PART 1

RECOMMENDATIONS

WALK. BIKE. THRIVE!

A regional vision for a more walkable, bikeable,
and livable metropolitan Atlanta

ARC
ATLANTA REGIONAL COMMISSION

ACKNOWLEDGEMENTS

The Atlanta Regional Commission and project staff would like to thank the elected officials, professional staffs, and citizens of the region who supported this effort. In particular we are indebted to the Walk. Bike. Thrive! Equity Advisory Committee and ARC's Bicycle & Pedestrian Taskforce for lending their time and expertise, as well as the attendees of our public forums for sharing their visions of the region.

PREPARED BY:

alta
PLANNING + DESIGN

WITH SUPPORT FROM:

NELSON NYGAARD

vhb

Lattimer
COMMUNICATIONS

This document is written to support and should be considered part of the Atlanta Regional Commission's The Atlanta Region's Plan. Walk. Bike. Thrive! has been adopted by the Atlanta Regional Commission's board and represents official policy for that agency. This document does not constitute a standard specification or regulation.

ARC
ATLANTA REGIONAL COMMISSION

THE ATLANTA REGION'S PLAN

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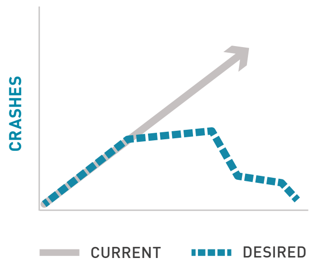
THE NEED

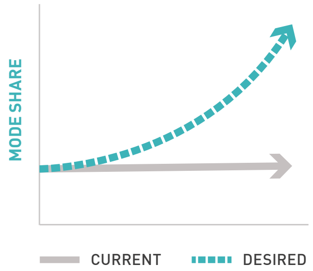
Walking and bicycling are critical pieces of the region's transportation system. Though overall numbers are low regionally - 5% of residents currently walk, bike, or ride transit for daily trips - communities and residents benefit from increased choice, especially for modes that improve health and save money while reducing congestion. The region as a whole benefits from improved quality of life, attraction of businesses and employees, and equitable opportunities provided by each walking- and bicycling-friendly community. This plan seeks to increase active transportation within the Atlanta region and reduce the risks and barriers that currently inhibit walking and bicycling.



Safety

Walking and biking should be safe and enjoyable activities everywhere in the Atlanta region. Currently they are often dangerous, particularly in certain areas.

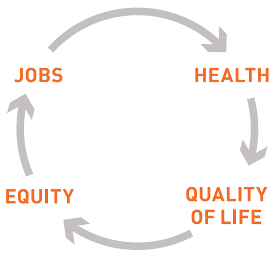
By implementing this plan, the region will be safer to walk and bike by creating a trend towards zero for the number of bicycle and pedestrian crashes and fatalities.



Mobility

People in the region should be able to walk and bike throughout the day, week, and year as part of daily life. Currently this is an option for some but not all.

By implementing this plan, the opportunity to walk and bike for daily activities will be more frequent, convenient, and normal.



Economic Competitiveness

The economic success of the region is tied to its ability to improve job opportunities, support healthy lifestyles and social mobility, and create thriving communities. Creating great places, with safe opportunities to walk and bike, is key to winning the quality of life competition. Currently the areas that are most walkable and bikeable in the region are also the drivers of the regional economy.

By implementing this plan, places where people want to invest their time and money to walk and bike will be created and expanded.

ACTION

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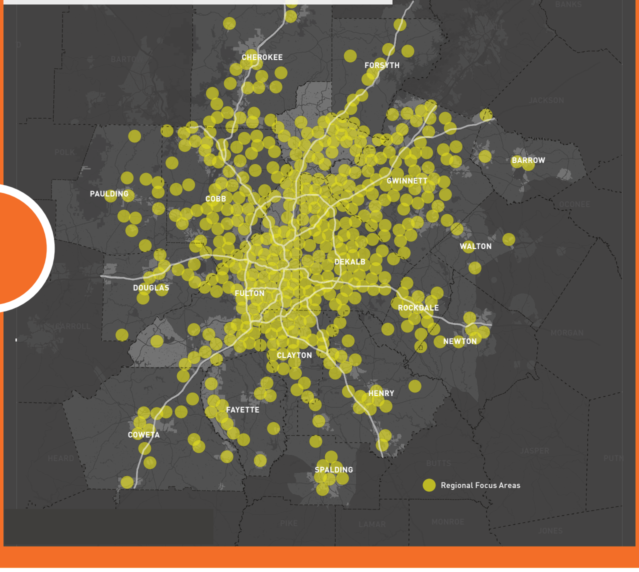

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REGIONAL FOCUS

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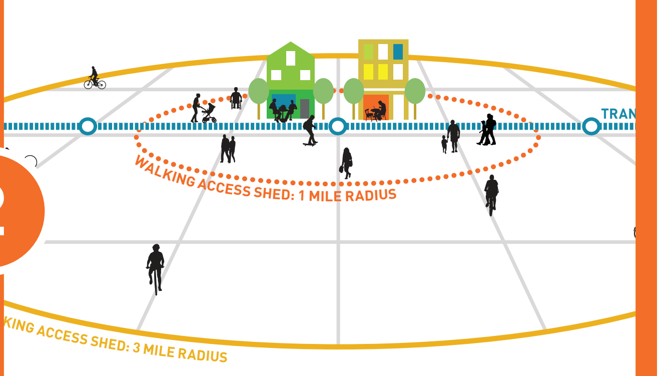
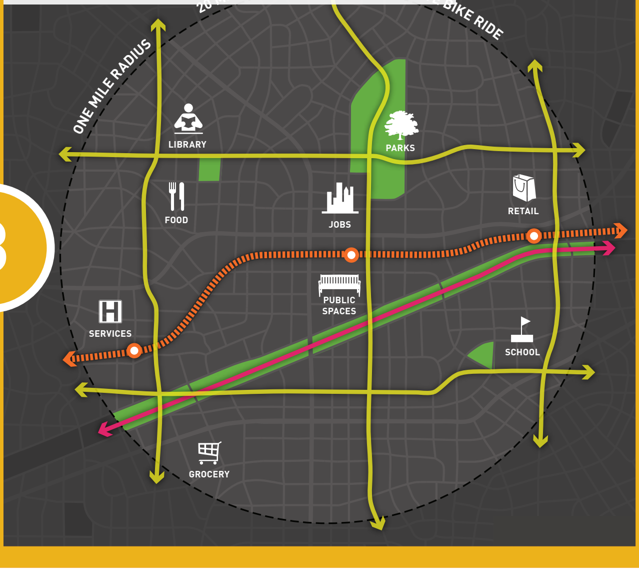

TRAN
WALKING ACCESS SHED: 1 MILE RADIUS
KING ACCESS SHED: 3 MILE RADIUS

2

REGIONAL FOCUS

20 MINUTE NEIGHBORHOODS: PAGE 38



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LOCAL FOCUS

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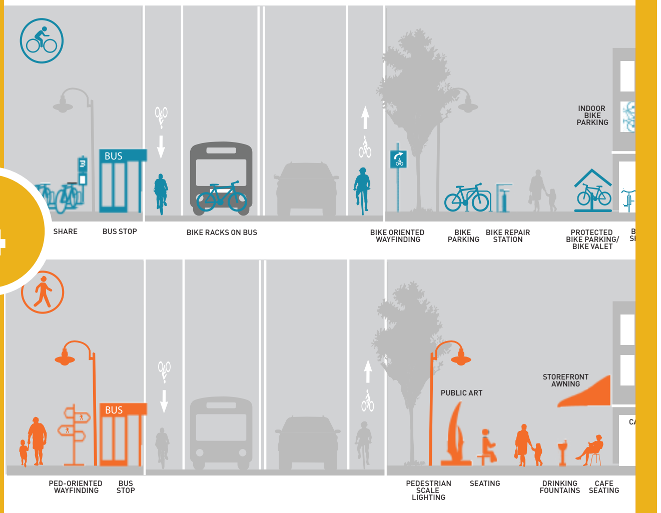

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LOCAL FOCUS

REGIONAL SUPPORT FOR WALKING AND BIKING

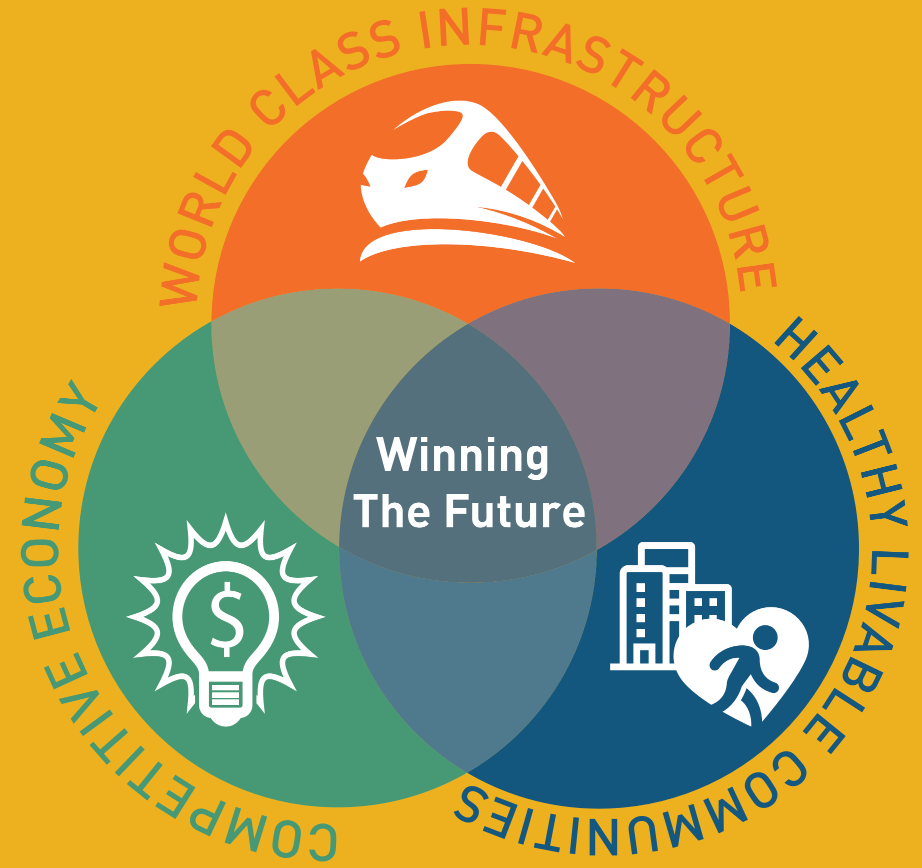
The Atlanta Regional Commission (ARC) is the regional planning and intergovernmental coordination agency composed of local governments in the Atlanta region by legislation passed by the Georgia General Assembly. Additionally, ARC is the federally-designated Metropolitan Planning Organization for the 20-county Atlanta region. ARC as an organization is governed by a board of directors, made up of elected officials from member jurisdictions and regional and state agency leadership. As an organization, ARC sets policy to allocate federal transportation dollars for the region and provides technical assistance to local governments, among other state and federally required responsibilities.

The Atlanta Region's Plan is the official plan for the MPO that will guide policy and decision-making for the Atlanta Regional Commission. By reference and adoption, Walk. Bike. Thrive! is the active transportation component of the Atlanta Region's Plan transportation element and can and will be used to develop regional policy and technical assistance for local governments in the areas of active and sustainable transportation options.

The Atlanta Region's Plan establishes a policy framework focused on three topics:

- World Class Infrastructure
- Healthy Livable Communities
- Competitive Economy

THE ATLANTA REGION'S PLAN VISION



Atlanta is one of the world's most dynamic metropolitan areas, competing globally on the strength of our diverse population, robust economy, myriad cultural assets and attractive lifestyles. We will 'win the future' through intensive collaboration that honors and leverages the uniqueness of our communities.

WALK. BIKE. THRIVE! SUPPORTS THE FOLLOWING GOALS AND OBJECTIVES
OF THE ATLANTA REGION'S PLAN:

1 Ensure a comprehensive transportation network, incorporating regional transit and 21st century technology

- Improve transit and non-single occupant vehicle options
- Promote an accessible and equitable transportation system
- Expand the transportation system while supporting local land use plans
- Provide for a safe transportation network
- Foster the application of advanced technologies to the transportation system

2 Develop additional walkable, vibrant centers that support people of all ages and abilities:

- Improve quality of life at the neighborhood, city, county and regional levels
- In partnership with local communities, focus resources in areas of need
- Promote sustainable land use development

3 Promote health, art, and other aspects of a high quality of life:

- Improve public health through the built environment
- Integrate sound environmental management principles
- Promote creative placemaking to build and maintain community character

4 Build the region as a globally recognized hub of innovation and prosperity

- Ensure that our existing and emerging employment centers support innovation and balance job growth and economic development in the region
- Maintain the region's current successes in existing and emerging employment sectors

5 Develop a highly educated and skilled workforce, able to meet the needs of 21st century employers

- Work with local communities to implement a regional approach to workforce development

WALK, BIKE, THRIVE!

PLAN VISION

The Atlanta Region will be one of the most connected and safest regions in the United States for walking and bicycling and use active transportation to improve the mobility, safety, and economic competitiveness for residents and communities.

WALK, BIKE, THRIVE!

PLAN GOALS

In addition to The Atlanta Region's Plan goals and objectives, this plan looks to further the following goals related to walking and biking in the region:

Create walking and bicycling options for everyone in every community

Ensure safer and more accessible bicycling and walking in the region

Tie walking and biking improvements to quality of life, economic competitiveness, and health

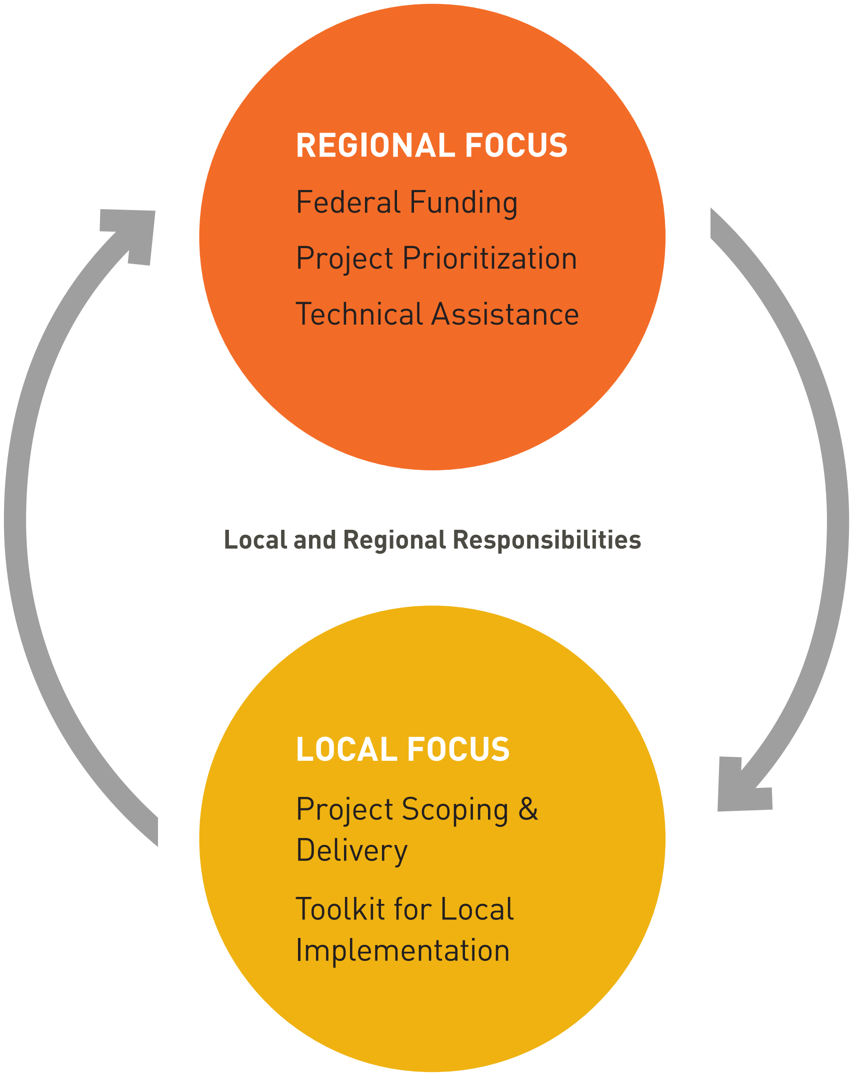
Establish a vision for a Regional Trail Network

Build a strategy based on compounding growth and relentless incrementalism—*i.e. where do we start and what do we do next?*

Use the region's pivoting growth and fresh momentum so that in 5 years Atlanta can market itself as one of the most walk-friendly and bike-friendly regions in the nation

WALK, BIKE, THRIVE!

POLICY FOCUS


REGIONAL FOCUS
Federal Funding
Project Prioritization
Technical Assistance
Local and Regional Responsibilities
LOCAL FOCUS
Project Scoping & Delivery
Toolkit for Local Implementation

Plan Objectives and Organization

The purpose of this plan is to meet two primary objectives:

- Describe a **regional framework for walking and biking** to guide the Atlanta Regional Commission's decision making
- Describe **how local jurisdictions and regional partners** can build high-quality, low-stress walking and biking networks and supporting policies and programs

As the region grows, the role of the MPO and the Atlanta Regional Commission has increasingly shifted to prioritizing federal transportation dollars, providing technical assistance for regional partners, and convening regional leaders around regionally significant policy issues. With this shift, much of the policymaking, identification, and implementation, of projects and programs impacting walking and biking is done at the local level.

The recommendations for this plan are organized to fit with the varied roles and responsibilities of ARC and local governments.

- **Regional Framework** – Establish regional priorities and policy related to walking and biking to guide funding and technical assistance investments.
- **Local Framework**- Focus on how local partners can enhance and expand policy, programs, and infrastructure that support walking and biking

Mariposa Lofts 678.742.5190

Regional Framework:

ACTIVE TRANSPORT STRATEGY FOR THE ARC

This section outlines a set of key policy recommendations and action steps for the Atlanta Regional Commission.

While the responsibility for developing and implementing detailed plans, policies, and programs lies largely with local governments, the recommendations in this section establish clear roles for ARC to play as a coordinating agency, provider of technical assistance, distributer of federal transportation funds, and convener around regionally-significant issues.

ARC can develop a focused approach to investments in active transportation, partner with state and regional government agencies to improve regional access to high quality walking and biking facilities, establish high-priority focus areas to prioritize federal investments in walking and biking, lead the development of a regional trail system, support local communities' efforts to increase walkability and bikeability, and work to ensure that everyone in the region has an equal opportunity to walk, bike, and thrive.

Regional Organizing Principle #1:

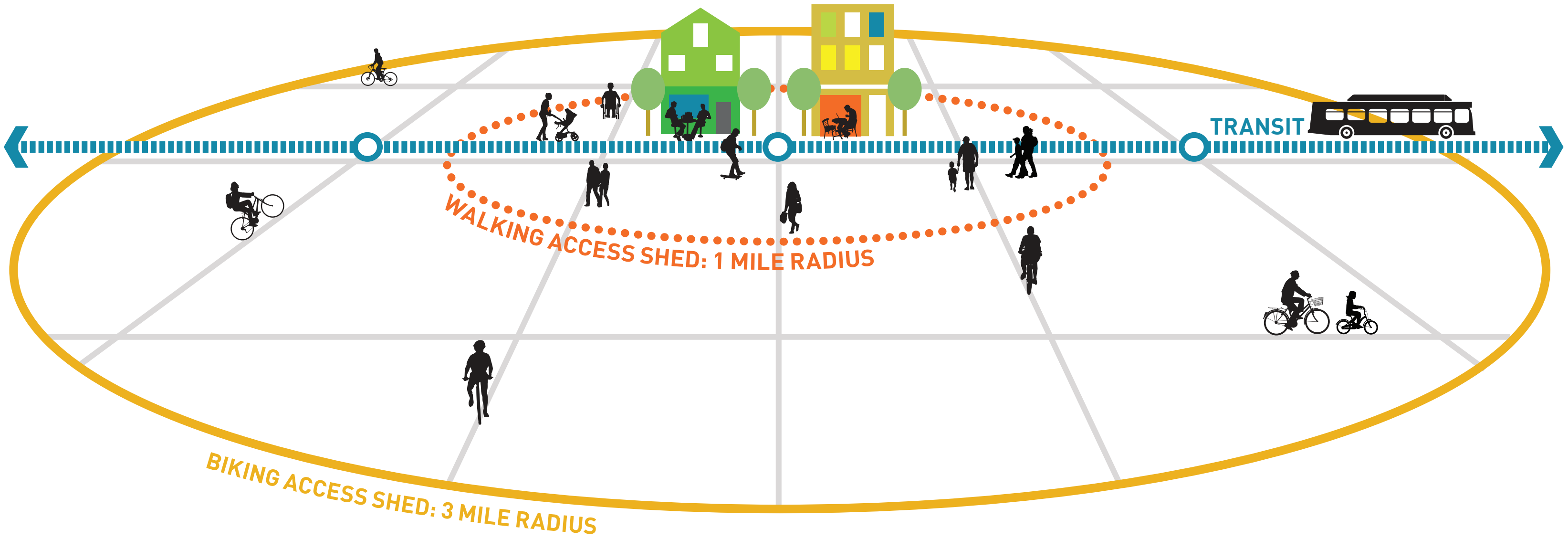
A focus on short trips will allow the region to maximize the benefits associated with more walking and biking

Walking and biking are fun, healthy, convenient forms of transportation that are ideally suited to making short trips. Trip distance is such an important factor in predicting the choice to walk or bike for utilitarian trips that ARC uses "access sheds" as an organizing principal for the recommendations contained in this plan. **The strategic approach of Walk Bike Thrive is to focus investments in areas that enable short trips for walking or bicycling to work, transit, or daily needs.**

According to ARC's PLAN 2040 travel demand model, 50% of all waking trips in the region are less than ¾ of a mile, and 75% of walking trips are less than 1.2 miles. Bike trips tend to be slightly longer on average, although 50% of bike trips in the region are less than 2.4 miles, and more than 75% of bike trips are less than 4 miles. Considering these travel patterns, the largest opportunity to increase rates of active transportation in the region lies in making walking and bicycling attractive alternatives to driving for trips of 3 miles or less.

At the regional scale, leveraging the benefits associated with higher walking and bicycling mode share means 1) prioritizing active transportation investments in parts of the region where land use and transportation networks naturally support options for short trips; and 2) ensuring that the regional system facilitates seamless transitions between active transportation and other modes, such as transit and driving, which are better suited to longer trips.

**TRAVEL SHEDS:
AN ORGANIZING PRINCIPLE**


TRANSIT
WALKING ACCESS SHED: 1 MILE RADIUS
BIKING ACCESS SHED: 3 MILE RADIUS

Regional Organizing Principle #2:

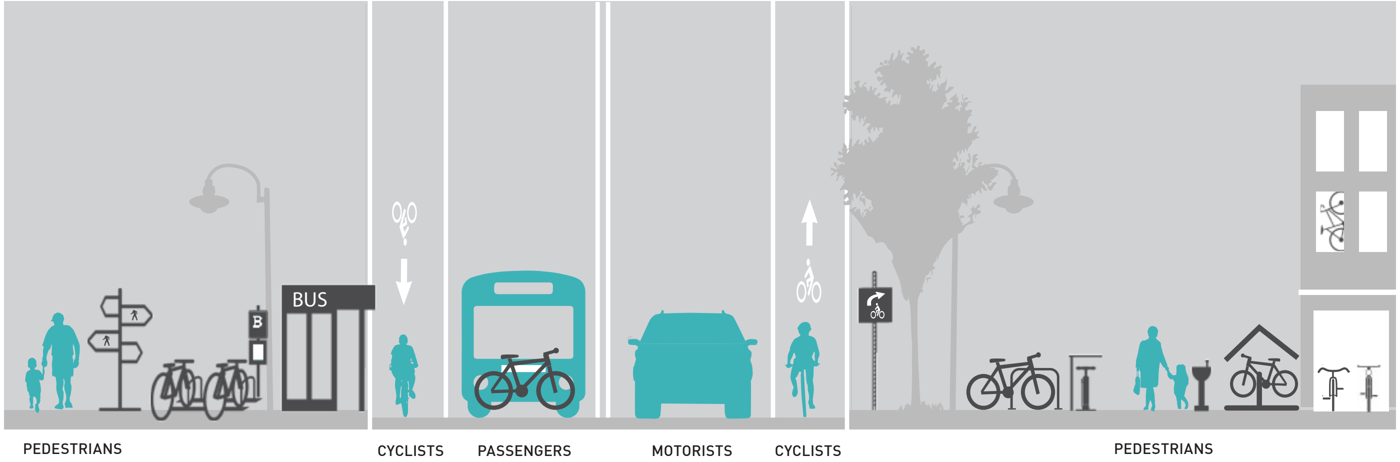
An opportunistic approach to Complete Streets improvements on major streets will enable the region to make the most of limited resources

Complete Streets are roadways designed and operated to enable safe access for all users – including pedestrians, bicyclists, motorists, and transit riders – and all ages and abilities.

