities. These comments will be considered when developing recommendations. Many of the comments are similar to the ones provided in the survey. Below is a summary of the general concerns of respondents.

Enhanced Facilities

- Wider sidewalks/bike lanes
- Buffered facilities including vertical separation
- Enhanced intersection and trail crossings
- Reduced intersection crossing distances and properly timed flash don't walk phase
- Enhanced crosswalks including raised crosswalks
- Landscaping and shade
- Trashcans along walking and biking paths
- Trails instead of bike lanes on large, high-speed roadways
- Delineation between bicycle and pedestrian spaces
- Bulb-outs
- Curb ramps

New Facilities

- More sidewalks
- More crosswalks
- Pedestrian bridges
- Dedicated bicycle facilities, especially where sidewalks are narrow
- Consistent, continuous facilities
- Fill in gaps in the bicycle and pedestrian network

Better connections

- Between different cities and neighborhoods
- To transit
- To parks and lakes
- To trails
- To UCF
- To schools
- To shopping centers

Dangerous or Uncomfortable Facilities

- Bike lanes on busy, high-speed roads
- Brick roads
- Inconsistent infrastructure (bike lanes that stop and start, bike lanes that shift cyclists to the sidewalk)

Driver behavior

- Speeding
- Drivers don't look for or yield to bicyclists or pedestrians

- Drivers parking on the sidewalk

Maintenance

- Faster maintenance
- Clear debris and overgrown vegetation
- Fix potholes and bumps in bike lanes
- Fix broken sidewalks

Miscellaneous

- Biking and walking facilities need better lighting
- Core areas like Ivanhoe and Mills should prioritize walking and biking
- Concerns about criminal activity and safety in wooded or secluded areas
- Address bicycle and pedestrian conflicts with railroad crossings
- Roads should fit the context of the neighborhood
- Push buttons are on the wrong side of trail

Demographic Information

As part of the survey, we asked participants for demographic data, including race/ethnicity, gender and age. The percentage of survey respondents who are white is disproportionately higher than the regional population, and the Black or African American population bring the most underrepresented. Responses by gender were slightly higher for people that identify as males (48 percent) than females (45 percent). Approximately 6 percent of responds preferred not to state or are non-binary. No persons under the age of 18 responded to the survey. Persons over the age of 65 are slightly overrepresented in the survey responses.

Next Steps

The public engagement participants provided insightful feedback about what they would like the regional bicycle and pedestrian network to look like. The project team will work to incorporate this feedback when developing recommendations for the types of facilities to provide and their locations. For each comment related to specific infrastructure (safety or identification of a project need), a record of how the project team incorporated the feedback will be kept. For comments not on the MPO Roadway network, the comments will be forwarded to the appropriate jurisdiction.

Appendix F: Final Public Engagement Summary

Note: This appendix will be added after the completion of the public engagement activities for this project.