Major streets – roadways with high car speeds and volumes, multiple lanes, and infrequent crossings – comprise a large number of road miles in the region and pose significant barriers for walking, bicycling, and connecting to and from transit. These arterials are consistently the most dangerous for walking and bicycling even as they provide the only access to a large portion of the region's retail, commercial, and residential areas as well as most regional transit routes.

It is important to accommodate walking and bicycling trips along every road in the region. People often rely on arterials for longer trips between centers or may live or work a short walk from regional transit stops. As the region continues to grow, every roadway or routine maintenance project offers an opportunity to provide safe walkways, bikeways, and street crossings. **ARC supports the implementation of Complete Street principles on every roadway and with any project receiving federal funds.**

Many major streets in the region are managed by GDOT. Regional Partners, including ARC and local jurisdictions, should actively work with GDOT to identify opportunities to make state-owned roadways within ARC's boundaries Complete Streets.



Develop a Focused Approach to Regional Investments in Walking and Biking

Demand for walking and biking is growing and regional travel options are increasingly multi-modal. For example, many people who work in Downtown Atlanta have the option to drive to a park-and-ride lot or transit station, travel to Downtown Atlanta on a bus or a train, and walk from the transit stop to their workplace. On a day off, many people choose to go for a bike ride or stroll with their family to a nearby park or one of several regional trails that span multiple cities, counties and natural areas.

The graphic on the following page illustrates the important role that walking and biking play in a regional travel patterns.

While demand for walking and biking is increasing, active modes currently make up a relatively small share of all trips in the region – just 5% of all trips. Part of the reason for this is that 50% of all trips by any mode in the Atlanta region are longer than 4.5 miles, and 95% of trips 4.5 miles or longer are made by car. While there is increasing demand for more and better active transportation facilities throughout the region, the fact is that many rural and suburban areas are unlikely to support high levels of walking and biking activity in their current form due to the distances between destinations.

Considering these travel patterns, making walking and biking attractive and convenient for more people in the region will require a focused approach.

ARC WILL EMPLOY FIVE KEY STRATEGIES TO INCREASE THE SHARE OF TRIPS MADE ON FOOT OR BY BIKE:

1 **Focus investments in "mode shift opportunity zones"** where the built environment already supports walking and biking for short trips. These are generally places with a variety of destinations such as parks, schools, and commercial areas; a connected street grid; transit service; and a mix of housing types. These areas include the region's existing and emerging WalkUPs, LCIs, CIDs, and activity centers.

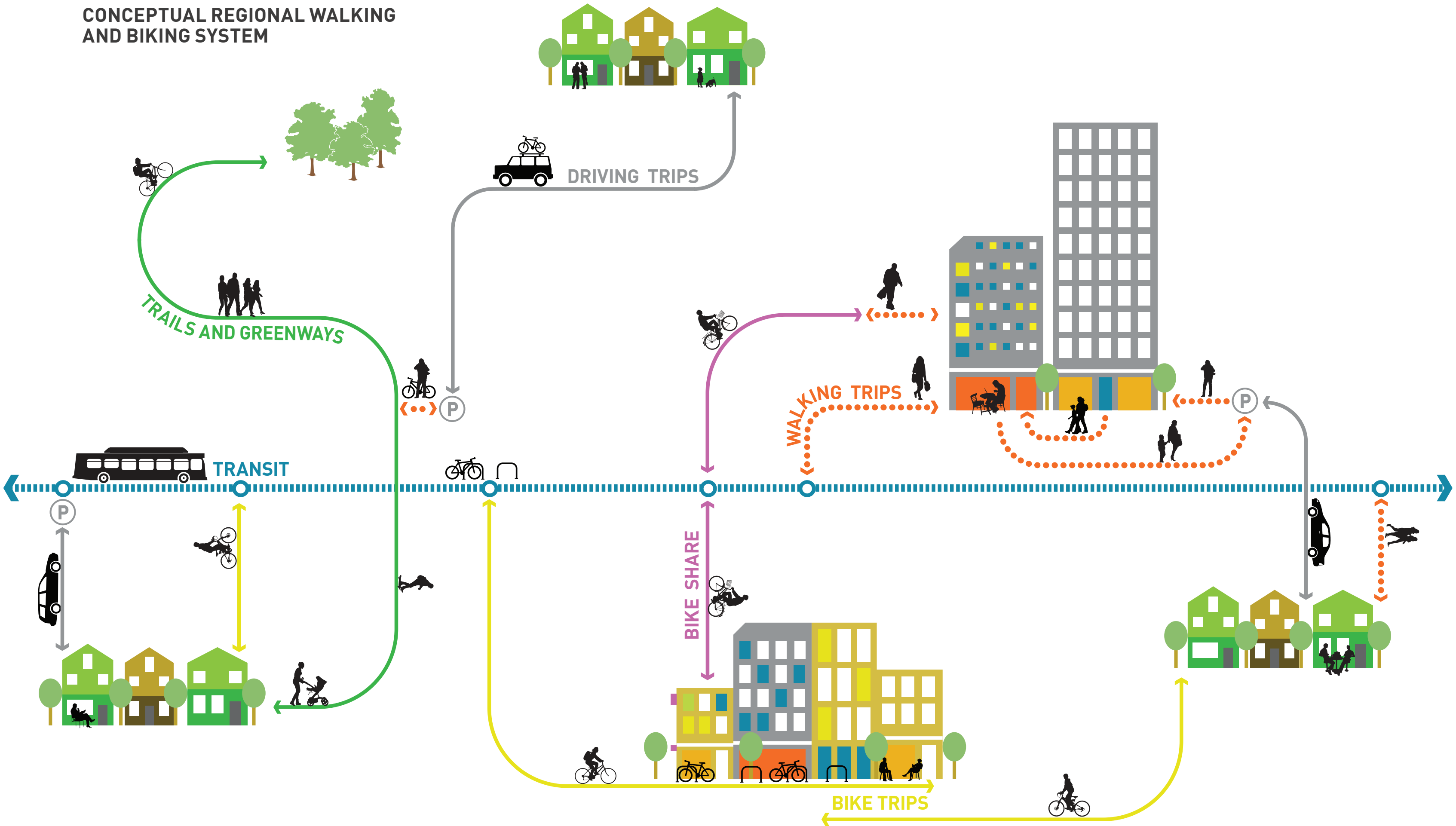
2 **Address safety and equity issues** Importantly, some parts of the region that are not particularly conducive to walking or biking also have urgent safety and equity needs that ARC can help address immediately. These improvements should focus on decreasing pedestrian and bicyclist fatalities and serious injuries as well as providing sidewalks and bikeways for populations that rely on walking and biking out of necessity rather than choice.

3 **Work closely with transit providers to a) improve access to transit stops and b) improve the quality and quantity of transit service** between mode shift opportunity zones so that walking and bicycling can be easily combined with transit for longer regional trips.

4 **Pursue a strategy of relentless incrementalism** to increase the walkability and bikeability of the region's lower-density residential neighborhoods and auto-oriented corridors. This means identifying barriers to walking and biking one at a time and working to address them as opportunities arise.

5 **Lead the development of the regional trail system** in partnership with state and local government agencies and non-profit organizations focused on trails such as PATH Foundation.

CONCEPTUAL REGIONAL WALKING AND BIKING SYSTEM



Establish Regional Focus Areas for Active Transportation Investment

Making the most of limited transportation funds requires balancing needs and opportunities in a way that reflects ARC's established policy goals. Historically, ARC has not used clear metrics used to evaluate and award federal funding to potential active transportation projects proposed by local jurisdictions. A data-driven "Regional Focus Area" framework tied to desired safety, mobility, economic development, and equity outcomes is a tool that ARC could and should employ to help align investments with stated policy goals.

ARC will **develop a location-based project scoring card** for submitted active transportation projects that includes the following factors:

☐ Is the project located in an area where there is high demand and propensity for walking and bicycling?

☐ Is the project located in an area with historically high crash rates for people walking and biking? If so, does the project address an identified safety issue? These areas include "hot spot areas" with concentrated walking and biking safety issues as well as systemic safety issues, such as along major commercial corridors.

☐ Is the project located in an equitable target area? And if so, does it serve the mobility needs of the populations that rely on walking, bicycling, and transit most?

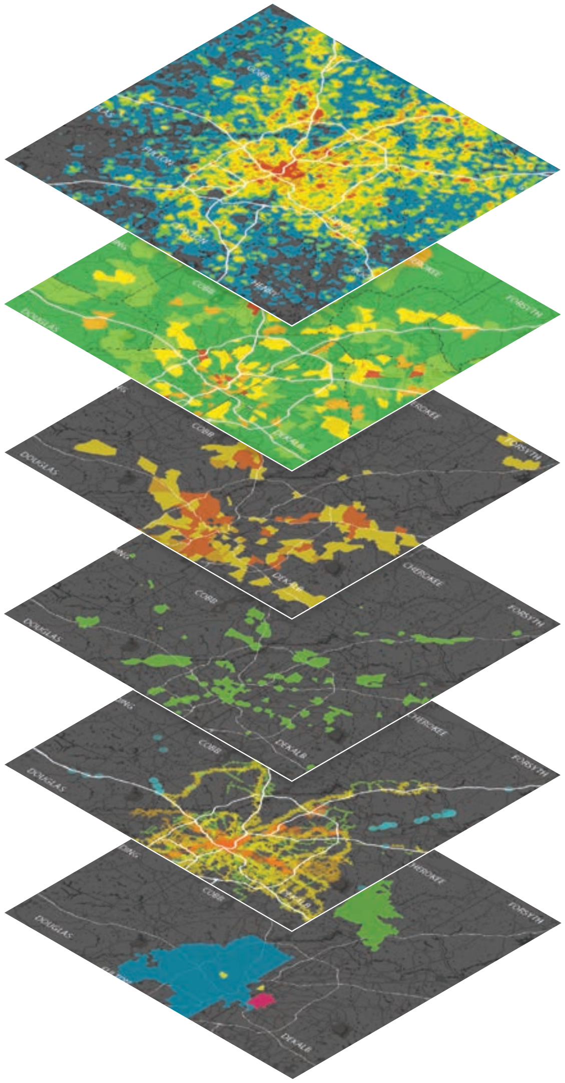
☐ Is the project located in a designated Activity Center?

☐ Is the project located in an area with high propensity for transit use?

☐ Is the proposed project located in an established Walk Friendly Community or Bike Friendly Community with adopted local strategies for successful implementation?

kson Street
Court Square
NO TURN ON RED
P PARKING
NO TURN ON RED
N. Court Square
W. Washington Street
DO NOT ENTER
ONE WAY
Newnan

The diagram and map to the right illustrate the concept of Regional Focus Areas, using the demand, safety, equity, activity center, transit propensity, and walk- and bike-friendly community map layers used during the *Assessment of Regional Travel Patterns* phase of this project. Regional Focus Areas are loosely represented by bubbles with a 1 mile radius to reflect the organizing principle that most walking trips are less than one mile, and to be consistent with the "20 Minute Neighborhood" concept used in the *Local Framework* section of the recommendations chapter. The precise boundaries of each bubble should not be taken literally – the purpose of this diagram is simply to illustrate the concept of Regional Focus Areas as a decision-making tool. For actual decision-making, ARC will use the most current GIS datasets.



REGIONAL FOCUS AREAS

HIGHER POTENTIAL DEMAND FOR WALKING AND BIKING

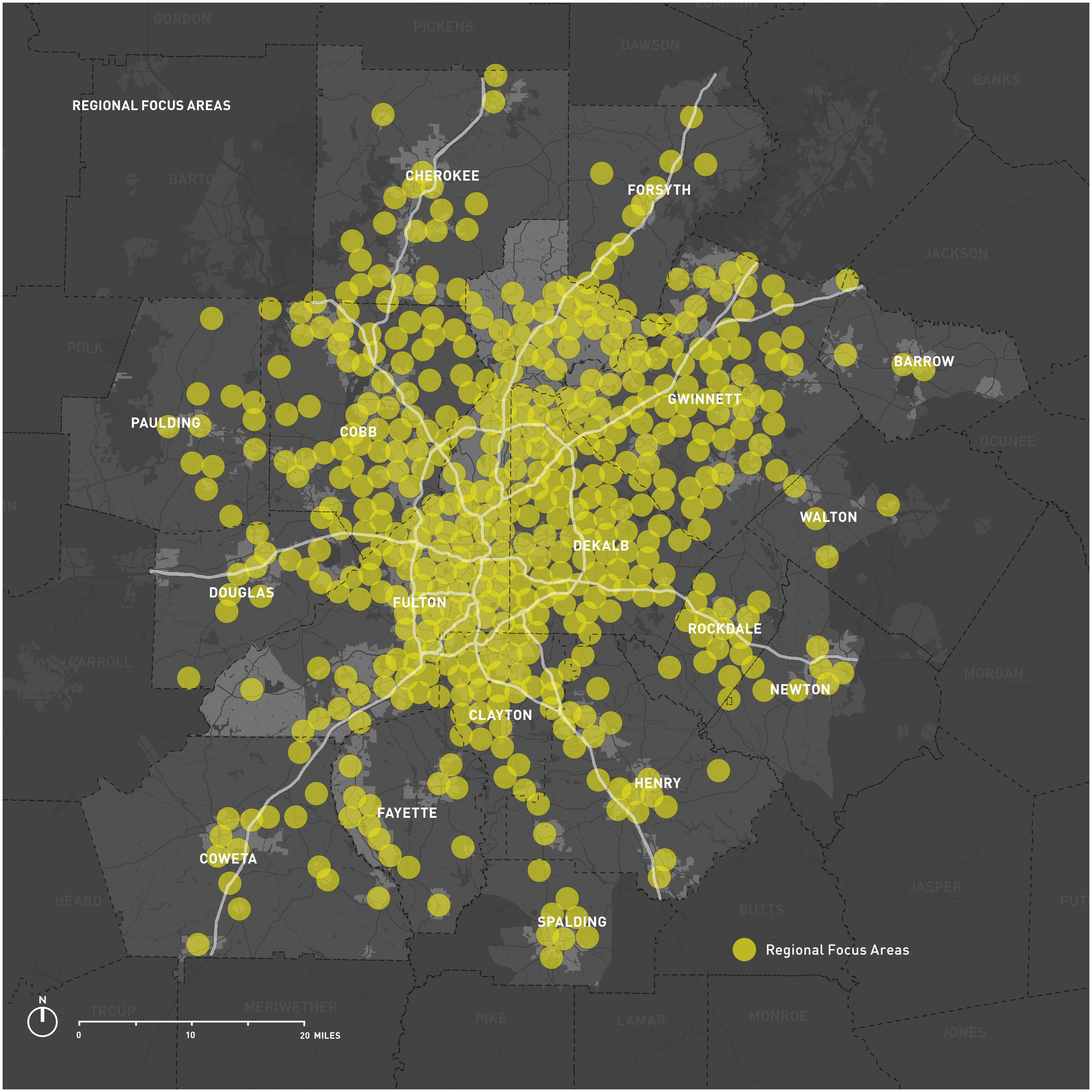
HIGHER CRASH RISK FOR PEOPLE WALKING AND BIKING

EQUITABLE TARGET AREAS

ACTIVITY CENTERS

HIGHER TRANSIT PROPENSITY

WALK-FRIENDLY AND BIKE-FRIENDLY COMMUNITIES


REGIONAL FOCUS AREAS
GORDON
PICKENS
DAWSON
LUMPKIN
BANKS
BARTOW
CHEROKEE
FORSYTH
JACKSON
POLK
BARROW
PAULDING
COBB
GWINNETT
OCONEE
WALTON
DEKALB
DOUGLAS
FULTON
ROCKDALE
CARROLL
NEWTON
MORGAN
CLAYTON
HENRY
FAYETTE
COWETA
HEARD
SPALDING
BUTTS
JASPER
PUT
TROUP
MERIWETHER
PIKE
LAMAR
MONROE
JONES
● Regional Focus Areas
N
0
10
20 MILES

Implement the Regional Trail Network Strategy

For the purposes of this plan, a trail is defined as a paved multi-use path that is physically separated from high-speed motor vehicle traffic by open space or a landscaped buffer. This includes multi-use paths parallel to roadways (sometimes called "sidepaths") and paths within an independent right-of-way (sometimes called "greenways"). Trails can accommodate a range of users in addition to people walking and bicycling, including runners, skaters, equestrians, and even low-speed electric vehicles.

ARC's regional trail network strategy should be focused on two primary objectives:

1. **Closing identified network gaps** in the trails of regional significance system, and
2. **Expanding the network** of regionally significant trails

Trails in the Atlanta region can be classified as Local Trails or Trails of Regional Significance. Local Trails facilitate short recreational or utilitarian trips within and between neighborhoods, and are primarily used by people that live or work within a few miles. Local trail systems are largely the responsibility of local partners to develop.

Trails of Regional Significance, by contrast:

- May cross jurisdictional boundaries to connect cities, regional activity centers, parks, and other trails
- Can be a destination in their own right such as the scenic Arabia Mountain Trail or a heavily-traveled commuter corridor like the Atlanta Beltline
- Have the potential to be a key link connecting the regional trail network
- Connect to regional transit systems

ARC will focus on increasing the connectivity of the regional trail system by filling identified network gaps. Trails of Regional Significance form a regional hub-and-spoke type of system that, when completed, will connect all four quadrants of the region to the core and form a "walking and biking highway system" for active transportation.

As noted in the Assessment, filling about 70 miles of key gaps would create an approximately 225 mile connected regional trail network. Additionally, closing these key gaps would represent a 46% increase in the mileage for the network of regionally significant trails. Many of these trail gaps are in various stages of planning, with the PATH Foundation leading and supporting many of the efforts to build and close these key regional gaps. Continued investment and coordination from public and private partners will help the region work towards closing these gaps and having a truly regional trail network.

Secondly, ARC will be opportunistic and strategic with respect to expanding the existing system beyond gap closure. ARC is uniquely positioned to facilitate inter-jurisdictional trail planning and implementation through convening and technical assistance. If the opportunity to develop additional regionally significant trails arises along a particular corridor or in a specific part of the region, ARC will work to support implementation of the proposed trail. This is particularly true if the proposed trail connects to or within an Activity Center, connects to another regionally significant trail, or if the project serves one or more Equitable Target Areas.

To support regionally significant trail development, ARC will:

- Work with local partners to maintain a map to track existing, planned, programmed, and envisioned regionally significant trail corridors
- Develop a regionally significant trail corridor scoping program to evaluate and assist with trail corridor visioning and regional coordination

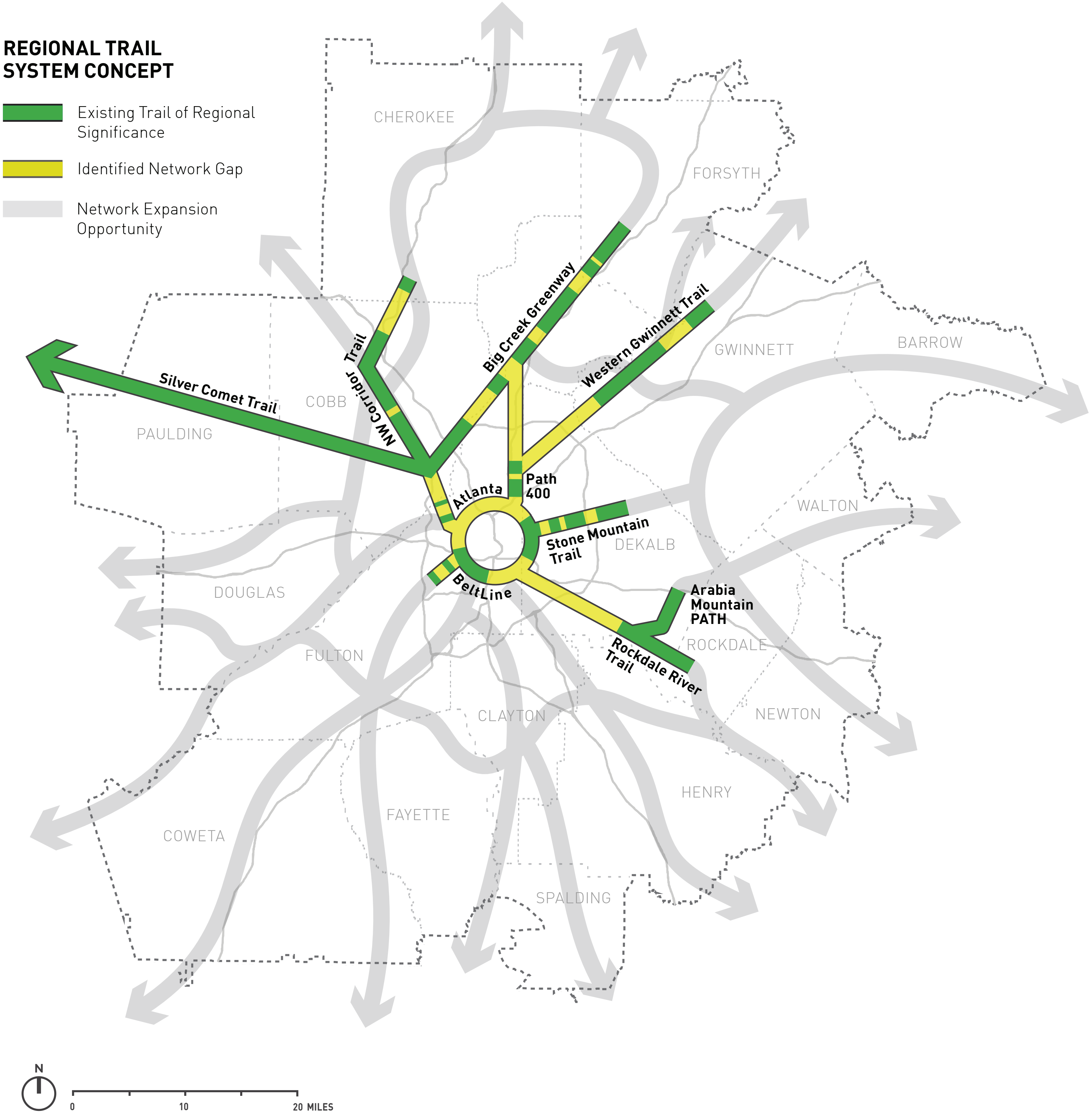
The diagram to the right illustrates existing trails of regional significance, identified network gaps, and network expansion opportunities.

REGIONAL TRAIL SYSTEM CONCEPT

🟩 Existing Trail of Regional Significance

🟨 Identified Network Gap

⬜ Network Expansion Opportunity



The following **trail network expansion criteria** were used to develop the network expansion opportunities:

- Assists with meeting the goal of having at least one regional trail in every county in the region
- Improves trail access to or within an Equitable Target Area
- Connects to an existing Trail of Regional Significance
- Connects to an Activity Center or High Demand Area
- Connects to a federal, state, or local park
- Met a minimum standard for initial feasibility (runs along a riparian, greenspace, railroad, or utility corridor)

Among the many benefits of trails, they provide opportunities for people to connect with nature.

ESTABLISH DESIGN STANDARDS FOR REGIONAL TRAILS

Regional trails receiving funding from ARC will be built to a high standard. They should:

- Be at least 12 feet wide to allow for comfortable passing even when users in the opposite direction are walking or biking two-abreast, and wider in dense areas where demand is likely to be high.
- Meet or exceed guidance put forth in AASHTO's Guide for the Development of Bicycle Facilities for physical separation from the roadway if built as a "sidepath".
- Include wayfinding signage that provides information about popular destinations.
- Provide safe, convenient crossings that minimize delay and out-of-direction travel for people walking and bicycling.
- Include support facilities at trailheads and along the route including seating, trash cans, water fountains, bathrooms, bike parking, and/or public art
- Accomodate the full range of biycle types, including cargo bikes, tandems, recumbants, tag-along/ trailerbikes, and bicycle trailers

Similar to the high priority focus areas, ARC will **develop a location-based project scoring card for submitted trail projects** that includes the following factors to prioritize and identify trails of regional significance:

- ☐ Does the project assist with meeting the goal of having at least one regionally significant trail in every county in the region?
- ☐ Does the project improve trail access to or within at Equitable Target Area?
- ☐ Does the project connect to an existing Trail of Regional Significance?
- ☐ Does the project connect to an Activity Center or High Demand Area?
- ☐ Does the project connect to a federal, state, or local park?

The Silver Comet Trail is a regionally significant trail that provides opportunities for recreation and transportation, as well as generating economic activity too.

Support Local Efforts to Become Walking and Bicycling Friendly Communities

The Atlanta Regional Commission has established a goal of helping the Atlanta region become one of the most walk-friendly and bike-friendly regions in the US. This goal is consistent with The Atlanta Region's Plan policy framework of world class infrastructure, healthy livable communities, and a competitive economy.

ARC will actively support the efforts of cities and counties who desire to achieve Walk Friendly Community (WFC) or Bicycle Friendly Community (BFC) status. WFC and BFC designations are part of national programs to recognize communities who are currently leading in active transportation or who are interested in becoming more walking- and bicycling-friendly. Currently, the region has two Walk Friendly Communities and three Bicycle Friendly Communities as well as two Bicycle Friendly Universities and three Bicycle Friendly Businesses.

ARC is using the Walk Friendly and Bike Friendly Community framework, commonly referred to as the "5Es", as well as a sixth E for equity:

- Education
- Encouragement
- Engineering
- Enforcement
- Evaluation and Planning
- Equity

In order to achieve the Walk-Friendly or Bicycle Friendly designation, communities need to develop efforts in each of these areas. This comprehensive approach ensures that communities are creating a culture of decision-making and investment that positively supports walking and biking. Equity is a particularly critical issue for the Atlanta region and is discussed in more detail in the following section.

The recommendations in this plans are heavily influenced by this framework and will be used to guide regional policy for walking and biking investments as well as supporting local priorities for walking and biking in the region.

By aligning with these national programs, the region can compare itself with peer regions and communities and promote the region at a national level. The processes built into these designations also provides a platform for ARC to provide technical guidance for local jurisdictions and partners, track policy changes at the local level across a diverse region, and flexibility for local partners to establish a "6E's" approach that is relevant to their particular community.

ARC's aim is to increase the number of Walk Friendly and Bike Friendly Communities in the region. This can be accomplished in part by providing funding and technical assistance for cities and counties.

As the federally-designated Metropolitan Planning Organization for the Atlanta region, ARC makes important determinations about how flexible federal transportation funds are used. Considering the region's historic under-investment in walking and bicycling, ARC should work to maximize the use of these flexible funds for walking and biking to bring the regional transportation system back into balance.

In 2016, ARC will launch a regional Walk Friendly and Bike Friendly Resource Center that will make a variety of research, training materials, and other tools related to suporting walking and bicycling easily accessible for local jurisdictions. Periodic trainings, community audits, and research conducted by ARC can also help increase the number of Walk Friendly and Bike Friendly Communities region-wide.

ARC can also use walk- and bike-friendly designations to prioritize investment in walkable and bikeable areas as those areas adopt local plan, strategies, visions, and ordinances necessary to sustain successful active transportation programs.

For more information on WFC/BFC action steps, see the "Become a Walk Friendly, Bike Friendly Community" section in the Local Framework of this plan.

Make the Connection between Walking, Biking, and Equity

One of the key findings of the Assessment is that the people who rely on walking, bicycling, and transit to access jobs and meet their everyday needs tend to live in locations that are least supportive of active modes. Findings also show that lower income people of color are overrepresented in bicycle and pedestrian crashes. Conversely, rents and home prices tend to be higher in areas where walking, biking and taking transit is relatively safe and more convenient. This pattern reflects demand for vibrant walkable and bikeable neighborhoods, the influx of higher wage earners moving to these selected areas, and the (related) trend of the suburbanization of poverty.

The uneven distribution of high-quality walking, bicycling, and transit provision results in health, safety, mobility, and economic benefits accruing to those who are more fortunate while increasing hardships for the populations in the region that are most vulnerable and disadvantaged. For this reason, equity issues related to active transportation are not be considered a side note but a central theme for ARC as the region works to become more walkable and bikeable.

The recommendations in the plan rely heavily on the use of the ARC Equitable Target Area index to guide and track investments. ARC will continue to use this tool when making investment decisions. Ultimately, much larger investments will be required to ensure that everyone in the region has equal opportunity to walk, bike, and thrive. This includes not only investing in sidewalks, bike lanes, trails, and crossing treatments in the areas that lack them, but also increasing the supply of affordable housing in the most walkable and bikeable parts of the region.

Atlanta Streets Alive, an open streets event, has created temporary space for people to re-image streets as places for all ages, abilities, and backgrounds - a key need for the Atlanta Region's transportation system.

Traffic Safety: Moving Towards Zero Deaths

The concept of "Vision Zero" is emerging around the world as a policy-driven and action-based response to decreasing preventable traffic deaths. Vision Zero states simply that **no loss of life is acceptable** and that government bodies, road designers, and road users should work together to eliminate roadway dangers.

Vision Zero policies view traffic and roadway safety through four lenses:

- **Ethics:** human life takes priority over mobility;
- **Responsibility:** providers and regulators share responsibility with users;
- **Safety:** humans are fallible and road design should minimize the opportunity for error and the severity of damage;
- **Mechanisms for change:** providers, regulators, and users all must work together.

Vision Zero actions routinely include roadway design elements that reduce traffic speeds and protect vulnerable road users, enforcement actions that increase automatic recording and normalize enforcement actions, and marketing or outreach strategies that focus on reducing driver inattention and improve user behaviors.

ARC will lead the region on moving towards Vision Zero policies for all roadways and encourage incorporation of safety elements into both roadway design and marketing efforts.

Safety improvements that reduce injuries and fatalities for people walking and biking are important to improve quality of life in the region.

Lead on Emerging Policy Issues

The Atlanta Regional Commission often serves as a convener to build consensus amongst regional leadership and local governments and to work towards better outcomes for residents across the region. The results of these efforts can be seen in many regional efforts, including the "Winning the Future" vision of The Atlanta Region's Plan.

As transportation needs, funding structures, and community priorities shift in the 21st Century, the ARC can serve a valuable role in identifying, researching, and building discourse around emerging, but often difficult, public policy areas.

Trails prove opportunities for people to be active, socialize, and connect with nature.

Health Policy & Connections to Active Transportation

In 2011 and 2015 ARC worked with the Georgia Tech Center for Quality Growth & Regional Development (CQGRD) to review the region's 2012 Long-Range Transportation Plan, titled *PLAN2040*. The subsequent *Health Impact Assessment of Atlanta Regional PLAN 2040* identifies five key elements of regional transportation policies that foster better public health outcomes.

A transportation policy that supports positive public health outcomes addresses:

- Safety and Security
- Access, Equity and Economy
- Active Living
- Ecology and Environmental Quality
- Civic Life, Social Connections

The recommendations in the HIA broadly support this plan's elements of walkable and bikeable communities, transit-oriented developments and improving transit system access, focusing on regional equity, and using a broad set of transportation, land use, development, and program tools for increasing walking and bicycling opportunities. For specific details on how to connection transportation decision-making to public health outcomes, see the PLAN 2040 HIA document.

ARC will prioritize projects that have a positive impact on public health outcomes.

Health

The Atlanta region is home to large government organizations like the Centers for Disease Control (CDC), non-profits like the Task Force for Global Health, and a number of local public health clinics. This makes metro Atlanta a major hub for the intersection of public health and planning – a growing field with overlapping work on injury prevention and health outcomes related to the built environment. The CDC's Built Environment and Health Initiative supports local communities' efforts to reduce health costs by integrating health benchmarks into transportation planning projects. Examples include:

- Funding and supporting Health Impact Assessments (HIAs) – which use scientific data and health expertise to identify the health effects associated with proposed projects and policies.
- Helping health departments build relationships with local governments and planning departments.
- Providing online courses to local governments that explain how and why to conduct an HIA.
- By tracking environmental indicators like active transportation metrics.

A focus on walkable communities is also being touted by the federal government as a solution to the U.S. obesity epidemic. In 2015 the U.S. Public Health Service announced "Step It Up! The Surgeon General's Call to Action to Promote Walking and Walkable Communities", which includes strategies all communities can use to increase walking and recognizes the need for spaces and places that make enjoyable walking possible. As the Surgeon General states, "Walkable communities are good for social connectedness, good for business, good for the environment, and, most importantly, good for personal health." [1]

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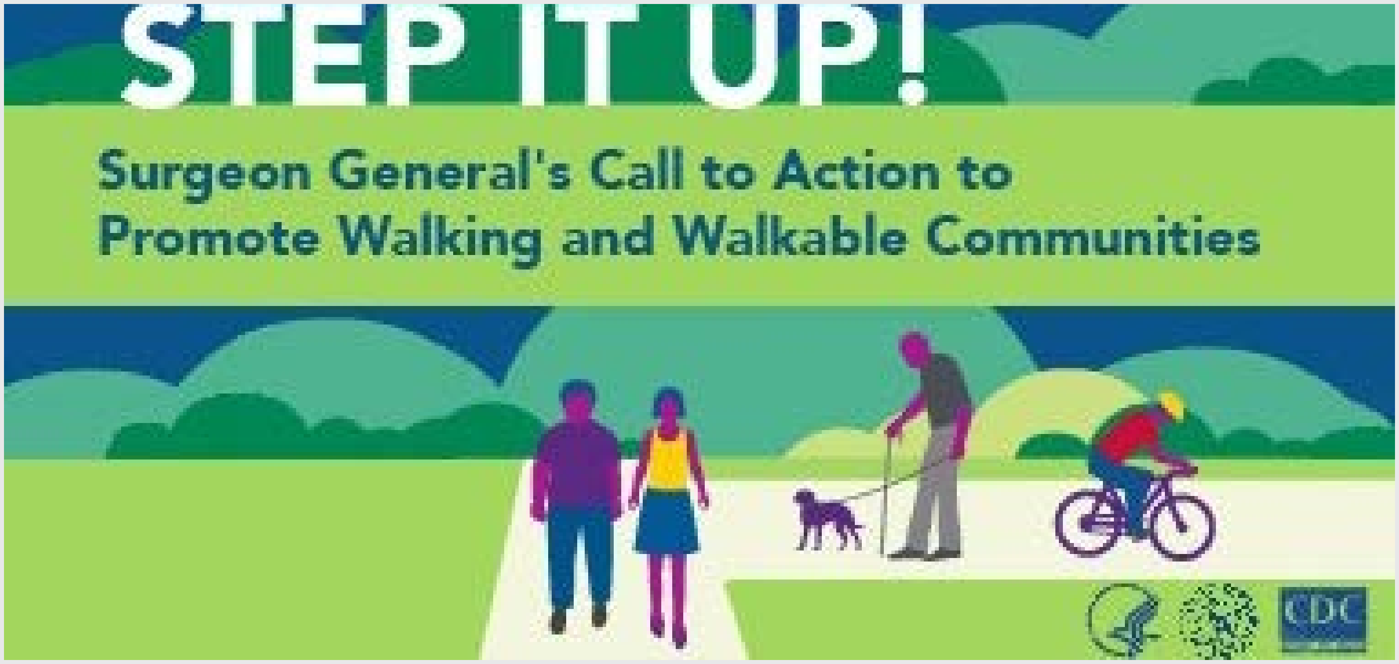
[1] *U.S. Department of Health and Human Services. Step It Up! The Surgeon General's Call to Action to Promote Walking and Walkable Communities. Washington, DC: U.S. Dept of Health and Human Services, Office of the Surgeon General; 2015.*


STEP IT UP!
Surgeon General's Call to Action to Promote Walking and Walkable Communities
CDC

Air Quality, Emission Reductions, and Climate Change

The air quality in metropolitan Atlanta is improving. However, the region still does not meet the current federal standards for ground-level ozone and fine particulate matter, two of the six pollutants regulated under the Clean Air Act. Since active transportation modes produce no harmful emissions, improving active-mode accessibility should be a key goal to ensure a sustainable and healthy future.

Though often contentious, policy decisions around greenhouse gas emissions and climate change outcomes are likely to become increasingly important over the coming decades. ARC's expertise in modeling transportation emissions, evaluating air quality trends, quantifying emissions reductions strategies, and assessing potential environmental outcomes will be invaluable in future debates related to climate change.

Technical challenges remain for both forecasting active transportation mode shift and quantifying emissions outcomes from investment scenarios. As state and federal regulatory frameworks evolve,

ARC will continue to provide technical- and policy-driven insight into the role of active transportation for addressing environmental concerns.

Support Research and Innovation

Few agencies in the Atlanta region have the breadth and diversity of expertise as ARC for developing creative policy and technical solutions for regional problems. ARC has supported academic research efforts including the CycleAtlanta phone app, OneBusAway, Health Impact Assessments, and other innovative efforts that point towards new technologies or policies for improving transportation access, safety, or mobility.

As digital tools and national best practices evolve, ARC should develop funding and technical resources for supporting research and innovation. These efforts may occasionally involve risk or unknown outcomes, but for relatively small investments the region can test ideas that could produce dramatic improvements.

Technology advances have enabled bike share systems, an emerging public transportation option in the US and internationally, to operate effectively and provide biking as a transportation option to a wider range of travelers.

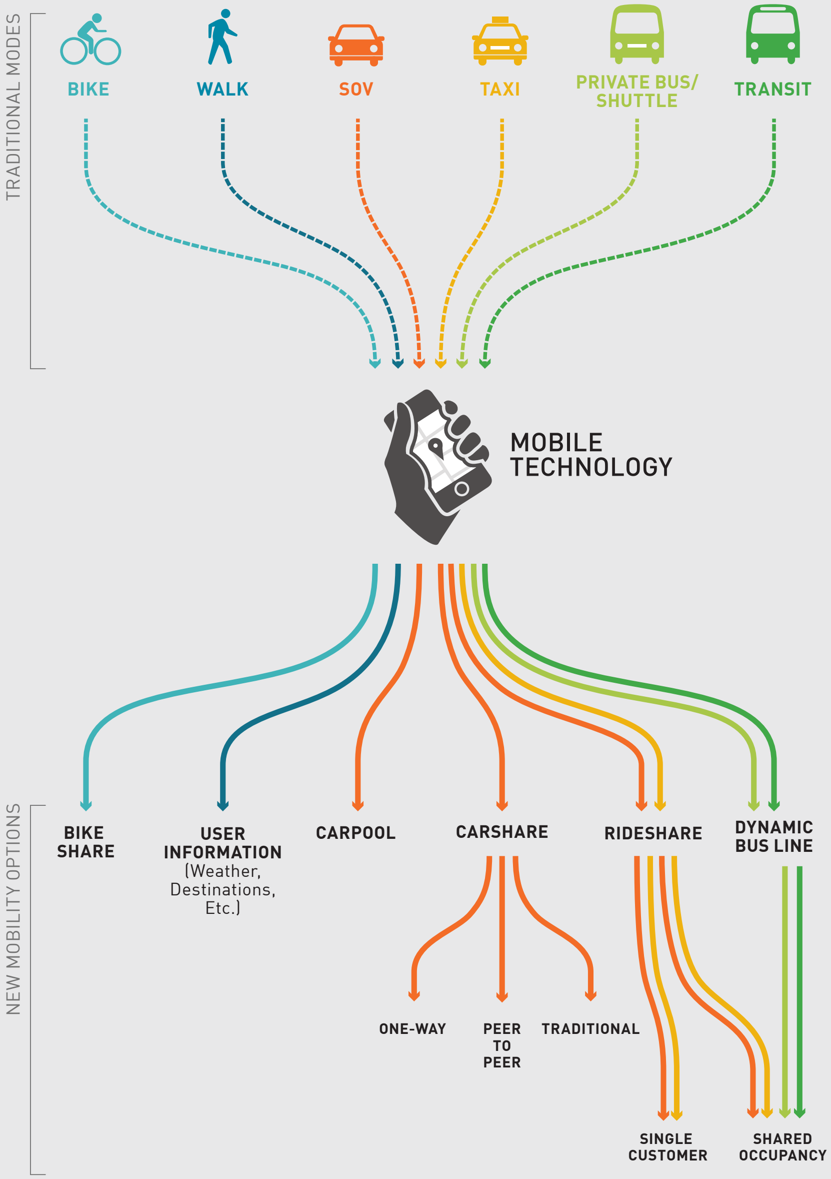
Emerging Technology

Information technology has changed the landscape of transportation options almost as quickly as it has evolved. Mobile computing apps are increasingly at the center of people's transportation decision-making, providing information about weather, destinations, navigation, real-time transit arrival times, multi-modal trip planning, and more. Perhaps the most notable transportation-related technology innovation has been the rise of transportation network companies (TNCs) that connect drivers of personal vehicles with ride-seeking passengers, led by well-known examples Uber and Lyft. Mobile apps that allow users to track the locations and availability of public bicycles are also a key force behind the rapid expansion and evolution of bike share services that can now be found in most major US cities. The intersection of new technology with transportation demand is also poised to offer yet even more travel options into the future, with self-driving vehicles in development in 2015.

The Atlanta Region's Plan is exploring potential impacts of driverless cars in more depth. There is a great deal of uncertainty about how driverless cars will impact our transportation systems and urban form, although some of the ways they might impact walking and biking include:

- Demand for vehicle parking and vehicle ownership could dwindle. Driverless cars can independently seek parking, and at the tap of an app can return the car for the ride home. A fleet of driverless taxis summoned by mobile apps is likely to reduce demand for personal vehicles as well, allowing parking to be converted to other uses.
- Congestion may be reduced, freeing up travel space for biking and walking. If driverless cars are well coordinated, than traffic may flow more smoothly, and less space will be needed for single occupancy vehicles.
- Signal timing will have a different meaning. If people are free to do other tasks while in a car, travel time may become less important, and traffic signals can favor pedestrian and bike traffic. This may also affect people's choices about where to live and travel, if long distances become more accessible.
- Safety will likely improve. Driverless cars may be able to detect and prevent crashes with people on foot or bike. This can dramatically improve safety for everyone, but as always, will require oversight and regulations to ensure high safety standards.

Even with the advent of new technology in travel options, travel by foot remains a fundamental beginning and end of every trip. A complete bicycle and pedestrian system will continue to be a foundation of a broader set of travel options throughout the Atlanta region and should be considered as a means of harnessing the potential of technology-based transportation resources.



EXPANDING MOBILITY OPTIONS WITH TECHNOLOGY ADVANCES

Immediate Action Steps for ARC

Establish a Walk Friendly and Bike Friendly Communities Resource Center

A regional Active Transportation Resource Center can provide an online portal that provides communities with an overview of steps necessary to become more walking- and bicycling friendly, information on developing projects and plans, and resources for applying for national WFC or BFC designations. The Resource Center can help those communities that have already achieved a Walk or Bike Friendly Community designation reach the next award level or focus on specific areas of interest.

Develop a Walk Friendly and Bike Friendly Technical Assistance Program for ARC Region

A Technical Assistance Program can help ARC staff work directly with jurisdictions interested in becoming Walk Friendly or Bicycle Friendly Communities. Technical assistance, based on national Walk Friendly Community and Bike Friendly Community models, may be onsite assessments of needs and a list of recommendations that account for local conditions. In conjunction with the Resource Center, assistance will incorporate national best practices, position communities for national recognition programs, and collaborate with nationally-recognized groups and peers.

Convene an Annual Walk and Bike Friendly Forum

An annual Forum would create an opportunity for communities that are seeking to become walk- and bike-friendly the chance to come together and share information about challenges, ideas, and best practices. Sessions can align communities with peer cities that are a similar size and facing similar challenges. The forum may include classes led by experts on topics such as Safe Routes to School, pedestrian safety countermeasures, and bike infrastructure. Additionally, breakout sessions can improve understanding of steps to reach bronze, silver, gold, and platinum status.

Immediate Action Steps for ARC
(continued)

Create a High Crash Corridor Safety Program

A safety program focused on high crash corridors can bridge the divide between

- Areas that are not able to compete for federal funding, and have small municipal budgets
- Areas with state routes that have a high number of pedestrian or bike crashes

The ARC will work with the Georgia Department of Transportation to identify high crash corridors, perform pedestrian-focused Road Safety Audits, and assist with constructing proven safety countermeasures using Highway Safety Improvement Program (HSIP) funds and other resources.

Develop a Strategy to Maximize the Use of Federal Transportation Funds for Walking and Bicycling

Federal transportation dollars are a key source of funding for the planning and implementation of active transportation projects and programs. ARC distributes a portion of these funds to local governments through a competitive selection process. In order to make the most of these funds, ARC should:

- Work to maximize the share of flexible federal transportation funds that flow to walking and bicycling infrastructure and initiatives
- Develop a quantitative scoring criteria for submitted walking and bicycling projects based on the Regional Focus Areas factors identified on page 15 of this plan chapter

Produce a Regional Walking and Biking Safety Action Plan

Dangerous corridors and broad safety issues that affect pedestrians and cyclists cross jurisdiction boundaries, so a regional approach is required to reduce the number of serious and fatal crashes in metro Atlanta. A regional walking and biking safety action plan would set a framework for addressing broad policy measures and specific safety improvements at dangerous locations.

Provide Evaluation and Measuring Assistance

The Atlanta Regional Commission provides a number of evaluation services that can be specifically applied to pedestrian and bike projects. ARC can analyze crash data trends, loan pedestrian and bike counters, and maintain a database of pedestrian and bike performance measures that align with regional transportation benchmarks. A one-stop service should be created that offers local jurisdictions a quick snapshot of how they are doing according to various metrics.

Create Leadership Training for Board Members and Member Jurisdiction Leadership

The ARC board consists of 39 members – 23 elected officials, 15 private citizens, and a representative from the Georgia Department of Community Affairs. Each official represents an area of roughly equal population across the 10 county region. In addition the region has mayors, county commissioners, and hundreds of influential community leaders.

Regional leaders should have a solid understanding of the elements of pedestrian and bike-friendly networks in order to make knowledgeable funding and planning decisions. A Ped-Bike Leadership Training Course will expand board members, mayors, and county officials' knowledge on issues affecting their districts and create better dialogue on issues of a regional scope. The Leadership Training Course could be followed by presentations from participating board members to local stakeholders and community members.

Offer Regional Trail Coordination Assistance

Trails in metro Atlanta have historically been developed in short fragments without consideration for connecting to the larger region. Trails of regional significance, such as the Beltline and Silver Comet, have changed the focus of dialogue to filling in the gaps.

Creating a cohesive trail system will require communication between many agencies, city officials, and property owners to identify gaps and acquire right of way. The Atlanta Regional Commission can host regional conversations and provide assistance to local municipalities interested in developing or expanding an existing trail within a regional framework. Convening stakeholders, facilitating meetings, coordinating site visits, preparing research and planning materials, and documenting ongoing efforts and regional gaps can all help advance a regional trail system.

Whitlock AV NW
MPC
MARIETTA PIZZA Co.
SWEETWATER
THEATRE IN THE SQUARE

Local Framework:

AN ACTIVE TRANSPORT TOOLKIT FOR CITIES AND COUNTIES IN THE ATLANTA REGION

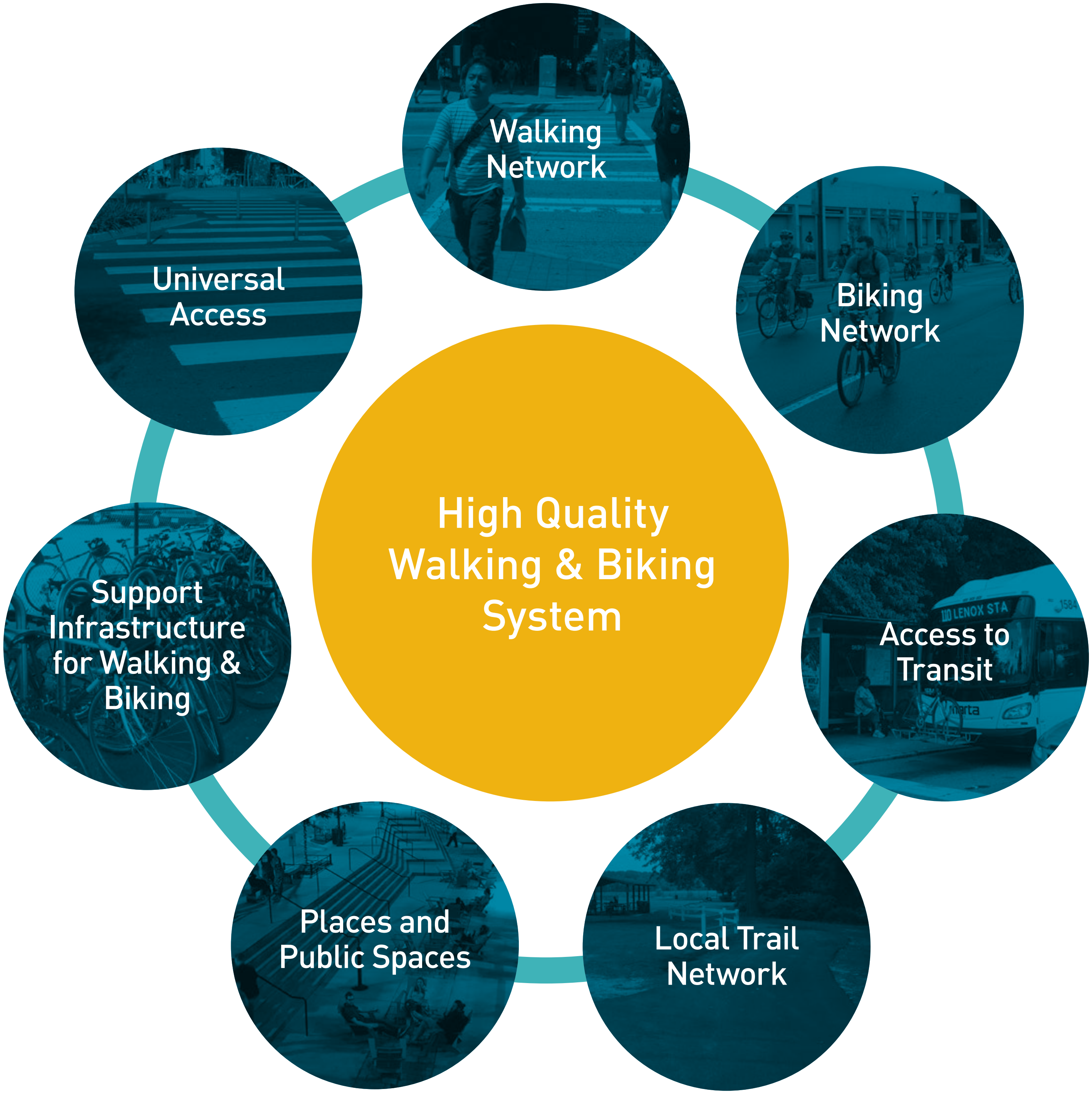
This section provides guidance for cities and counties in the Atlanta Region on a wide variety of topics related to walking and bicycling. It includes guidance on the elements of high quality walking and bicycling systems, recommendation on decision-making and process, an overview of the Walk Friendly and Bike Friendly Communities programs, and the elements of local bicycle and pedestrian master plans. It also includes characteristics of good active transportation projects, policies that support walking and bicycling, programs and marketing ideas, funding resources, and suggestions for ongoing evaluation and monitoring.

Elements of a High Quality Walking and Biking System

This section provides a set of organizing principles for creating walkable, bikeable places. It describes a concept called the "20 minute neighborhood" and includes:

- guidance for local jurisdictions on walking networks
- biking networks
- access to transit
- local trail networks
- places and public spaces
- support infrastructure for walking and biking
- universal access

The ARC Sweet Auburn Living Beyond Expectations demonstration project created the conditions that are part of a high quality walking and biking system - one that is is safe, convenient, and connected for all ages, abilities, and backgrounds.



High Quality Walking & Biking System

Walking Network

Biking Network

Access to Transit

Local Trail Network

Places and Public Spaces

Support Infrastructure for Walking & Biking

Universal Access

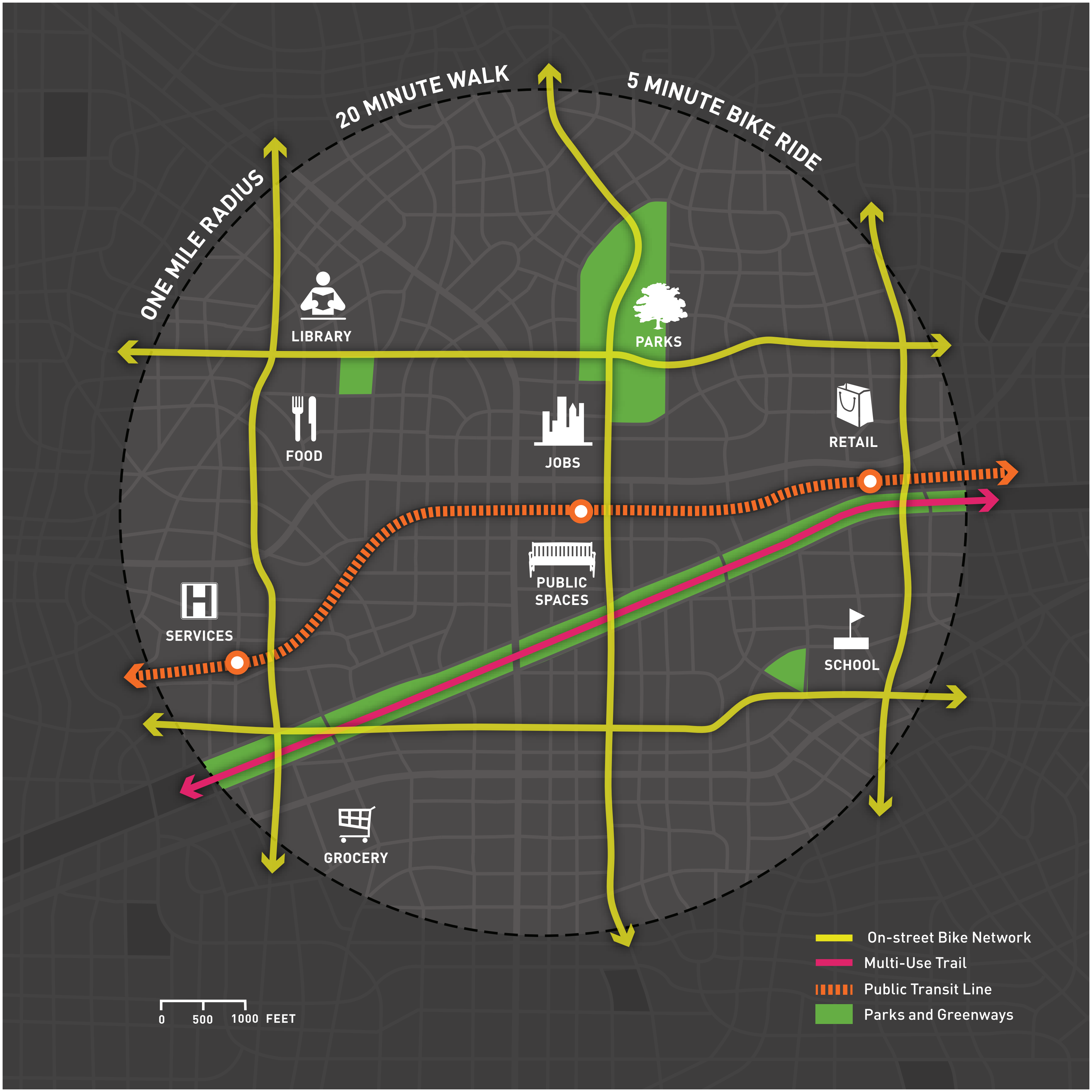
The "20 minute neighborhood": An Organizing Principle

The regional active transportation system is appropriately conceptualized as a series of walkable, bikeable neighborhoods connected by regional trails and transit. Because walking and biking trips tend to be relatively short, the neighborhood is a practical scale for bicycle and pedestrian planning. The "20 minute neighborhood" is a concept used here to help illustrate how a set of land use and transportation planning principles can result in a built environment where the majority of residents' needs are within a 20 minute walk.

Key features of the 20 Minute Neighborhood are:

- A fine-grained mix of land uses including destinations such as parks, schools, commercial areas, and a variety of housing types
- A connected street grid, ideally with 300-600 foot block lengths
- A connected bicycle network featuring bikeways at least every half mile
- Convenient connections to trails and transit

Farmers markets, such as this one in Sandy Springs, create opportunities for people to walk and bike to shop from nearby neighborhoods or jobs.

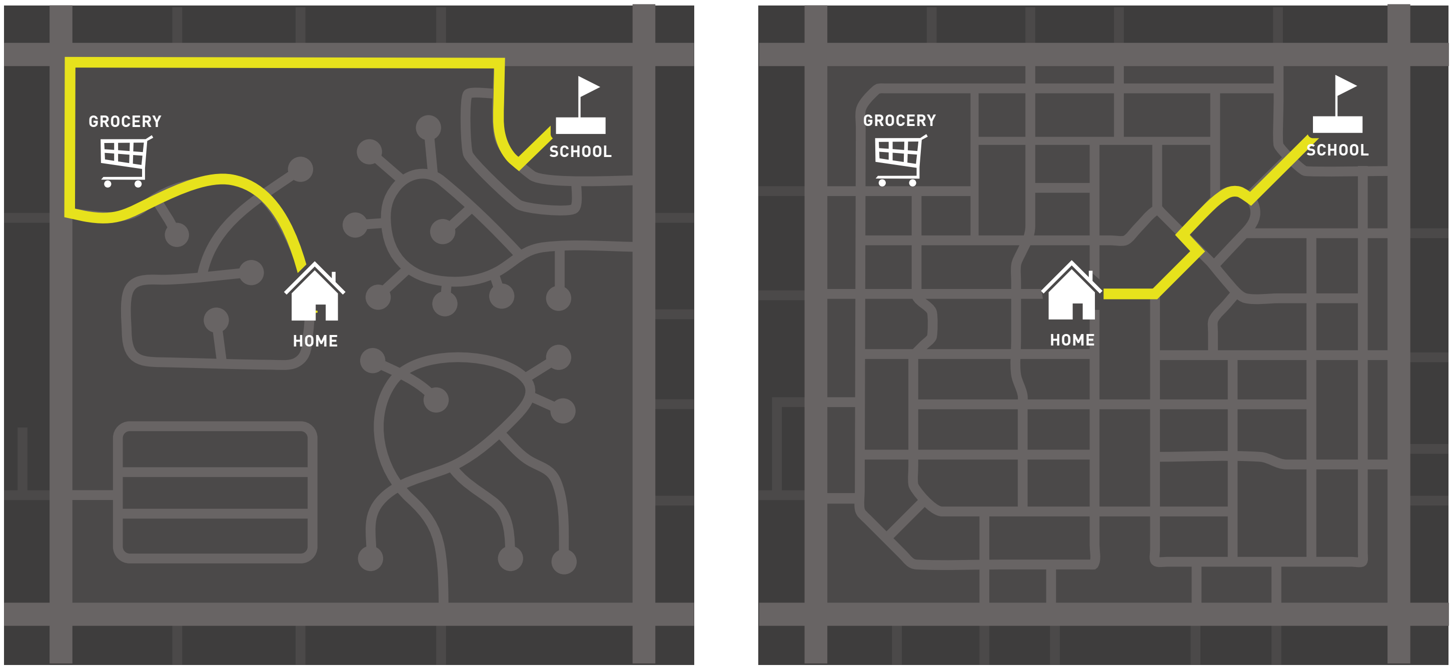

ONE MILE RADIUS
20 MINUTE WALK
5 MINUTE BIKE RIDE
LIBRARY
PARKS
FOOD
JOBS
RETAIL
PUBLIC SPACES
SERVICES
SCHOOL
GROCERY
On-street Bike Network
Multi-Use Trail
Public Transit Line
Parks and Greenways
0
500
1000 FEET

Walking Network

Sidewalks and trails make up the core of local walkway systems. Parks, public squares, informal pathways, alleys, and parking lots should also be considered part of the pedestrian network. And because people walking prefer direct travel, every segment of every street should be considered part of the pedestrian circulation system even if no sidewalk is present.

Characteristics of a high-quality local walking system:

- **Connectivity:** The system should form a connected network of sidewalks, paths, and public spaces that serves key destinations and districts including schools, commercial areas, and transit stops.
- **Directness and Efficiency:** Sidewalks and pathways should provide direct links between destinations, minimizing unnecessary out-of-direction travel. Crossings should be frequent and signalized crossings should minimize delay for people walking.
- **Safety and Comfort**: Attention to design and maintenance details that impact safety and comfort such as adequate walkway width based on context and demand, landscaped buffers, pedestrian-friendly curb radii, highly visible and intuitive crossing treatments, street tree types and placement, street lamp designs, and building façade standards.
- **Universal Access:** Smooth, stable, barrier-free design that is compatible with wheelchairs, walkers, mobility canes, and other devices used by the people with disabilities or visual impairments.
- **Social Space:** The walkway system should include spaces for standing, visiting, and sitting. The sidewalk area should be a place where adults and children can participate in public life.



Connected street networks provide direct connections to destinations for walking and biking trips.

Biking Network

Bikeways come in multiple forms, including on-street bike lanes and bicycle boulevards in addition to off-street facilities such as trails and greenways. Bikeways should form a logical hierarchy of facility types that serve different functions (i.e. higher speed commuter routes vs. low stress family-friendly routes) and appeal to the full range of users.

Characteristics of a high-quality biking network

- **Connectivity:** An interconnected network of bikeways that serves key destinations and districts including schools, parks, commercial areas, and transit stops. East-west and north-south bikeways should be spaced roughly a half-mile apart, forming a minimum grid.
- **Convenience:** The bicycle transportation system should minimize delay for all users, minimize out-of-direction travel, allow for bicyclists to pass each other, and provide wayfinding guidance to other bikeway connections and popular destinations.
- **Safety:** The design and maintenance of bikeways should minimize the potential for bodily harm. This includes maintaining a smooth and stable surface, providing adequate operating space, ensuring bicyclist visibility at intersections and roadway crossings, and creating a predictable environment for all path and/or road users.
- **Comfort:** The bikeway network should not induce stress for any mode of transportation – not for people bicycling, walking or driving. On-street bikeways should enhance comfort either through the provision of dedicated space for bicyclists, or by creating a traffic-calmed bicycle priority environment. Off-street bikeways should be adequately buffered from fast-moving vehicles and include enhanced crossing treatments at roadway intersections.
- **Inclusion:** The network should accommodate people of all ages and abilities, and transportation as well as recreational trip types. Route and facility selection should be informed by topography, traffic speeds and volumes, and the frequency of driveways and access points.

Photo credit: Susie Philipsen

A well connected bikeway network provides easy access to daily destinations and other forms of transportation.

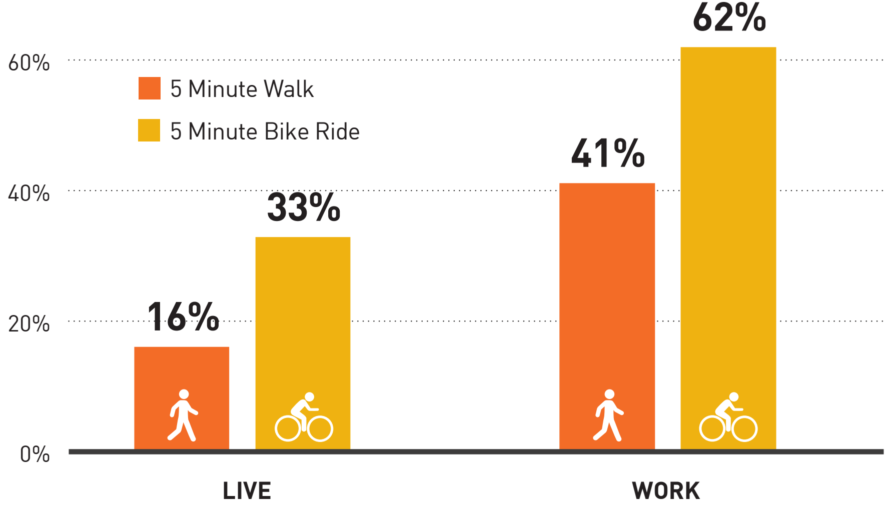
Access to Transit

In a large, polycentric region such as metropolitan Atlanta, transit service is a key resource in expanding mobility options and serving a full range of travel needs while reducing reliance on driving. Bicycle and pedestrian planning decisions in communities served by transit or looking to a future with transit service should be made with facilitating transit service in mind.

Key considerations include:

- **Coordination with the thoroughfare system.** Several counties in the region do not currently have transit or have plans to introduce transit service. However, planning for bicycle and pedestrian networks can be done in a way that is compatible with transit in the future by focusing connections on key corridors and thoroughfares. These are likely to be the locations of commercial and employment-generating land uses.
- **Access to premium and priority routes,** or to corridors with greater transit propensity. Not all transit service is equal in providing regional mobility—some services, such as MARTA's rail network and GRTA's express route system, operate rapid, limited-stop connections across long distances, where others focus on a greater level of neighborhood coverage and make many more stops.
- **End-of-trip facilities and information for users.** Among the greatest barriers to greater levels of transit use that most riders perceive is a lack of information and amenities. Stops should include schedule and route information, and bicycle and pedestrian facilities should include appropriate wayfinding to guide users to the location of transit facilities. Bicycle and pedestrian projects should also integrate storage for bicycles at transit stops.

PROXIMITY TO TRANSIT IN THE ATLANTA REGION



Source: 2010 US Census and ARC

Connections in Communities with Existing Transit Service

Nearly three quarters of transit trips in metro Atlanta begin with a walk to a bus stop or MARTA station.1 Improving walking conditions along the streets used to access these stops is a key opportunity to increase pedestrian safety and make transit more attractive and convenient for more people.

According to a 2010 on-board survey conducted by ARC, about 80% of all walking trips to transit took five or fewer minutes. This is consistent with the use of a catchment area of about a quarter mile from transit stops. While it makes sense to prioritize pedestrian access-to-transit improvements in this limited catchment area, it is worth noting that many factors influence the distance people will walk. Frequency of the transit service is one major factor. See pages 32-34 of the Assessment for more on transit propensity.

Catchment areas are expanded when:

- Stations are integrated into the surrounding community, with direct and easy access
- The street network is connected with short block lengths and direct routes
- The infrastructure supports and respects people who walk, with active streetscapes, interesting architecture, adequate lighting, wide sidewalks, frequent and safe crossings
- Wayfinding is clear and oriented towards people walking (i.e. signage that shows walking distance to transit stops in minutes)
- There is a perception of safety
- Vehicle parking is limited

Only 16% of people in the Atlanta region live within a five minute walk of a transit stop. More than double that amount – a full third of all households – live within a 5 minute bike ride of a transit stop. Improving bikeway connections to transit stops and providing related support infrastructure like bike parking helps expand the range of travel options when bicycling alone is impractical.

Bikeway network planning and development should take transit stop spacing into account to facilitate seamless connections, and wayfinding signage should include information about transit stop locations and travel times. Finally, bike parking should be considered at transit stops so that people have the option to store their bike at the bus stop or transit station.

Connections in Communities with No Existing Transit Service

Not currently having transit service in a community does not mean the community will never have this service. Even in communities with no current plans or desires for public transit, defining bicycle and pedestrian projects and programs that connect to high-walking and biking propensity corridors is likely to connect residential areas with employment and commercial corridors and nodes, and in so doing satisfy some of the community's travel demand (especially on shorter distances).

ONLY 16% OF PEOPLE IN THE ATLANTA REGION LIVE WITHIN A FIVE MINUTE WALK OF A TRANSIT STOP.

MORE THAN DOUBLE THAT AMOUNT— A FULL THIRD OF ALL HOUSEHOLDS—LIVE WITHIN A FIVE MINUTE BIKE RIDE OF A TRANSIT STOP.

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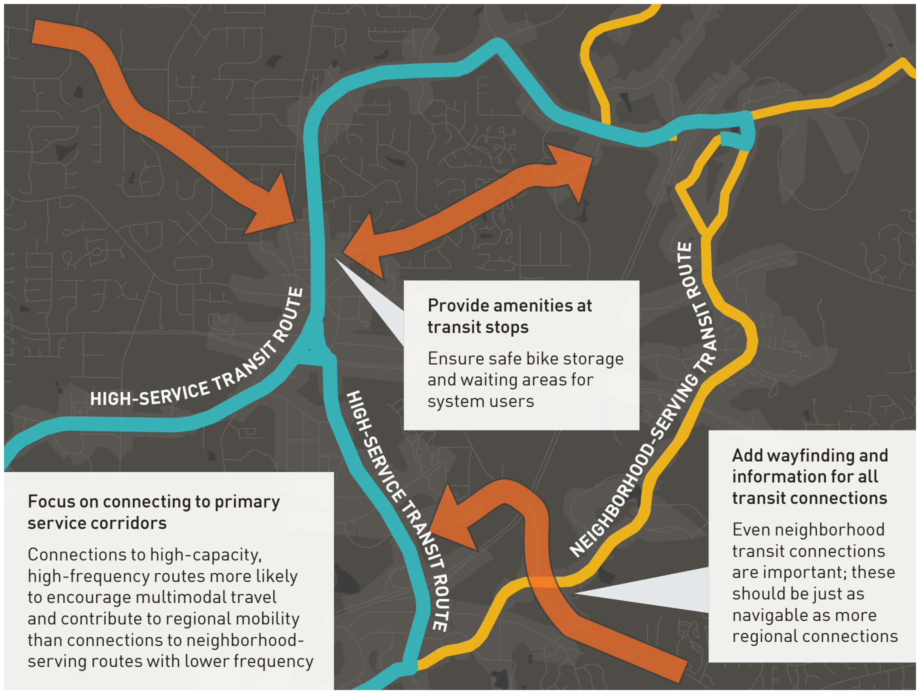
[1] *Regional On-Board Transit Survey Final Report (2010)*

Connections in Communities with Existing Transit Service

FACTORS TO CONSIDER

- Transit service frequency and capacity: coordinate with transit provider
- Transit dependency in community/ area population
- Available right-ofway or potential for easement/acquisition along transit route's intersection with project
- Transit agency plans for service expansion, relocation or elimination
- Potential for transit to serve regional employment areas
- Current condition of transit stops and stations


HIGH-SERVICE TRANSIT ROUTE
HIGH-SERVICE TRANSIT ROUTE
NEIGHBORHOOD-SERVING TRANSIT ROUTE

Provide amenities at transit stops

Ensure safe bike storage and waiting areas for system users

Focus on connecting to primary service corridors

Connections to high-capacity, high-frequency routes more likely to encourage multimodal travel and contribute to regional mobility than connections to neighborhood-serving routes with lower frequency

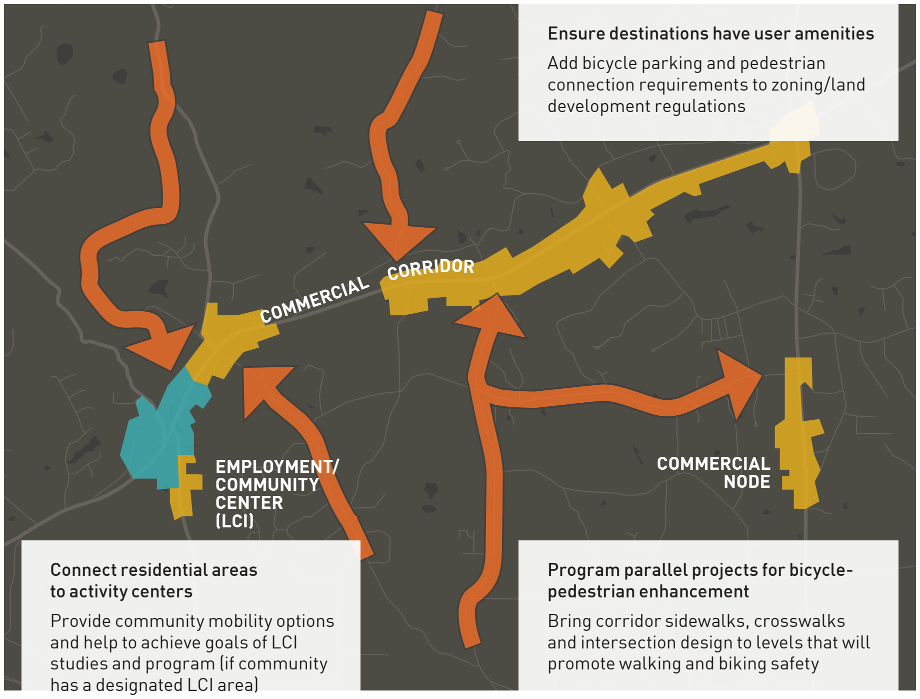
Add wayfinding and information for all transit connections

Even neighborhood transit connections are important; these should be just as navigable as more regional connections

Connections in Communities with No Existing Transit Service

FACTORS TO CONSIDER

- Needs for multimodal connection as defined in county CTP
- Land use balance in the area and potential for short trip connections
- Availability of right-of-way or other potential corridors for walking and biking activity
- Public interest in transit or past studies of transit feasibility
- Corridor land use characteristics and presence of neighborhood serving uses
- Corridor constraints for parking or access that may suggest non-motorized access as a key strategy



Ensure destinations have user amenities

Add bicycle parking and pedestrian connection requirements to zoning/land development regulations

Connect residential areas to activity centers

Provide community mobility options and help to achieve goals of LCI studies and program (if community has a designated LCI area)

Program parallel projects for bicycle-pedestrian enhancement

Bring corridor sidewalks, crosswalks and intersection design to levels that will promote walking and biking safety

110 LENOX STA
1584
marta
marta
8 LB BASS
15 MINUTE FIGHT
THIS IS MY WORLD
WHAT IF
YOU'D NEVER SAID "I DO"
HINDSIGHT

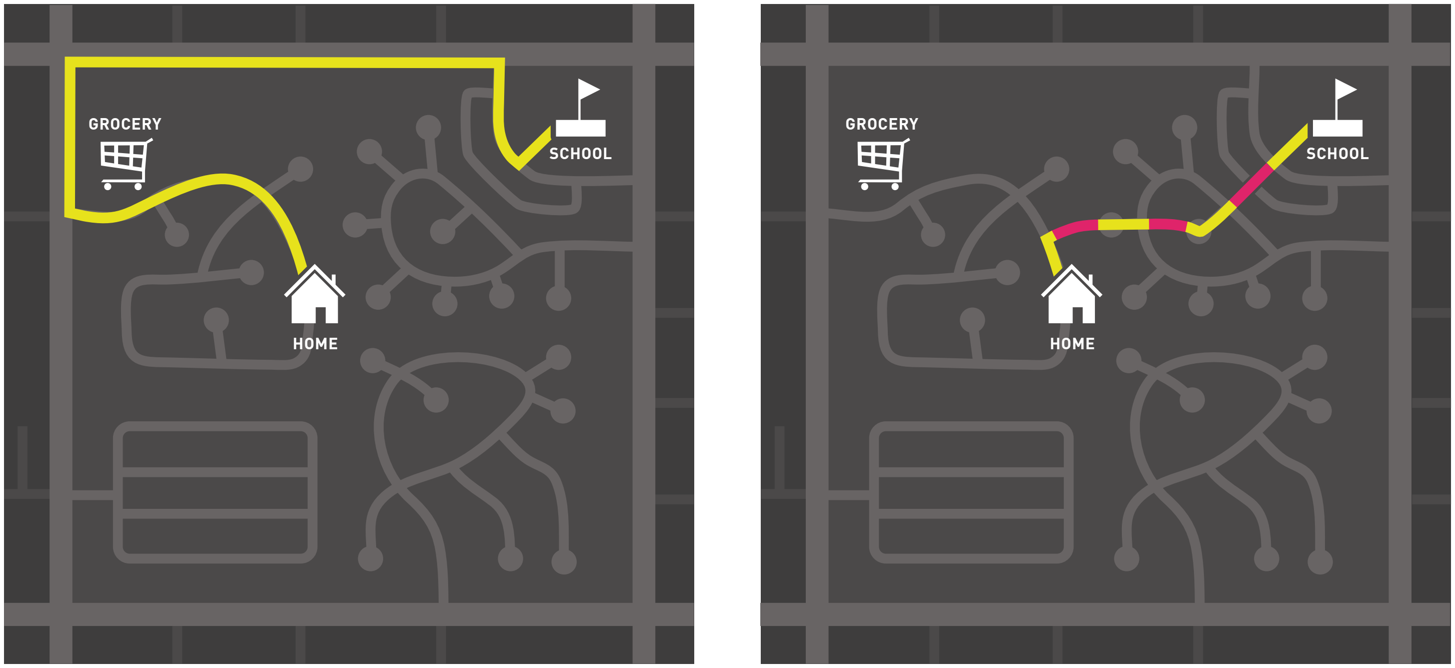
Local Access Trail Network

Local access trail networks provide low stress, off-street walking and bicycling connections between local destinations. While regional trails facilitate long-distance travel across jurisdictional boundaries and between regional destinations, the focus of local trail networks is improving connectivity between neighborhoods, parks, schools, libraries, main streets, and commercial nodes. Even short segments of trails can make a big impact on connectivity when they provide direct connections between destinations that the roadway network does not facilitate. Short trail segments like these are sometimes called neighborhood accessways.

Local trail networks that serve a transportation purpose in addition to providing recreational opportunities generate the greatest benefits. They should complement the on-street bicycling network and connect to the regional trial system when possible.

Peachtree City's 90 mile network of multi-use paths for pedestrians, bicyclists, and golf carts is the best example of a mature local access trail network in the region. The network allows residents and visitors to access many everyday destinations without the use of a car and supports healthy, active lifestyles.

Local trails provide neighborhood connections to parks, schools, businesses, and other local destinations



Short trail segments or "Neighborhood Accessways" can have a dramatic effect on the connectivity of the network for people walking and biking.

Places and Public Spaces

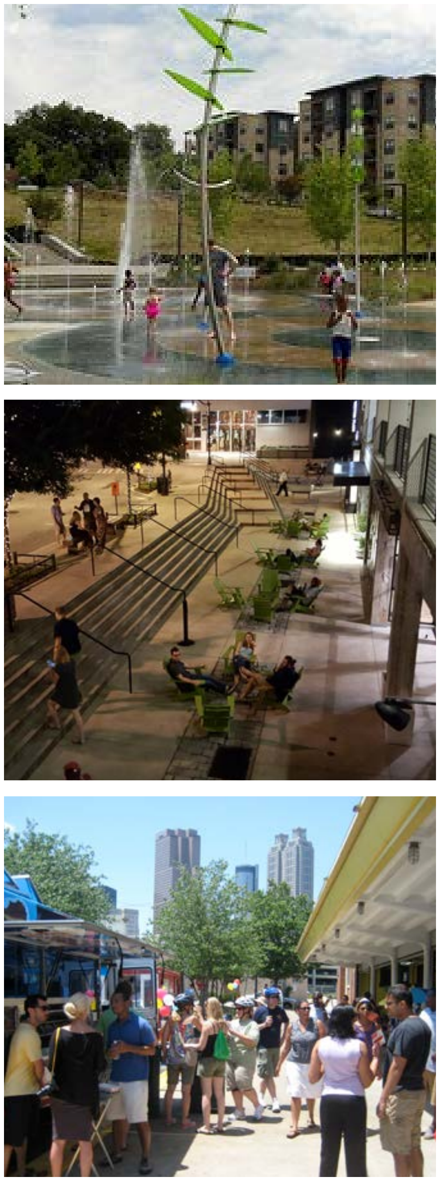
Investing in high quality active transportation infrastructure is a critical part of achieving the convenience of the 20 Minute Neighborhood concept. Yet without destinations like grocery stores, schools, parks, restaurants, places of worship, barber shops, post offices, coffee shops, laundromats, doctors' offices, and banks within walking or biking distance, the system will not function well for people on foot or traveling by bike. Particularly in parts of the region dominated by large-lot residential areas, land use policy and development incentives that encourage a fine-grained mix of land uses may be better tool for improving walkability and bikeability than transportation improvements.

For centuries (and not that long ago) streets served as the basis for public life in cities. Streets are still the most basic and ubiquitous public spaces in our towns and cities, but they are often overlooked as places devoted to vehicle movement and parking. Streets have been and can be much more than this, serving multiple purposes and contributing to the social, economic, and political life of towns and cities. Reimagining streets as places is a great starting point when thinking about opportunities to expand public spaces and create vibrant people-friendly places. This can take a variety of forms, including complete streets projects, sidewalk cafes, pedestrian-oriented streetscape design, open streets events, block parties, public markets, neighborhood greenways,
and the conversion of on-street parking to parklets.

Parks and public squares and plazas are also commonly-found public spaces in the Atlanta region. Parks and public squares and plazas increase livability by providing spaces for social interaction and recreation in addition to catalyzing private investment and fostering grassroots entrepreneurial activities.

The design of public spaces should:

- **Encourage social interaction.** The design should make people want to linger and chat, and provide spaces for conversation and people-watching.
- **Support specific activities based on the target users.** For example, you might provide a playground and splash pad for children in a residential park but outdoor chess boards or places for pop-up vendors may be more appropriate in an urban square.
- **Increase connections between adjacent buildings, roadways, and paths.** The design should provide pathways and vistas that promote connectivity for people traveling through the space, and make it easy to access.
- **Draw people in.** Distinctive features such as fountains, public art, and landscape design should alert residents and visitors to the fact that they have arrived at a significant gathering place that is a landmark in the community.
- **Contribute to a sense of place.** Drawing on local culture, history,

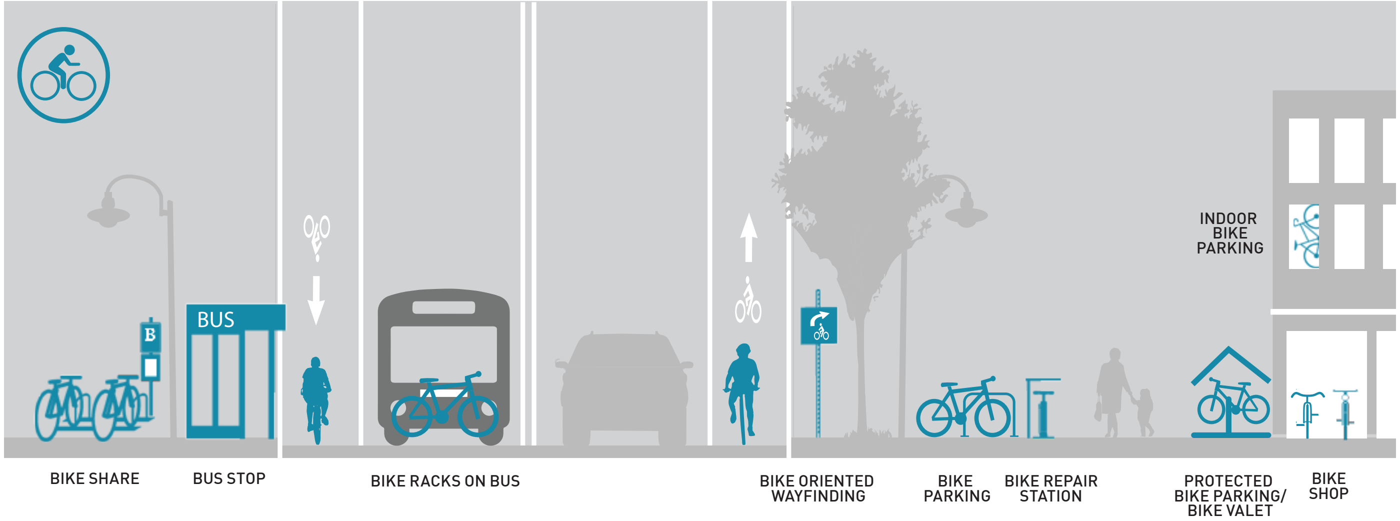


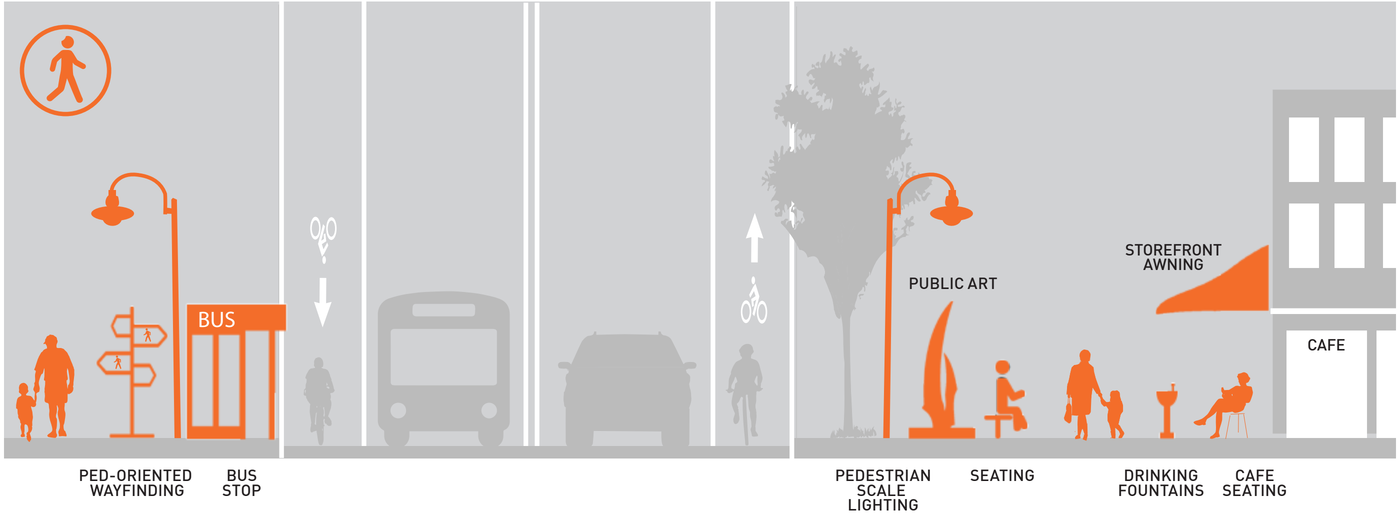
High quality public spaces provide a sense of place and encourage social interaction.

Support Infrastructure for Walking and Biking

Shade trees, street furniture, trash receptacles, water fountains, human-scale wayfinding, public art, public restrooms, and pedestrian scale lighting are sometimes referred to as "pedestrian amenities." Thinking of these features as extras, however, underestimates the importance of providing relatively basic elements that make walking pleasant, comfortable, convenient, and interesting. Therefore, it's better to think of these "amenities" as practical and necessary support infrastructure for walking.

Similarly, supporting bicycling means going beyond developing a safe, comfortable, and connected bikeway network. The good news is that the key support infrastructure for bicycling – such as wayfinding and bike parking - is relatively inexpensive and easy to provide. Wayfinding elements include signage and/or pavement markings that direct users to popular destinations and other bikeways. Short term bike parking includes bicycle racks and corrals, which are clusters of racks that can be installed in on-street parking spaces. Long term, secure bike parking is typically provided by developers and employers, and local development codes should either require or incentivize its provision.





Universal Access

The walking network must be accessible to people of all ages and abilities, including people who use mobility aids such as wheelchairs and walkers, or who have visual or hearing impairments. An inclusive active transportation system supports the mobility of people with disabilities and removes barriers to access. This includes things like providing ADA compliant curb ramps with tactile warning strips at every intersection, ensuring the cross-slope of sidewalks does not exceed 2%, and installing accessible pedestrian signals. The Americans with Disabilities Act provides the legal imperative for universal access, and The United States Access Board's 2013 A*ccessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way and Shared Use Paths* provides detailed guidance on universal access design.

Accessible push buttons, textured curb ramps, signalized crossings, and high visibility cross walks improve crossing safety for all users."

Streets should be easily navigable by all users, particularly those with special mobility needs such as those in wheelchairs.

Become a Walk Friendly, Bike Friendly Community

Walking and bicycling trips are generally short and local. The organizing principles of this plan – 1-3 mile travelsheds and "20-minute" neighborhoods – highlight the importance of community-scale planning to improve active transportation trips.

While transportation infrastructure – roads, sidewalks, crossings, bikeways – are critical for improving walking and bicycling, other pieces – local policies, ordinances, and programs – must also be used to make communities that are truly walking- and bicycling-friendly.

This plan's Walk-Friendly and Bike-Friendly Community framework incorporates the many pieces that must be used to make walking and bicycling safe, comfortable, and normal forms of transportation. The elements of a WFC/BFC are detailed below along with how to use local planning efforts to participate in national programs for recognizing outstanding local places.

Cities and Counties in the region should use the Walk Friendly and Bike Friendly Community framework for:

- Self-evaluation and comparison with other regional communities
- Developing master plans and implementation/capital plans
- Marketing to businesses, visitors, and potential residents
- Increasing programming in the weak areas noted in the WFC/BFC survey
- Grant applications

Becoming a Walk Friendly and Bicycle Friendly Community means building infrastructure, adopting supportive policy, and implementing programs, such as Safe Routes to Schools, to make it regular, safe, and convenient to walk and bike to daily destinations.

The 6 Es

This plan uses "6E's" to build Walk-Friendly and Bike-Friendly Communities: engineering, education, evaluation, enforcement, encouragement, and Equity. Comprehensive pedestrian and bicycle plans should address all six elements to effectively advance pedestrian and bicycling activities in a community. Communities seeking status as WFC and BFC must be able to demonstrate activities in each of the first Five E's. Many communities are now adding Equity as the sixth element.

ENGINEERING refers to infrastructure-related elements such as:

- Bikeways and crossings for bicyclists
- Sidewalks and pedestrian crossing treatments
- ADA accommodations

EDUCATION refers to non-infrastructure efforts aimed at teaching people how to bike and walk safely, such as:

- Safe Routes to School Programs
- Bicycle education programs for adults
- Education and training programs related to walking and biking safety, design and education for municipal staff
- Driver education related to speeding and crosswalk laws

ENCOURAGEMENT refers to programs that make walking and biking visible and normal activities, such as:

- Georgia Commute Option Bike Challenge
- Bike to Work Day
- Walking or biking advocacy groups
- Walking or biking maps

ENFORCEMENT refers to how the law enforcement system treats walking and biking, for example:

- Law enforcement officials on foot or bike patrols
- Local ordinances that address walking and biking safety and accessibility
- Collaboration between police and traffic engineers to review problematic sites that need walking or biking enhancements
- Specific training for public safety officials on bicycle and walking traffic laws

EVALUATION AND PLANNING refers to studying, planning, and measuring the walking and biking environment, including:

- Transit service
- Walking, biking and trails master plans
- Policies that require new development to have a street network that is conducive to walking and biking
- Collection of walking and biking data

EQUITY refers to making safe, healthy, affordable, and convenient transportation options available to everyone in every community of the region.

- See the "Walking, Biking, and Equity: Making the Connection" section in the Regional Framework section of this chapter, and "How to Talk about Equity" later in this section.

How to Apply for National Designation

The Walk Friendly Community (WFC) program, led by the Pedestrian and Bicycle Information Center (PBIC), and Bicycle Friendly Community (BFC), led by the League of American Bicyclists, are national initiatives intended to encourage communities to improve their local active transportation systems.

Both programs incorporate assessments that are useful for discovering where a community stands with respect to pedestrian and bicycling facilities and activities. The WFC and BFC assessments recognize existing success in communities that already promote walking and biking as well as provide a framework for those areas trying to achieve higher walking and bicycling rates.

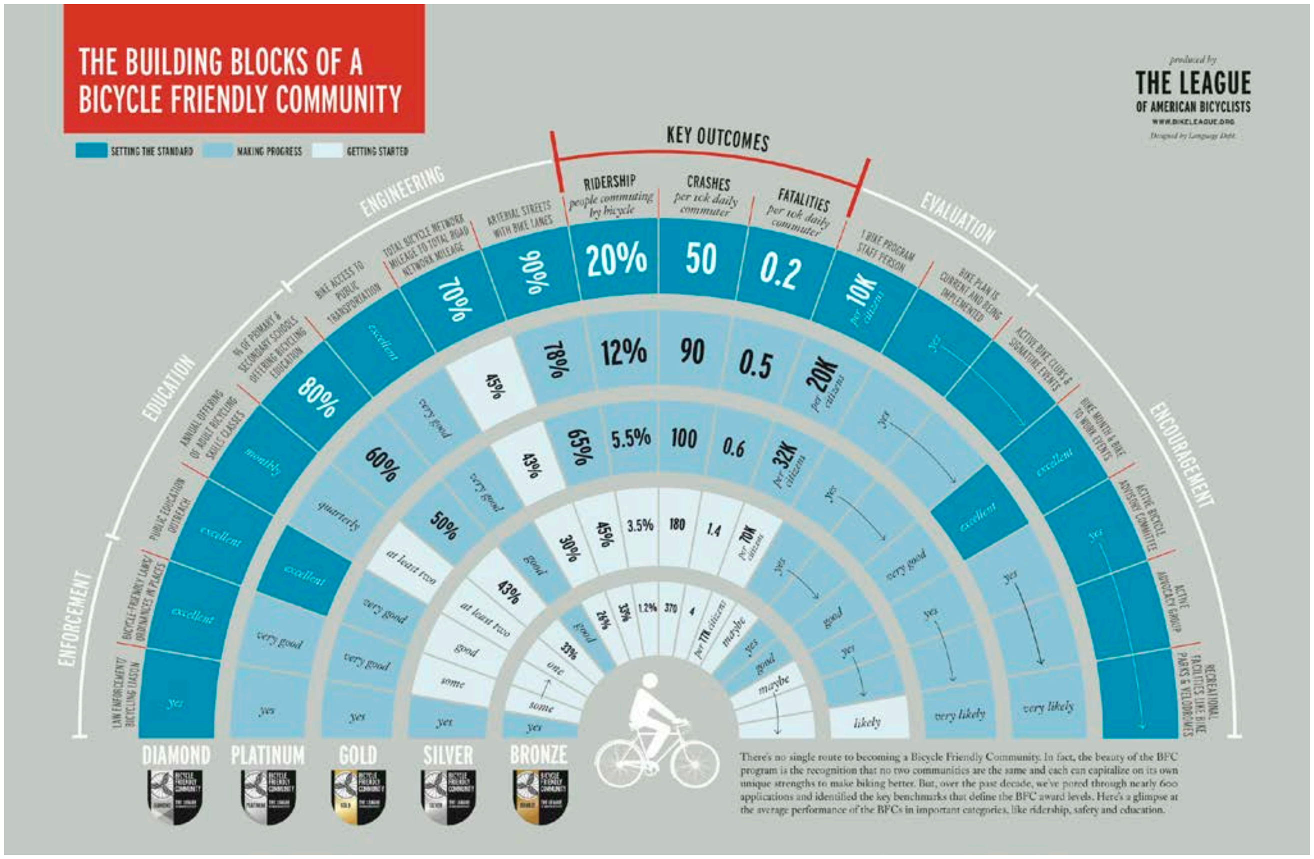
The applications for BFC and WFC begin with questions about the community itself, followed by sections for each of the 5 Es, which ask about the existence and characteristics of infrastructure, plans, and programs related to walking and biking. Both programs publish previews of their applications, which can be used to help the community prepare before it submits the final application online.

- BFC application preview: www.bikeleague.org/community.
- Walk Friendly Assessment Tool: www.walkfriendly.org/WFC_Assessment_Tool_Sept2012.pdf

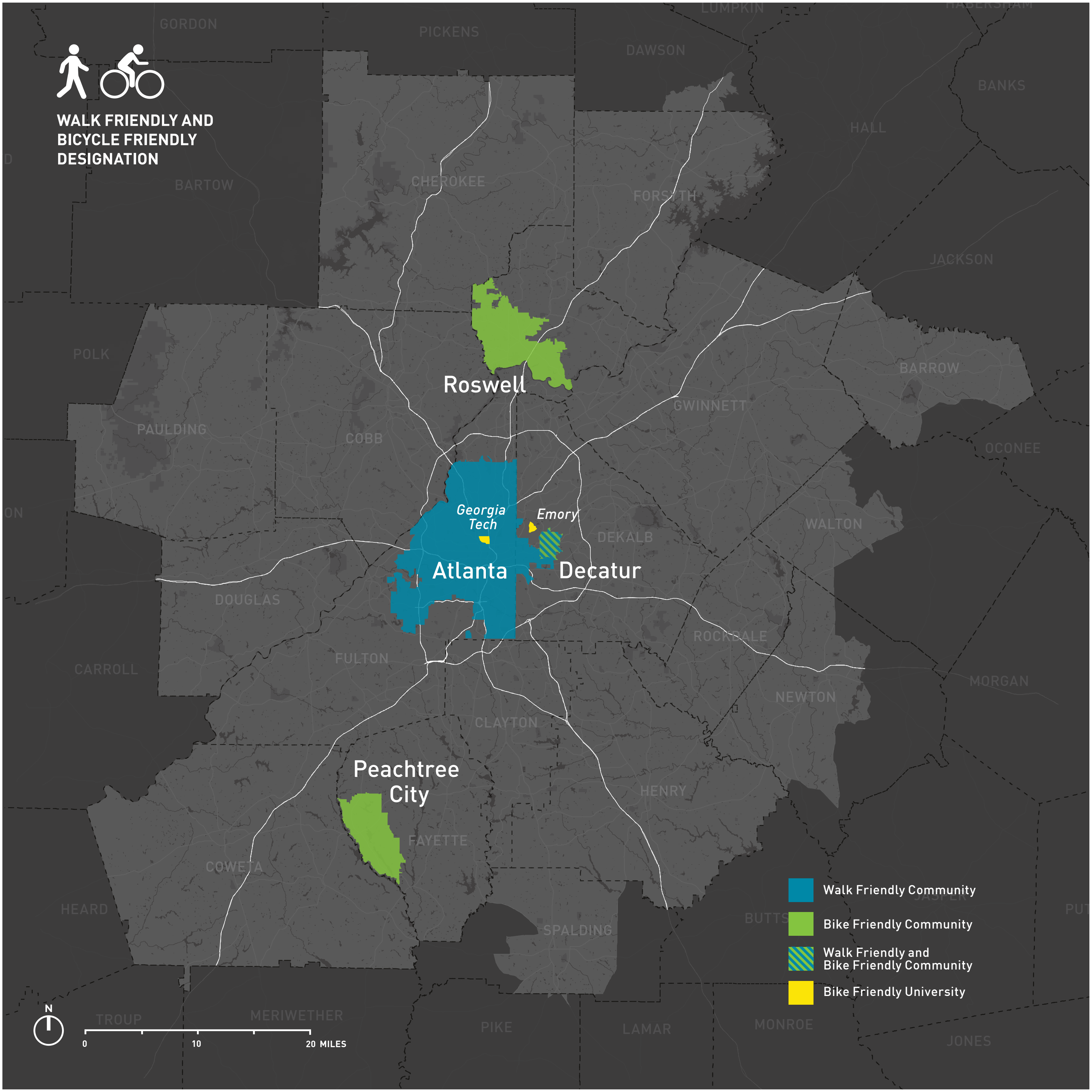
Current Designations and Additional Information

There are currently two WFCs and three BFCs in the region. WFCs include Atlanta and Decatur and BFCs include Decatur, Roswell and Peachtree City. For both walking and biking, other cities and counties within the Atlanta Region have infrastructure, policies, or programs in place to become a WFC or BFC.

However, there are significant gaps related to these topics too. Based on responses to the Walk-Friendly and Bike-Friendly Communities Survey, **Atlanta communities are strongest in the area of engineering, with most room for improvement around education.** For a regional perspective on the 6Es, see the "Walk Friendly and Bike Friendly Community Survey" section of *Part 3: Public Input and Priority Topics.*



There's no single route to becoming a Bicycle Friendly Community. In fact, the beauty of the BFC program is the recognition that no two communities are the same and each can capitalize on its own unique strengths to make biking better. But, over the past decade, we've pored through nearly 600 applications and identified the key benchmarks that define the BFC award levels. Here's a glimpse at the average performance of the BFCs in important categories, like ridership, safety and education.


WALK FRIENDLY AND BICYCLE FRIENDLY DESIGNATION

Develop a Pedestrian and Bicycle Master Plan or Plans

Bicycle and pedestrian master plans document a community's vision and action steps for improving the attractiveness of bicycling and walking. Active transportation plans leverage the benefits of overall livability to everyone, regardless of whether people choose not to walk or ride.

When preparing for the planning process, keep in mind that the needs of pedestrians differ from those of bicyclists, and therefore should be considered independently. While this does not necessarily require the production of separate plans for each mode, doing so tends to produce more detailed mode-specific recommendations.

Available funding and the level of political support for walking and bicyciling, however, may make it more practical to produce one integrated plan that covers both modes.

A Vision, Goals, and Objectives

The vision and goals create the framework and guide all policy, project, and program recommendations. A clear vision expresses the community's aspirations for a bicycling and walking network. It should be bold and achievable. Goals are broad statements that reflect the larger vision but describe more explicitly the end results a community wants to achieve. Objectives are a group of tasks or initiatives that, if completed, will result in (or at least move toward) the accomplishment of a particular goal. While goals can be somewhat general, objectives should be more specific and measurable.

Existing Conditions

Creating a clear image of where the community is now enables a comparison with where the community wants to be in the future. Analysis of existing conditions uses a combination of data, maps, photos, and words.

Needs Assessment

A needs assessment builds on the existing conditions report by summarizing the likely changes required in order to move towards the desired outcomes stated in the vision and goals. The content of the needs assessment will come from two main sources: 1) an analysis of existing conditions and projected trends, and 2) the results of the public engagement process.

Recommendations

Crafting recommendations involves prioritizing new infrastructure for people who walk or bike, supportive programs, and policies. Any approach will depend on previously identified needs, opportunities and constraints, the size and complexity of the geographic area, and budget. In all cases, the vision, goals, and objectives should drive the process.

Projects

Developing pedestrian networks at a scale larger than a neighborhood can be challenging. A common approach to enhancing the pedestrian network is to focus on smaller opportunity areas within a city or county, such as corridors with identified pedestrian safety issues and areas within a half-mile of schools, transit, parks, and libraries.

Programs

The cities with the highest non-motorized mode shares not only have well connected sidewalk and bikeway infrastructure and supportive policies, but have also funded extensive educational, encouragement, and enforcement programs. Safe Routes to School is a good example of a program that includes all three of these elements and is almost universally well-received because of its focus on supporting the health and safety of children.

Policies

Policy recommendations are intended to guide future actions. It is not uncommon for plans to include multiple objectives or strategies aimed at increasing the pedestrian and bicycle friendliness of policy in specific areas such as road maintenance, transportation planning/engineering, land use planning, and law enforcement.

Implementation Strategy

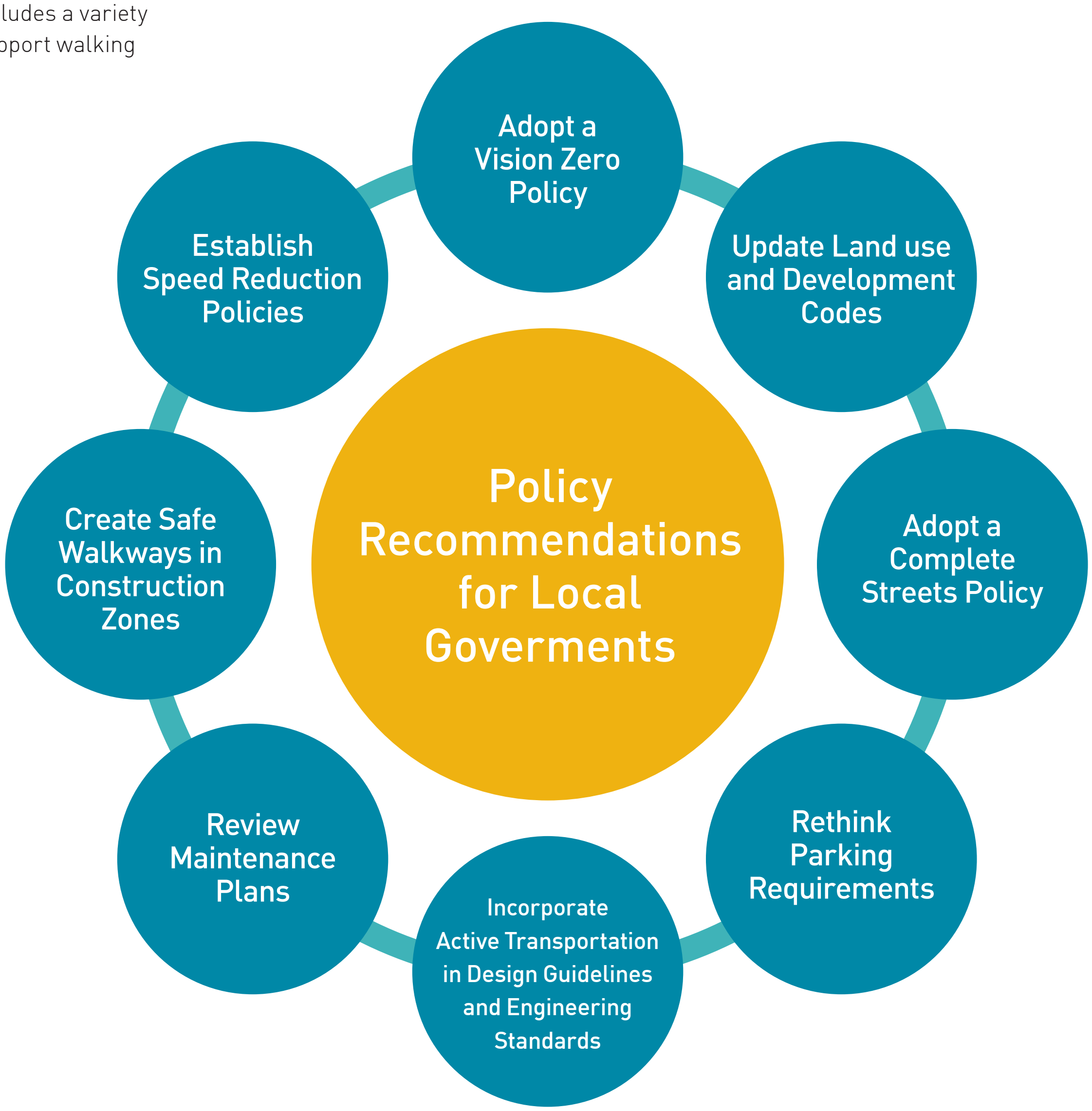
Creating an implementation plan is a critical but often overlooked step. It should be detailed, yet easy to use. At a minimum, the implementation plan should include 1) a prioritized list of actions 2) an annual work plan calendar 3) a budget, and 4) agencies or persons responsible for realization.

Performance Measures

Performance measures (also sometimes called performance indicators or metrics) are a way to evaluate progress. Depending on the goal or objective, the performance measure may be general (i.e. mode share) or specific (i.e. percent of youth receiving bicycle safety education).

Adopt Local Policies and Ordinances Supportive of Walking and Bicycling

Local jurisdictions create a framework for long-term success by developing clear policies that focus on implementing infrastructure for people who walk and bike. This section includes a variety of policy recommendations that support walking and biking.



Policy Recommendations for Local Goverments

Adopt a Vision Zero Policy

Update Land use and Development Codes

Adopt a Complete Streets Policy

Rethink Parking Requirements

Incorporate Active Transportation in Design Guidelines and Engineering Standards

Review Maintenance Plans

Create Safe Walkways in Construction Zones

Establish Speed Reduction Policies

Update Land use and Development Codes

Building design and land use planning impact the efficiency and viability of active transportation. For many decades, land use patterns in metro Atlanta favored car travel. More recently, the Atlanta region has shifted towards compact communities that prioritize walkability. Local codes that allow for short block lengths, mixed use developments with street-fronting retail, and a connected network of streets form the bedrock of livable communities.

To enact walkable land use regulations:

- Update zoning regulations to encourage a mix of land uses.
- Require that large developments maintain or improve existing street connections.
- Prohibit walls or other barriers between developments.
- Adopt an ordinance requiring bike racks and bike parking in new commercial and residential buildings.
- Encourage compact development near transit and areas with walkable connectivity.
- Require review of development proposals by bike and pedestrian coordinators, local active transportation experts, or advocates.
- Discourage cul-de-sacs – may prohibit in some areas, or require special permit or variance.
- Require sidewalks in all new developments.
- If trail master plan exists, require that developers incorporate trails into their developments in accordance with master plan
- Consider density bonuses or Transfer of Development Rights (TDR) where consistent with comprehensive plans and LCI plans in order to enhance walkable centers, especially near transit stations
- Require showers and indoor/secure bike parking in new office developments
- Set parking maximums or reduce parking requirements, especially near transit.
- Adopt design standards or overlay zoning prohibiting parking in the front yard/setback, that entrances to businesses and residential buildings front the street, etc.

Livable Centers Initiative (LCI)

The Atlanta Regional Commission's Livable Centers Initiative (LCI), created in 2000, provides grants and technical assistance to help communities update local codes, develop plans, and implement active transportation projects and walkable developments. The ARC Board, through resolutions and adoption of regional plans, has committed $500 Million through the year 2040 for LCI projects and studies. To date, the LCI program has awarded $172 million in transportation projects to 5963 communities, and 12.68 million to create 114 Master Plans and supplemental studies.

Development and transportation infrastructure can create great places and enhance quality of life, such as along Canton Street in Roswell, GA.

Rethink Parking Requirements

Parking policy reform is an important tool to reduce congestion, use land more efficiently, and encourage people to walk or bike for short trips. This includes better management of existing parking, pricing that reflects demand, and lowering requirements for parking with new commercial and housing developments.

Reducing minimum parking requirements can benefit communities in many ways:

- Affordability increases for housing and commercial properties with fewer parking spaces
- Fewer "dead" spaces and more vibrant streets
- Amenities are concentrated in compact areas, further improving walkability
- Accessing storefronts is safer and more enjoyable without excessive off street parking

Effective parking reform is based on context. In urban areas and parts of the Atlanta region that are well served by transit, reducing the amount of parking can encourage walking and biking.

Recommendations for urban areas, university districts, town centers, and transit-oriented developments:

- Establish parking maximums
- Create parking benefit districts
- Restrict new surface parking
- Unbundle the cost of parking from housing
- Encourage conversion of surface lots to active uses
- Require active street-level uses in structured parking
- Encourage/allow shared parking
- If building new parking, reserve some spaces for bicycles and shared cars

In suburban parts of the region, parking needs can be balanced through land use retrofits and development design that includes parking but respects people that arrive by foot or bike.

Recommendations for suburban areas not served by transit:

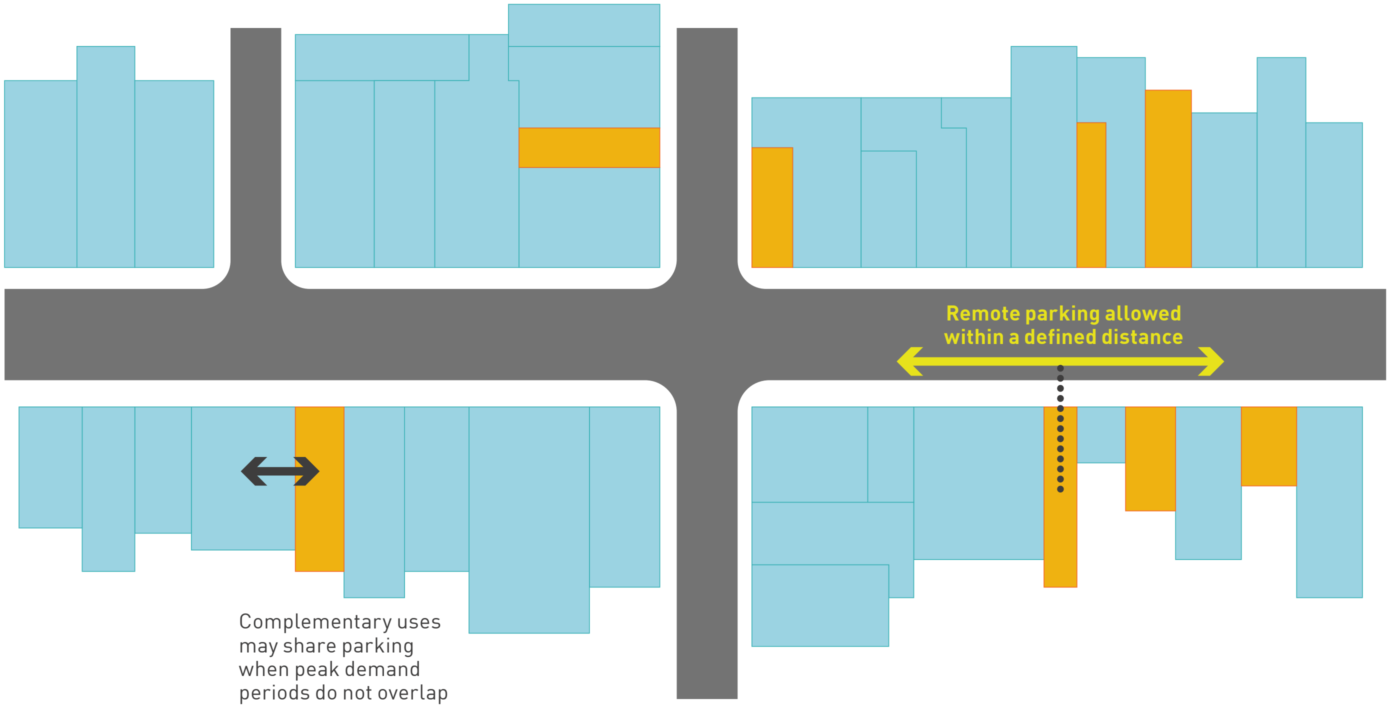
- Require that buildings front the street, with parking behind
- Encourage conversion of surface lots to active uses
- Require pedestrian entrances from the sidewalk
- Limit the number of driveways leading to parking lots through access management policy

Bicycle and pedestrian projects are not typically associated with parking policy and requirements, which most local governments address through zoning ordinances or other land development regulations. However, the potential for the two to influence one another is a powerful (if not commonly used) policy tool that can improve community walkability and manage parking supply and demand.

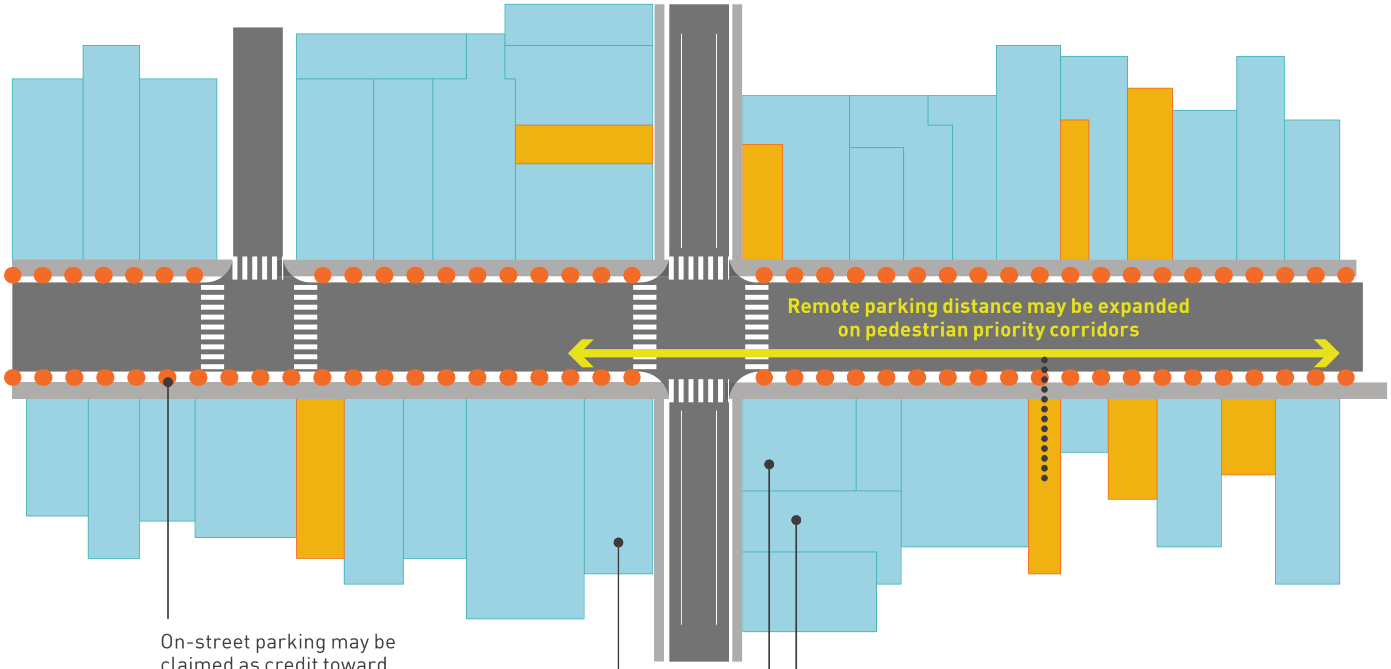
Many regulations on parking and loading in local development codes go beyond setting minimum requirements—they may also allow a use to meet its off-street requirements on other sites within a defined distance, allow sharing of parking between complementary land uses, or even allow parking reductions along with an approved management plan that uses shuttle or valet service to meet access demand for a particular land use. These have typically been used in higher-density urban environments, although they may also be useful approaches to meeting parking demand in activity centers and corridors throughout the Atlanta region if they are supported by a strong walking and bicycling network.

The following factors are helpful ways to evaluate how non-motorized facilities, especially pedestrian facilities, can give flexibility to how parking is addressed in development regulations—and how specific parking conditions on key corridors may bear on bicycle and pedestrian project decision-making by helping planners and elected officials to understand the corridors where they will be able to help solve parking challenges.

- What is the level of parking constraint on a corridor? Does a corridor feature smaller parcels or other constraints that make it difficult for individual development projects or existing uses to provide their own parking?
- What are the corridor's nearby land uses? Is there high demand for walking to and from uses directly on the corridor?
- Do zoning and future land use plans allow for mixed use? Is there potential to further share parking or meet requirements through off-site facilities?
- Will other transportation projects have impacts on corridor properties that further constrain parking ability, such as acquiring private property for right-of-way? If so, can bicycle and pedestrian facilities be included in the project scope to add this connectivity between potentially shared parking resources?
- Is the larger area experiencing redevelopment activity or showing potential for change?



Complementary uses
may share parking
when peak demand
periods do not overlap


Remote parking distance may be expanded
on pedestrian priority corridors

On-street parking may be
claimed as credit toward
off -street requirements
on complete street designs

Required parking may
be reduced on transit
and/or bicycle route
corridors

Adopt a Complete Streets Policy

A Complete Street safely accommodates all users, whether travelling on foot, by bike, transit, or car. Complete Streets create livable spaces for all ages to enjoy, with wide sidewalks, safe crossings, abundant bicycle facilities, and easy transit access.

The Georgia Department of Transportation (GDOT) adopted a Complete Streets policy in 2012. The GDOT policy affects new construction, alteration and maintenance of state roads and any federally funded transportation project in the state, including those projects programmed by the ARC in the Atlanta region. The policy also outlines design guidelines for accommodating people who walk, bike, and use transit. Since the GDOT policy applies to state roads, only selected major roads are covered. In addition, as documented in the ARC's TIP/RTP Blueprint, ARC requires that all projects it funds and programs in the TIP are consistent with complete streets principles (See Business Rule 2.6.5 in the TIP Blueprint)

The National Complete Streets Coalition is a comprehensive resource for cities and counties that are moving to adopt a Complete Streets policy. The Coalition lists more than 720 local and regional jurisdictions that have adopted a policy or ordinance. In the Atlanta region this includes;

- Atlanta
- Clarkston
- Cobb County
- Decatur
- DeKalb County
- Douglas County
- Dunwoody
- Roswell

Successful Complete Streets policies:

- Have a clear, unified vision
- Contain specific performance measures
- Are inclusive of all users
- List a clear prioritization and implementation process
- Include an oversight committee to provide guidance and evaluate progress

Complete street policies help government departments and agencies create a transportation system that accommodates all modes and ages.

Review Maintenance Plans

A regular maintenance schedule for all facilities helps protect investments and ensure a high-quality user experience. Existing facilities such as sidewalks, crosswalks, bike lanes, and trails should be evaluated to determine whether the existing maintenance plan is working, and to make improvements.

Roadway infrastructure maintenance occurs as one of the three R's – reconstruction, repaving, and repair. Aligning pedestrian, bike, and transit upgrades and safety improvements with maintenance projects ensures that the upgrades are implemented frequently and efficiently. Maintenance schedules and planned improvements should be clearly communicated between departments within agencies. Roadway repaving projects, in particular, can integrate improvements such as bike lanes, safe crossings, traffic calming, and signage.

A separate sidewalk maintenance program is recommended in parts of metro Atlanta where sidewalk repairs are needed. In areas where there are large gaps in the sidewalk network, a sidewalk improvement plan can prioritize areas where demand is high (indicated by well-worn footpaths).

To develop a sidewalk maintenance program;

1. Gather data on sidewalk conditions (a prioritization system may be necessary in larger areas)
2. Identify funding needs
3. Develop a funding plan
4. Prioritize corridors for improvements based on condition and need
5. Create a transparent and accessible schedule of upcoming repairs

Large parts of the Atlanta region are inaccessible to people with disabilities. The Americans with Disabilities Act (ADA) requires that all roadway repaving and reconstruction projects meet ADA standards for curb ramp accessibility (Section 502, 6-28-2013).

Trail maintenance programs should consider periodic surface quality inspections in addition to sealing and repaving (for ashphalt trails) and reconstruction (for both concrete and asphalt trails). Consider including eventual reconstruction costs in an annual trail maintenance budget instead of a separate capital item. Trail maintenance plans may also include irrigation, mowing, tree trimming, seasonal leaf removal, and other tasks associated with caring for landscaping along the trail.

Regular maintenance of existing infrastructure can ensure proper use and visibility of walkways and bikeways

Incorporate Active Transportation in Design Guidelines and Engineering Standards

Public works and transportation planning departments typically have formalized policies that guide the design of streets and public spaces. Agencies may house engineering standards and design guidelines in one design manual or use separate manuals based on project type or context. Incorporating specific design guidance on bikeways and pedestrian pathways into existing manuals, the agency's bicycle and pedestrian master plan, or a stand-alone document are effective ways to institutionalize good design that balances the needs of all road users.

The National Association of City Transportation Officials (NACTO) provides the Urban Street Design Guide and Urban Bikeway Design Guide as a resource for cities and policy makers. The NACTO guides enable communities to craft local design policies that balance transportation modes.

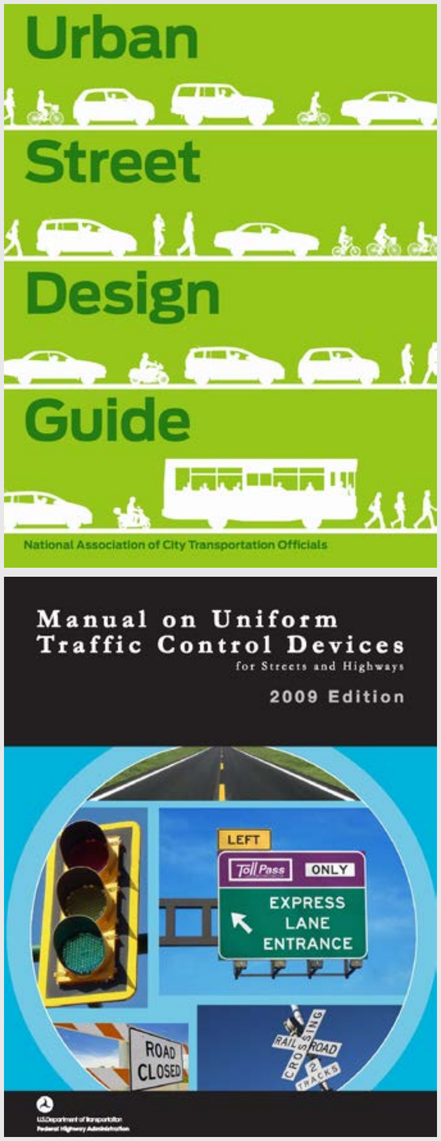
DESIGN VEHICLES

Roadway designers use a concept called a "design vehicle" to establish design parameters for streets. Designers sometimes use large trucks as the default design vehicle for roadways even when such vehicles infrequently use a given street or type of street. This results in wider-than-necessary lane widths and large curb radii that promote higher speeds, which in turn has a negative impact on bicycle and pedestrian safety and comfort. While designs must account for the challenges of larger vehicles, especially emergency vehicles, may face, these infrequent challenges must not dominate the safety or comfort of a site for the majority of daily users.

The process for designing sidewalks, bikeways, and trails does not always include a design vehicle or, the case of pedestrian-specific infrastructure, a design user. However, the design of these facilities should be informed by the typical or target user. Some cities, including Portland, Oregon, have adopted a specific design user for active transportation infrastructure. In an attempt to take "all ages and abilities" seriously, the City of Portland's Active Transportation Division strives to design their sidewalks, bikeways, trails, and crossing treatments based on the needs of an 8-year old.

Smaller transit vehicles allow for more flexibility in safe street design.

National Standards and Best Practices in Bicycle and Pedestrian Facility Design



National standards and best practices for walkway and bikeway facility design is evolving quickly as the transportation industry responds to demand for innovation in implementation.

Transportation design standards and best practices are evolving quickly in the US. As cities and regions compete for economic growth, transportation professionals and decision-makers are increasingly looking for innovative ways to meet the multi-modal transportation needs of communities today and tomorrow. Below is a summary of current references for the design of facilities that support walking and biking. The summary is not exhaustive and is meant to highlight important reference documents and resources used in practice. In all cases, engineering judgment is recommended to ensure that the application makes sensefor the context of each treatment, given the many complexities of streets.

Manual on Uniform Traffic Control Devices (MUTCD)

The Federal Highway Administration's MUTCD defines the standards used by road managers nationwide to install and maintain traffic control devices on all public streets, highways, bikeways, and private roads open to public traffic. The MUTCD is the primary source for guidance on lane striping requirements, signal warrants, and recommended signage and pavement markings.

American Association of State Highway and Transportation Officials (AASHTO) Guides

The AASHTO Guide for the Development of Bicycle Facilities, updated in June 2012 provides guidance on dimensions, use, and layout of specific bicycle facilities. The standards and guidelines presented by AASHTO provide basic information, such as minimum sidewalk widths, bicycle lane dimensions, detailed striping requirements and recommended signage and pavement markings.

Offering similar guidance for pedestrian design, the 2004 AASHTO Guide for the Planning, Design and Operation of Pedestrian Facilities provides comprehensive guidance on planning and designing for people on foot.

The 2011 AASHTO: A Policy on Geometric Design of Highways and Streets commonly referred to as the "Green Book," contains the current design research and practices for highway and street geometric design.

Americans with Disabilities Act (ADA

Meeting the requirements of the Americans with Disabilities Act (ADA) is an important part of any bicycle and pedestrian facility project. The United States Access Board's proposed Public Rights-of-Way Accessibility Guidelines (PROWAG) and the 2010 ADA Standards for Accessible Design (2010 Standards) contain standards and guidance for the construction of accessible facilities. This includes requirements for sidewalk curb ramps, slope requirements, and pedestrian railings along stairs.

National Association of City Transportation Officials' (NACTO)

The NACTO Urban Bikeway Design Guide (2012) and the Urban Street Design Guide (2013) are the newest publications of nationally recognized urban street and bicycle-specific design guidelines, and offers guidance on the current state of the practice designs. The intent of the guides is to offer substantive guidance for cities seeking to improve transportation in places where competing demands for the use of the right of way present unique challenges. All of the NACTO guide treatments are in use internationally and in many cities around the US.

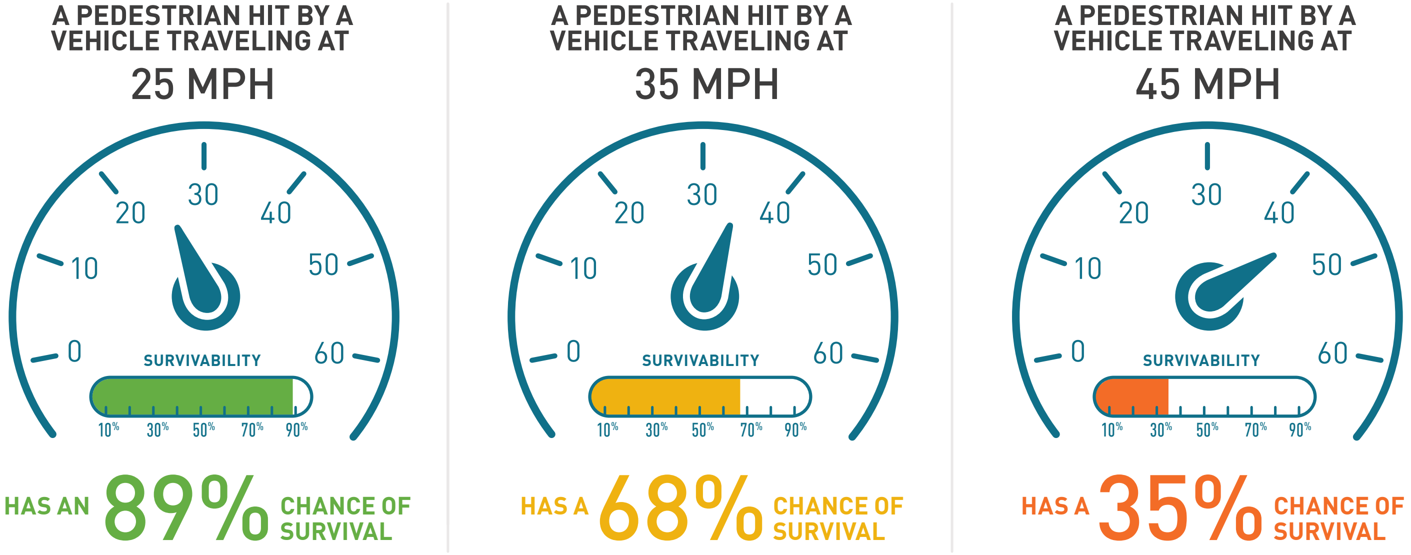
Manage Vehicle Speeds

People walking and biking are disproportionately threatened by even small increases in traffic speed. As vehicle speeds increase, the risk death for pedestrians increases dramatically. At 25mph, the risk of death for pedestrians is only about 11%. At 35mph, the risk increases to about 32%. At 45mph, 65% of pedestrians suffer fatal injuries.[1] Slower traffic speeds may also promote physical activity by making the roads safer and more comfortable for people walking and biking.

Unsafe traffic speeds are the result of roadway designs that encourage higher speeds, speed limits that are set too high, and people driving faster than set speed limits. Proven measures exist to reduce vehicle speeds to levels that are safer for everyone on the road.

Key strategies for speed reduction include:

- **Design and retrofit road networks to ensure safe speeds for all road users.** This includes setting a target speed, the speed you intend for drivers to go, rather than using 85th percentile operating speeds, when designing roadways. Use context-appropriate speed reduction mechanisms such as lane width reductions, medians, chicanes, speed humps, street trees, and on-street parking to encourage drivers to slow down.
- **Set speed limits for the safety of all road users.** For urban arterial roadways, this means a maximum of 35mph. Some urban arterials that fall outside of built-up areas where people are likely or permitted to walk or bike. In these highway-like conditions, a higher target speed may be appropriate. New York City recently set a city-wide speed limit of 30mph. In neighborhood settings, many cities around the country are moving toward 20mph posted speeds to improve safety and increase livability.
- **Enforce speed limits.** Law enforcement officers play a key role in promoting safe driving behavior. Consistent enforcement can have a big impact on driver behavior over the long term.



Speed impacts the safety of all users of the street.

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[1] Tefft, B. C. *Impact speed and a pedestrian's risk of severe injury or death*. Accident Analysis & Prevention 50 (2013) 871-878.

Create Safe Walkways in Construction Zones

Walkways in construction zones should be routed on the same side of the street as the construction site, run on or parallel to the closed sidewalk, and must meet the requirements of the Americans with Disabilities Act and the Manual on Uniform Traffic Control Devices. Signage related to construction activities shall be located in an area that does not block safe pedestrian or bike access. Frequent site visits and enforcement may be required to ensure compliance with local standards.

Adopt a Vision Zero Policy

Vision Zero is the concept that **no loss of life is acceptable** on our roadways. Jurisdictions across the nation and across the world are adopting Vision Zero policies to eliminate preventable traffic deaths.

A Vision Zero policy acknowledges that human life takes priority over transportation mobility and that government bodies, roadway designers, and road users share responsibility for traffic safety. This policy can help develop a holistic program for prioritizing Engineering solutions and using Enforcement, Education, and Encouragement together to support safety outcomes.

For more information on developing a Vision Zero policy, go to visionzeronetwork.org

Regular, safe, and convenient street crossings for those walking and biking in the region can help reduce bicycle and pedestrian injuries and fatalities.

Active Transport Programs and Marketing Ideas for Local Governments

Active transportation infrastructure is complemented by effective education, encouragement, and enforcement programs. Recommendations for programs and activities were refined based on stakeholder feedback, community input, and existing programs with a track record of success. By implementing these strategies, jurisdictions in metro Atlanta can improve mobility, safety, and comfort for all residents.

	Potential Lead agency							Program Goal						
Program Type	ARC	City or County	Transit Agency	CIDs	GDOT	NGOs	School Districts	Mode shift	Skill building	Info sharing	Awareness & visibility	Broaden participation	Reduce conflicts	Improve safety
Promoting Good Road User Behavior	x	x		x	x	x	x		x	x	x		x	x
Pedestrian Safety Campaigns	x	x	x	x	x	x	x		x	x	x		x	x
Bike Skills Education		x	x	x		x	x		x	x		x	x	x
Bike to Work/ School Commute Challenge	x	x		x		x	x	x				x		
Bike + Transit - Education and Promotion		x	x	x		x		x	x	x		x		x
Demographic-Specific Programs		x	x	x	x	x	x		x	x	x	x		x
Bike/Walk Events/Festivals	x	x		x	x	x				x	x	x	x	
Agency Staff Training	x	x	x	x	x	x	x		x	x				
Bike Parking Program	x	x	x	x		x	x	x			x	x	x	
Open Streets	x	x		x		x			x		x	x		
Safe Routes to School	x	x			x		x	x	x	x	x	x		x
Enforcement	x	x		x		x	x	x		x	x		x	x
Bike/Ped Legal Training		x			x	x			x	x				x
Local Business Rewards/ Discount Program	x	x		x				x			x	x		
Active Transportation RX	x	x		x				x			x			
Employer Incentives	x			x	x	x		x		x		x		
Popup Projects	x	x	x	x	x	x	x	x			x	x	x	x

Promote Good Road User Behavior Programs

These programs encourage road users to be abide by local laws, to be courteous to other road users, and promotes safe behaviors and actions. They can be targeted at just one mode (e.g. cyclists), or at multiple road user types (e.g. cyclists, drivers, and pedestrians).

Examples: Share the Road, Lights on, and Stop for Pedestrians campaigns

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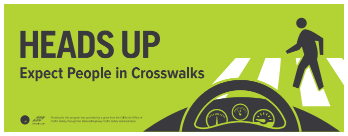

Create Pedestrian Safety Campaigns

Pedestrian safety campaigns show people how and why to walk. Typical programs focus on reducing conflicts with motor vehicles, providing information on how and when to safely cross the road, and distributing information on local laws. These campaigns can be geared to adults and/or youth.

Provide Bike Skills Education

Bike education programs help people bike more often and more safely. These programs teach bike maintenance, bicycle handling skills, traffic safety know-how, and laws related to bicycling on public roads. Courses, campaigns, and educational materials can be geared to both adults and/or youth.

Examples: Atlanta Bicycle Coalition, Bike Emory, and Georgia Bikes courses

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Thanks for being part of the 2015 Atlanta Bike Challenge

Start or Join a Bike to Work/Commute Challenge

Commute-based programs and challenges can focus on a day, a week, a month, or another period of time. Bike-to-work programs often offer an incentive to employees in the form of reward or prize drawing for participating. Challenges allow individuals, teams, or workplaces to compete against each other.

Example: Georgia Commute Options' Atlanta Bike Challenge

Host Bike + Transit Education and Training

Combining bicycling with transit is a great way to extend any trip. However, the task of coordinating biking and transit can be nerve-racking. This program aims to reduce the barriers of combining bikes with transit by providing information and education on how to load your bike on a bus or train, rules from your local transit provider, and in some cases host events that allow people to try it out in a comfortable group setting.

Partner with Community Groups on Demographic-Specific Programs

Programs that target a specific demographic group can create a strong sense of support and community. There are many possible groups to target, including women, new residents, seniors, families with young children, people of color, and recent immigrants/refugees. These programs are usually best delivered in partnership with community organizations.

Example: ARC's Lifelong Communities program

Raise the Visibility of Walking and Biking with events/festivals

The Atlanta region is known for its festivals, and many events are pedestrian friendly. Cycling festivals typically combine multiple themed bike rides, parties, and races into a condensed period of time. Cities and neighborhoods can organize events that get more people out walking and interacting with the community. Block parties, art strolls, walking tours, and group bike rides all instill a sense of community pride and appreciation for pedestrian-scaled environments.

Examples: Atlanta Cycling Festival, Car-free festivals, and Social rides

Provide Agency Staff Training

Public agency staff have many opportunities to contribute to making the Atlanta region a great place to walk and bike. Internal trainings will make sure that they all are fully trained on policies and practices that the agency wants to institutionalize.

Develop a Bike Parking Program

Bike parking is an essential part of creating a bike-friendly city. Bike parking programs can install bike parking on request near local businesses, or can offer valet services at events. Revisiting bike parking policy and development guidelines is also important.

Examples: Atlanta Bicycle Coalition Bike Valet, Bike parking/bike corral business request program

Start Open Streets Events

Open street initiatives temporarily close the streets to automobiles so people may use them for various activities like walking, jogging, bicycling, skating, dancing and other social activities. These events are great at bringing the community together and promoting transportation options, placemaking, and public health. Open Street events are also excellent at building community. They bring together neighborhoods, businesses and visitors alike. They can be centered in a downtown or across neighborhoods.

Example: Atlanta Streets Alive

Enhance Safe Routes to School

Safe Routes to School (SRTS) programs encourage children to walk or bike to school more often and more safely. SRTS programs promote road user safety, enhance children's health, improve quality of life, and creates a new transportation option for families. These programs require strong partnerships between schools and community members. Most SRTS programs combine the "Five Es" of education, encouragement, enforcement, engineering, and evaluation.

Partner with the Police on Enforcement

An enforcement strategy aims to deter unsafe behaviors of drivers, pedestrians, and bicyclists, and encourages all road users to obey traffic laws and share the road safely. Enforcement complements many transportation programs. Options include community enforcement (pedestrian/bike safety training) or law enforcement (promoting good road user behaviors).

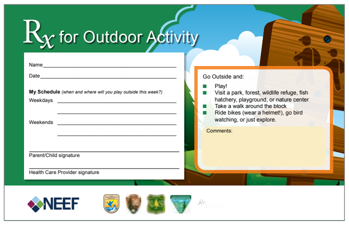
Example: Crosswalk enforcement program

Offer Bike/Ped Legal Training

Legal training and education allows pedestrians and/or bicyclists to learn about their rights and responsibilities as road users. These programs offer free legal clinics, handouts and legal guides, and provide information on state and local laws.
This information is valuable to all road users and creates an informed community around important bicycle and pedestrian laws.

Local Business Rewards/Discount Program

SmartTrips programs are most commonly an intensive residential TDM campaign that promotes walking, biking, transit, and shared modes to a target audience. This audience is most commonly a residential neighborhood, but SmartTrips programs have also successfully targeted universities, new residents, and downtown business districts. The program combines customized travel information packets with fun events and ongoing communications to engage people in changing their travel habits.



Rx for Outdoor Activity

Name____________________

Date____________________

My Schedule *(when and where will you play outside this week?)*

Weekdays ____________________

Weekends ____________________

Parent/Child signature

Health Care Provider signature

Go Outside and:

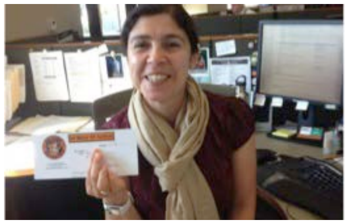
- Play!
- Visit a park, forest, wildlife refuge, fish hatchery, playground, or nature center
- Take a walk around the block
- Ride bikes (wear a helmet!), go bird watching, or just explore.

Comments:

NEEF

Prescribe Active Transportation

Active transportation prescriptions are a fun way to encourage people to be active and healthy. Health care providers are given a special prescription pad and other tools to help promote healthy lifestyle changes for their patients. In the state of New Mexico, for example, this type of program linked prescriptions to a website that provided walking tips, a trip log, groups to join, and an interactive map that helped people find walking routes in their neighborhoods.



Reward Walking and Biking with Employer Incentives

Employer incentives aim to reduce driving alone commuting. Solutions include promoting transit, vanpool/carpools, carsharing, bicycling and walking. Employees who bike to work and report on their bicycle trips earn rewards or prizes such as paycheck bonuses, gift cards, or workplace perks. Employees are also offered resources and tools and invited to attend trainings and events.

Local business reward and discount programs encourage people to commute or run errands by biking. People who bike are eligible for rewards or discounts at participating local businesses. In some cases a membership or helmet stickers needed by consumers to receive the discount. This program reinforces bicycling as a positive behavior, business see increased customer loyalty, it encourages bike- friendly establishments, and it provides the opportunity to build partnerships with local businesses.

Demonstrate Improvements through Popup Projects

Temporary popup projects can demonstrate the success of walking and biking infrastructure without a long-term commitment and a big budget. Popup projects include temporary protected bike lanes, painted sidewalks, parklets, pedestrian plazas in formerly vacant spaces, and traffic calming techniques.

Examples: Sweet Auburn Living Beyond Expectations Project, North Avondale Rd Road Diet and roundabout project in Avondale Estates

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Evaluate and Monitor Active Transportation Outcomes

A successful plan requires frequent monitoring and evaluation. Evaluation includes oversight of implementation as well as benchmarks, quantifiable performance measures, surveys, and reports.

Perform Crash Analysis

The Atlanta metro currently ranks as one of the 10 most dangerous places to walk (Smart Growth America, 2014) and is an FHWA Pedestrian-Bicycle Focus City due to the high crash rate. Additionally, the state of Georgia is an FHWA Focus state. In response, the Georgia Department of Transportation created a Georgia Pedestrian Safety Task Force and a Bicycle Safety Task Force that includes the Atlanta Regional Commission, the City of Atlanta, local advocates, and other stakeholders to implement strategies to reduce fatalities regionally and statewide. A primary objective of both Task Forces is to gather data to optimize the location and selection of safety improvements.

Crash analysis can help identify system network issues, such as consistent bicycle and pedestrian crashes along major roadways. Systemic safety issues can be addressed by policy changes and implemented with safety improvements consistently over time. Crash analysis can also be used to understand safety issues in specific locations, such as a particular intersection, and help identify solutions to improve safety.

Perform Roadway Safety Audits

Roadway safety audits, or RSAs, are frequently used to assess safety concerns for people who walk and bike. The goal of the RSA is to use field analysis to make informed recommendations for safety improvements. This is best accomplished by carefully walking the corridor during the day to note existing conditions, and walking or driving the corridor at night to note lighting, visibility, and safety concerns. RSAs may take place at specific intersections and locations, or along corridors. Safety audits should be prioritized in areas with high crash rates, and/or where street reconstruction or restriping is scheduled, such as Complete Streets makeovers or road diets. RSAs should not be conducted by the agency that owns the road being audited. RSAs may be conducted by consultants, experts on pedestrian and bike safety, community groups, and local advocacy organizations.

Road Safety Audits are comprised of three parts; 1) data collection and organization, 2) field work, and 3) report on findings and recommendations. The field work for many RSAs can be completed in one day, however RSAs on corridors more than two miles in length may require two days.

Record Vehicle Speeds and Traffic Volumes

In areas where residents or businesses report that speeding is an issue, vehicle speed data should be collected to determine the severity of the problem. After reviewing speed data, posted speed limits, and functional classification of the roadway, the need for and applicability of traffic calming measures can be evaluated. Accurate speed detection devices can be purchased for less than $150, and speeds are easily recorded by municipal agencies or concerned citizens. If traffic calming measures are installed, vehicle speeds should be recorded again for evaluation.

Traffic counts can help inform decision-making about potential complete streets. Counts may indicate that certain roads have excess capacity to accommodate vehicle traffic, allowing for the repurposing of street to accommodate walking, biking, or transit. Conducting traffic counts can also help identify roadways with opportunities to reconfigure travel lanes to include facilities for people walking and biking, improve traffic flow, and safety for all road users.

Monitor Active Transportation Spending

Evaluation of spending can determine whether the desired amount of funds are allocated to bicycle and pedestrian projects. Municipalities should monitor how local, regional, state and federal funds are being spent and assess future need. To prioritize active transportation, spending should appropriately match the overall need and growth of bicycling and walking as transit modes. Similarly, maintenance funds should exceed the need for repairs to improve conditions for people who walk and bike.

As an example, if the maintenance backlog for sidewalks is 20 percent of the overall infrastructure maintenance backlog, than at least 20 percent of the maintenance budget should be allocated for sidewalk repairs.

Local jurisdictions should report funding on stand-alone pedestrian and bicycle improvement projects as well as infrastructure that is part of larger roadway redesigns, such as Complete Street Projects. For these projects, funding for pedestrian and bike improvements (on-street bike lanes, sidewalks, etc) should be isolated to make funding analysis easier. Infrastructure that is required by law as part of larger road projects, such as ADA compliant curb ramps and push buttons, should not be included as separate pedestrian and bike projects for the funding analysis.

Funding for non-pedestrian and bike infrastructure should also be evaluated, to determine whether access and safety for all users is improving. For example, if sidewalks are improved but roads are widened to accommodate more vehicles, then overall safety and convenience may decline.

Spending on education, encouragement, and enforcement campaigns for people who walk or bike should also be evaluated by category for year-by-year comparisons and benchmarks.

Count the Number of People Walking and Bicycling

Understanding where people are walking and biking is critical to making improvements in local walking and biking networks. The number of people walking or biking can be used to evaluate the success of infrastructure projects, or to make data-based decisions on where to make improvements. Comparing numbers seasonally and over multiple years provides insight on emerging trends. And in cases where demand is questioned, this information can support the need for improvements. Conducting bicycle and pedestrian counts whenever vehicles are counted during traffic studies is one way to integrate planning for walking and bicycling into existing activities.

Counts can be conducted manually or with automatic sensors. Manual counts are low-cost, easy to implement, and can provide additional data such as gender and percentage of people who bike that wear helmets or have bike lights. However, manual counts require significant volunteer time and do not provide a continual, 24 hour picture of usage.

Automatic pedestrian and bike counting technology has advanced rapidly in recent years. In-pavement sensors, computer vision, infrared beams, radar, and tube counters can all detect people who walk and bike. However, devices vary considerably in terms of cost, accuracy, data collection, and ease of deployment. It is important to choose counting devices that are best suited for the type of data needed (short term or long term) and the site characteristics where counts will take place. This includes counts on shared paths less than 10 feet wide, shared spaces more than 10 feet wide, barrier separated cycle tracks, bike lanes, and mixed-traffic roads.

Bike counters can help evaluate and impact the success of infrastructure projects.

Gather Travel Surveys and User-Generated Travel Data

The American Community Survey, or ACS, is the most widely known source of data for walking and biking trips, but is limited in scope. The ACS only reports on commute trip purpose, and partial trips are not recorded, so walking and biking trips are often grouped with transit on commutes with multiple modes. At some geographies, bike trips are grouped with "other" transportation modes that include taxis.

Pedestrian and bicycle travel surveys can address the shortcomings of limited data from national surveys. These surveys can be tailored to fit the needs of local municipalities, and provide specific information on travel behavior. Surveys can be completed in-house and sent via mail to randomly selected residents.

User-generated travel data is a rapidly emerging source of information on where and when people walk and bike. Most user-generated data is tracked and submitted by mobile phone, with information displayed online and shared via social media platforms.

Nationally, Strava is a free services that provides a massive database on where people run and bike. While exercise-oriented, approximately half of all Strava data points in major cities are commutes. The Strava "heat maps" show spatial data that can inform maintenance needs, planning, and improvements to infrastructure for people who walk and bike.

Locally, the Cycle Atlanta app sends GPS data on your bike route to City of Atlanta planners and engineers. The app also can be used to report issues such as safety hazards and vehicle parking in bike lanes.

User-generated data provides helpful information but should not be used as a sole indicator of demand. Many areas may have high demand but fewer people recording trips due to lack of safe and sufficient infrastructure.

Capture Feedback from User Surveys

Intercept surveys capture data directly from users along a specific route or corridor. While methods vary, surveys should be kept very short (less than a page) to improve participation and gather complete data. To get more data and still achieve a high response rate, mail-back surveys may be handed out in person. The National Bicycle and Pedestrian Documentation Project (NBPDP), provides standard count and survey instructions, as well as one page surveys for people who walk and bike.

Many people who use transit are unable to attend traditional public meetings. PEDS – metro Atlanta's pedestrian advocacy organization – uses Walk-by Visioning to gather feedback from people who walk to transit. Walk by Visioning uses images and stickers to quickly convey issues and potential solutions as people enter or leave transit stations. This method eliminates language barriers, allowing for input from diverse communities. Information can be collected to identify safety issues and prioritize Safe Routes to Transit projects.

Establish Performance Measures and Benchmarks

Performance measures are quantitative indicators of a plan's success. *Benchmarks* are standards that set specific goals or targets for a plan. Performance measures should align with benchmarks, which should in turn align with specific objectives outlined in the plan.

As an example, an *objective* may be to improve the quantity of bicycle parking.

A *performance measure* would be the number of bicycle parking spaces.

A *benchmark* would be to install 200 parking spaces per year through 2020.

Benchmarks should be:
Specific
Measurable
Achievable
Relevant
Time-based

Benchmarks should have agencies or personnel assigned to achieve the goal, and a separate advisory committee should track outcomes for all objectives. Arranging performance measures, benchmarks, and the responsible agencies in a table with a timeline for implementation helps to monitor progress.

Identify Progress with Evaluation Reports

Evaluation reports give an overview of progress towards implementing a community's goals and benchmarks for active transportation. Evaluation reports may include:

- A recap of the community vision for people who walk and bike
- A description of accomplishments
- An update on performance measures
- Trends and comparisons with peer communities
- Results and interpretation of the findings
- How the findings will be shared

A summary of the active transportation evaluation report can be adapted to present the findings to stakeholder groups, advisory committees, and council meetings. Clear reporting of failures and successes fosters trust that officials are following up on objectives.

At the national level, the Alliance for Biking and Walking Benchmarking project is a comprehensive data resource for government officials, advocates, and planners to compare progress between cities or states. At the local level, many cities produce "report cards" on walking and biking that are updated annually or every few years.

What Makes a Good Walking or Biking Project?

High-quality walking and biking networks are developed incrementally – block by block and intersection by intersection. To build a connected local system – on that ultimately has regional value too – requires developing good projects. Good projects, implemented incrementally with a focus on achieving a larger vision for community improvement, support the development of connected networks that improve quality of life.

Good walking and bicycling projects maximize three functions: Safety, Convenience, and Comfort. As highlighted in Walking and Biking Network sections previously, connectivity and user comfort are key measures of the success of a bicycling- and walking-friendly community. The details of individual projects determine success at network-, community-, and regional-scales.

The following matrix describes the key qualities that contribute to the success for different types of walking and biking projects. Local governments should use this list as a checklist to scope good projects that contribute great places to walk and bike.

Key Qualities

Walkways	Bikeways	Trails	Places and Public Spaces	Support Infrastructure
Increases the connectivity of the walkway network	Increases the connectivity of the bikeway network	Increases the connectivity of the local or regional trail system	Sociability	Increases the convenience of walking or biking
Provides a direct route between destinations, including frequent and convenient crossings	Provides convenient access to destinations	Safety, Security, and Universal Access	Designed for the intended user	Increases the attractiveness of walking or biking
Design details promote safety and comfort: adequate width, protection from vehicles, landscaped buffers and shade trees, highly visible crossing treatments	Minimizes potential for bodily harm: smooth and stable surface, adequate operating space, visibility at intersections	Wayfinding and Navigation	Access and Linkages	
Universal Access: smooth, stable, barrier-free surface with ADA-compliant curb ramps	Intuitive, context-appropriate design promotes comfort and predictability for all roadway users	Seamless transition to local networks and regional trails	Comfort and Image	
Includes social spaces for standing, sitting, and visiting	Accommodates expected user type	Adequate width	Sense of place	

Recommendations for Funding Walking and Biking Projects

	Short term Project < 2 years	Long term Project > 2 years
Small budget	Neighborhood Associations Community Improvement Districts Crowdsourcing Non-Profit Grants Impact Fees Infrastructure bonds Governor's Office of Highway Safety Local taxes Local health departments Foundation grants Individual donors	Federal Transportation Funds Capital Improvement budget funds State Programs: • *Georgia Department of Transportation* • *Recreational Trails Program (Dept. of Natural Resources)* • *Community Development Block Grant (CDBG)*
Big budget	Foundation grants Individual donors Community Improvement Districts Public-Private Partnerships Infrastructure bonds Local taxes	Federal Transportation Funds Congressional earmarks

Having sufficient funds for transportation infrastructure and related transportation programs is critical to achieving The Atlanta Region's Plan to create world class infrastructure and meet local needs and priorities. Communities that are consistently successful in expanding their walking and biking systems leverage funds from a variety of sources and are consistent, year over year, with making investment in capital and maintenance projects.

During the Active Transportation Project Delivery Forum for this plan, several key themes were noted related to funding process, funding sources, and funding needs. They include:

- There is a need for diversified funding strategies.
- There is a need to deliver projects faster.
- There is a need to reduce bureaucracy to deliver smaller projects, such as walking and biking projects.
- With fewer staff and technical resources, smaller jurisdictions often struggle to delivery projects through the federally funded project process.
- There is a desire for more public-private partnerships.
- There is a need for big regional projects.
- Scoping assistance can help identify project delivery issues early in the federally funded project delivery process.

The sections that follow summarize the funding ecosystem and strategies available for active transportation projects.

Select the Right Funding Strategy for a Project

No two projects are alike and each may require one or more funding sources to be completed. The funding selection matrix on the previous page provides an overview of different funding strategies and potential funding sources based on the size and time frame for project delivery.

Federal

Federal transportation dollars can be used to plan, design, and implement active transportation projects and programs. Historically, the largest source of federal funding for walking and biking has been the US DOT's Federal-Aid Highway Program, which Congress has reauthorized roughly every six years since the passage of the Federal-Aid Road Act of 1916. The details of federal transportation funding programs, structure, and requirements are constantly evolving, but the trend in recent Acts has been in the direction of increased spending flexibility at the state and local levels.

In the Atlanta Region, federal transportation monies are administered through the Georgia Department of Transportation (GDOT) and ARC. Most, but not all, funding is oriented toward transportation (as opposed to recreation), with an emphasis on reducing auto trips and providing inter-modal connections. Federal funding is intended for capital improvements and safety and education programs, and projects must relate to the surface transportation system. Federal funding typically requires a local match of 20%, although there are sometimes exceptions, such as the American Recovery and Reinvestment Act stimulus funds, which did not require a match.

In addition to transportation infrastructure funding, the Livable Centers Initiative (LCI) administered by ARC provides funding for many of the recommendations outlined in this plan for local communities. LCI funded projects include studies and activities that promote multi-modal transportation including (but not limited to): master plans, site plans for TOD, active transportation plans, concept development/feasibility studies for bicycle or pedestrian projects, development of zoning, land use and parking regulations, parking studies, and design standards.

State

While most of the federal funding used for bicycle and pedestrian projects in the Atlanta Region come from funds allocated directly to the Atlanta Regional Commission (as the designated MPO for the area), there are many other federal funding programs that can be used for walking and biking projects that are administered by the Georgia Department of Transportation.to local jurisdictions and MPOs such as the Atlanta Regional Commission. GDOT administers the Highway Safety Improvement Program (HSIP) through which they fund and implement safety projects at high crash locations, including bicycle and pedestrian crash locations.

Additionally, GDOT uses state or federal funds to provide sidewalks, bike lanes, or pedestrian crossing improvements on maintenance, widening or reconstruction projects. Georgia also offers funds through the Governor's Office of Highway Safety (GOHS) for pedestrian and bicycle safety programs. Non-profit organizations, city, and county agencies are eligible to apply for up to three years of GOHS funding.

Local

Local taxes and infrastructure bonds are the primary local public funding sources for pedestrian and bicycle projects. Local sources of revenue include property taxes, impact fees, transportation sales taxes, hotel/motel taxes, Tax Allocation Districts (aka Tax Increment Financing -- value capture of the increment tax increase collected and used for improvements within the district), Community Improvement Districts (self-taxing districts for non-residential properties) and capital improvement budget funds.

Private

Many private funding sources are available for pedestrian and bicycle projects, from small grants for marketing activities to multi-year foundation grants. Small scale projects and improvements that require land acquisition are often funded primarily from private sources. Specific funding sources for creating active communities in metro Atlanta include AARP, Kaiser, The Blank Foundation, Advocacy Advance, health departments, Grantmakers in Aging, the Coca Cola Foundation, the Robert Wood Johnson Foundation, and People for Bikes.

To promote healthy lifestyles and attract talent, large companies are building active transportation amenities for their campuses and surrounding communities.

Public-Private Partnership

Public-private partnerships are contractual agreements that can leverage funds from both sectors for infrastructure projects and facilities. Where municipal budgets fall short, private revenue can fill the gaps.

Innovative funding sources

Increasingly, non-profits organizations, municipalities, and individual advocates are using crowdsourcing to fund innovative pedestrian and bicycle projects. Crowdsourcing uses a large audience for fundraising, typically with the help of internet donation websites such as loby.org and kickstarter.com.

MARTA used ioby.org to raise $4,500 for self-service bicycle maintenance kiosks at select transit stations. The kiosks will be useful for basic repairs such as fixing flat tires or broken chains and will complement Atlanta's bike share program.

Local set-asides

Transportation is only successful if users can safely access it by walking or biking. Local governments can set aside portions of general transportation revenue, public school bonds, county health department funding, parking fees, and traffic violation revenue for upgrades to walking and biking facilities.

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Decision-Making and Process Recommendations for Walk and Bike Friendly Communities

How to Make Multi-modal Decisions

Walk.Bike.Thrive! has been developed on a foundation that many projects will originate at the local level, either through community interest or a locally-identified need for improved bicycle and pedestrian travel options. To this end, local governments will benefit from a broader range of decision-making tools, especially that allow them to more comprehensively evaluate multimodal transportation factors and that expand the conventional range of transportation measures of effectiveness—many of which have historically been focused on vehicle-based traffic concerns.

In most transportation decision-making, projects are evaluated on the basis of an engineering concept known as level of service (LOS), a quantified assessment of infrastructure performance that considers factors such as delay, travel time and travel speed. However, most LOS criteria that are currently used in evaluating transportation projects focus on vehicle mobility, especially congestion-related travel delay at intersections. This tends to drive capital project decisions that use automobile-oriented designs, often at the expense of bicycle and pedestrian safety and comfort. Communities may wish to explore different approaches to evaluating infrastructure performance, especially when land and financial constraints limit the conventional approaches to mitigating transportation impacts (especially road and intersection widening).

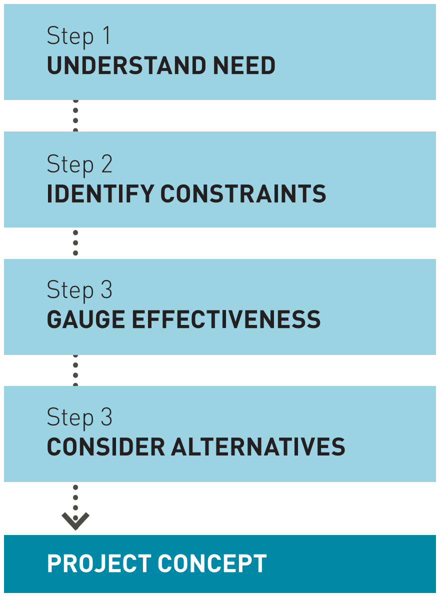
The following offers a series of decision-making steps intended to guide communities in developing bicycle and pedestrian project concepts to a level ready for implementation. It should not be interpreted as a checklist for project development, but rather a good-practice guide for ensuring that projects have been selected and their scopes defined in the interest of implementable projects that make efficient use of public resources.

- **What is the bicycle and pedestrian need of the area?** Is it driven by demand or opportunities for access to particular locations such as schools, parks, or places of employment?
- **What kinds of constraints do existing and potential corridors face?** Is there underutilized roadway capacity, space for expansion or construction of new facilities, or other ways of accommodating bicycle and pedestrian infrastructure?
- **How would the project affect person-travel on a corridor?** Does the project offer a meaningful, defensible way of expanding infrastructure capacity and increasing travel options to meet needs, especially for shorter trips?
- **Are there alternative designs or alignments for the project?** If a desired corridor's constraints are cost-prohibitive or not politically practical to overcome, could the same travel need be met through a different project design or location?

Right-of-Way Tradeoffs

One of the most common challenges communities face in implementing bicycle and pedestrian plans is how to balance the many transportation needs in existing rights-of-way, nearly all of which are constrained by either physical, political or cost-based factors. While there may be opportunities to add facilities for non-motorized users that have no impact on other users of streets and roads, there are typically always other challenging examples of potential projects that might require reduction in travel lanes, bicycles and pedestrians on freight routes, or balancing high-speed corridors with more vulnerable users in limited space.

The diagram on the following page provides a basic decision-making framework that starts with understanding how a project can work within existing right-of-way. For projects that do not, the diagram provides guidance on how planners should consider various community factors in making decisions on bicycle and pedestrian projects.



STEP 1:
Determine Need

QUESTION 1 Do all the demands for the street (e.g., biking, transit, or freight) fit within the right-of-way? → YES → FRAMEWORK NOT NEEDED

NO ↓

QUESTION 2 Can a parallel route help meet demand? → YES → FRAMEWORK NOT NEEDED

NO ↓

Proceed to STEP 2

STEP 2:
Decision-Making Framework

1

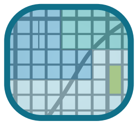
WHAT IS THE STREET CLASSIFICATION?

Is it a Principal Arterial, Minor Arterial, Major Collector, etc.

2

WHAT ARE THE CORRIDOR ATTRIBUTES?

BUILDING FORM



ZONING AND UGPM DESIGNATION

#1

STREET PRIMARY FUNCTION
(e.g. access to downtown, on ARC's SRTS)

#2

STREET SECONDARY FUNCTION
(e.g. freight route, neighborhood access)

3

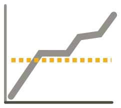
HOW DO CLASSIFICATION AND DESIGN FIT WITH THESE ATTRIBUTES?

Based on the previous steps, identify a street type and note related design factors →

COMMERCIAL ARTERIAL	RESIDENTIAL ARTERIAL	NEIGHBORHOOD COLLECTOR	LOCAL STREET	RURAL-TO-SUBURBAN
Driveway access Truck Traffic 4 or more travel lanes Protected bike lanes Transit Potential	2-4 travel lanes Higher traffic volume Protected bike lanes Transit Potential	Frequent driveway access 2-3 travel lanes School and park access Limited truck traffic Likely ROW constraints	Sidewalks 2-5 travel lanes On-street parking Protected bike lanes or parallel path facility	12' sidewalks 2-4 travel lanes Truck traffic Protected bike lanes or parallel path facility Transit

4

WHAT ARE THE COMMUNITY'S DEMANDS FOR THE CORRIDOR AND THE LARGER AREA?

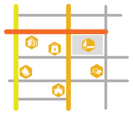


ADT, CRASHES, BIKE AND PEDESTRIAN VOLUMES, TRANSIT RIDERSHIP, ETC.

MODE PLANS:
What has been planned for the corridor?

COMMUNITY AND STAKEHOLDER INPUT

FUTURE MODE DEMAND



ACCESS AND MOBILITY PRIORITIZATION
(curb management framework)

FUTURE LAND USE AND DEVELOPMENT

5

DETERMINE MODE HIERARCHY

All arterials should be designed at a minimum for walking and vehicular travel.

The hierarchy for the remaining modes is based on reviewing the previous steps of the framework and building community consensus on tradeoffs

Make the Right Decision at the Right Scale

The Atlanta region is geographically vast and features numerous communities and corridors of distinct characters and development patterns. To be sure, there is no one-size-fits-all approach to any transportation, including bicycle and pedestrian travel. While the best practices proposed in this plan establish a basic foundation for how highways, streets, paths and other infrastructure types should be designed to accommodate cyclists and pedestrians, it is also important for a project to be understood at different scales, or levels of detail in a community environment, with key decisions made for each one.

The diagrams to the right provide additional detail on three key levels of bicycle and pedestrian system understanding. It is not necessary to consider a potential project, policy or action at each one, as needs to be met or challenges to overcome might exist only at the smallest of these scales.

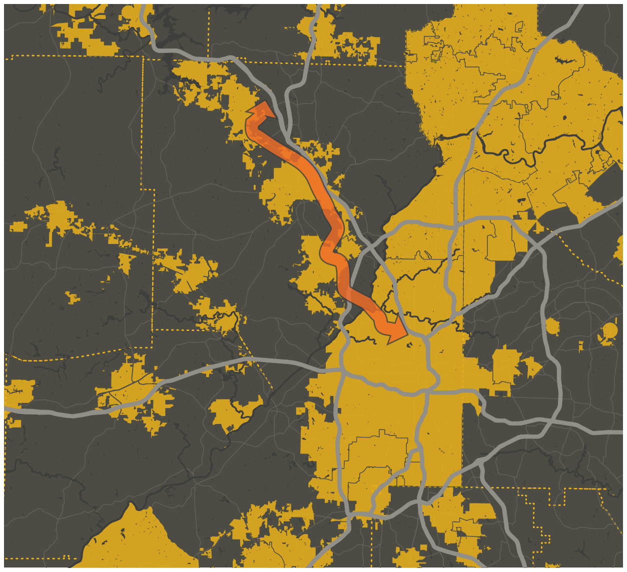
Decision-making happens at multiple levels of government, but ultimately the impact is at street-level.

Region, County and City

Projects must have a clear and broadly-accepted vision at the largest of geographic scales, and in many cases may originate in a parks and recreation plan or an active transportation plan. These project definitions often only include a conceptual level of design detail and a general level of stakeholder involvement and participation, but they involve public discussion that is critical to projects moving forward.

FACTORS TO CONSIDER

- Need for intergovernmental or inter-agency coordination to develop a common project understanding and implementation strategy
- Engagement—or likelihood—of project 'champions' or advocates who constitute a link between planning concept and public acceptance
- Key institutional and government objectives that project should help to meet
- Differences in local policy or legislation that may mean differences in design along a project's length



Neighborhood and Corridor

It is critical at this scale for projects to understand barriers and potential opportunities for resource-sharing. There is also likely to be a basic idea, or at least a set of options, for specific alignments of bicycle and pedestrian routes or specific points for improvements to be made.

FACTORS TO CONSIDER

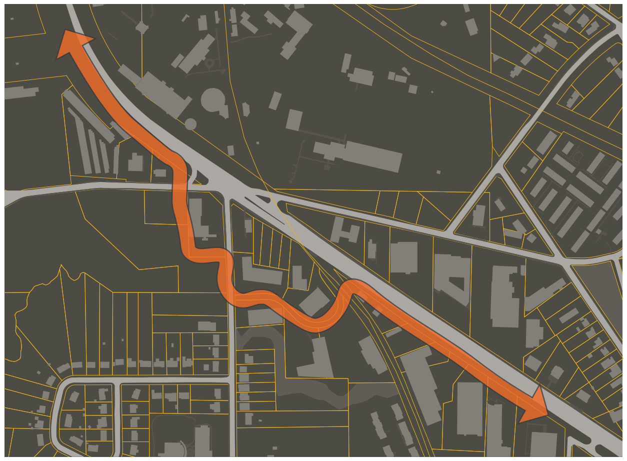
- Physical constraints such as topography, infrastructure and natural features
- Capital project plans or public programs already making infrastructure investments to which bikepedestrian elements might be added

Street and Block

This is the scale where facility design is most important, as specific details of the built environment affect basic safety and comfort of cyclists and pedestrians. This is also where partnerships and agreements (such as easements) have a more specific bearing on the alignment of a project and the ways it navigates the built environment.

FACTORS TO CONSIDER

- Potential locations of easements, right-of-way to acquire or public land to share
- Existing and planned street design, capital projects and private development activity



Understand the Roles of Agencies, Jurisdictions, and Other Stakeholders

Achieving a high standard of bicycle and pedestrian travel and facilities throughout the Atlanta region has relied and will continue to rely on multiple partners and stakeholders.

Regional and State Level

The Atlanta Regional Commission maintains federally-compliant Regional Transportation Plan (RTP) and Transportation Improvement Program (TIP) through which project funding is distributed. As part of updates to these documents, ARC leads a project selection process (and defines the criteria for this process) through which projects that meet regional goals and policy objectives are preferred candidates for limited regional funding. ARC provides separate project funding and grant assistance for small-area planning through its LCI program and comparable programs into the future. ARC also provides technical assistance for smaller communities interested in developing projects.

The Georgia Department of Transportation provides multiple services and resources for transportation improvements. In addition to capital projects along state roadways, GDOT provides resources for resurfacing and maintenance projects (opportunities for active transportation improvements), safety programs (such as the Highway Safety Improvement Program), and bridge replacements and improvements, among others. Additionally, GDOT provides guidance and oversight for permitting projects, particularly those receiving federal funds. GDOT is a resource for design policy as well as funding and implementation.

Local Level

City and County Governments are most likely the lead agencies for projects, and generally the lead for all projects in the right-of-way of streets and roads that they own and operate. Local governments will also be the primary coordinators of public outreach and engagement around projects, programs and policies.

Community Improvement Districts (CIDs) may also develop project and policy ideas, although they are generally not allowed to lead projects directly. CIDs are often important sources of project funding and may be able to provide funds that can be leveraged as a local match for state and federal funding sources.

School Districts generally serve an entire county, although the region also has city-specific districts such as those in Atlanta, Decatur and Marietta. They will usually not lead projects but may assist in seeking funding or leveraging their own funding for projects that have a direct connection to schools.

Private Organizations

Other non-governmental organizations will have a key role in identifying project opportunities and perhaps even helping to secure funding, especially grant funding, but these partners are often instrumental contributors to successful public engagement and building a base of community support for projects and policies.

Although these groups tend to focus on local-level issues and are oriented to single communities or municipalities, the Atlanta region also has organizations working at a regional scale, such as Georgia Commute Options and Citizens for Progressive Transit, and also benefits from institutional ties to some national organizations. These key partners should be engaged in the following ways:

- **Advocacy Groups.** Organizations that promote awareness of bicycling and walking as viable and important forms of transportation serve a key role in advocating for stronger public policy, targeted investment in capital projects, and educational programs to complement other public programs and resources (such as public school safety programs and driver education). These groups are often organized as not-for-profit non-governmental organizations, although they may be less formally organized yet still serve a key role in community outreach.
- **Foundations and Philanthropic Organizations.** National foundations that focus on missions to which bicycle and pedestrian mobility and connectivity have a strategic relationship can be helpful partners, especially for funding.
- **Universities and Other Educational Institutions.** Not only do universities constitute major potential generators of bicycle and pedestrian travel, they also provide potential funding and research capacity to help advance projects, make the case for investment in bicycle and pedestrian infrastructure, or provide research support in evaluating project effectiveness. Universities may not be inclined to support project efforts and policy approaches not directly aligned with their organizational mandates, although they are increasingly focused on promoting bicycle and pedestrian safety on their campuses and are likely to serve as important partners in projects located in or near their them.
- **Neighborhood and Civic Groups.** Many bicycle and pedestrian projects originate through neighborhood interest. These groups provide a fundamental level of public support; larger-scale projects involving multiple neighborhoods can benefit from broad involvement of all affected groups.

The diagram on the following page provides a general understanding of how these different actors participate in the project development and policy-making process. Not every partner may be involved, but each is envisioned to be engaged for particular roles and responsibilities. Planners leading bicycle and pedestrian projects should consult this resource to understand how to structure their project and policy discussions so that these participants can help to advance projects and contribute to a regional system of bicycle and pedestrian connections.

REGIONAL LEVEL

ATLANTA REGIONAL COMMISSION

Distributes federal transportation funding

Leads LCI program and awards project funds

Provides technical guidance as needed

GDOT

Has oversight of state system routes

May lead projects on state system routes

Awards state funding

APPROVAL NEEDED FOR PROJECTS ON STATE ROUTES →

ADDS PROJECT TO LRTP/TIP →

LOCAL LEVEL

CITY/COUNTY GOVERNMENT

Likely to be project lead (even on statesystem routes) if project has local focus

Major public involvement coordinator

Multiple departments may be involved

COMMUNITY IMPROVEMENT DISTRICT

May be project lead (even on state system routes) if project has CID-area focus

Stakeholder involvement coordinator

Provides additional (or primary) funding

EITHER MAY BE PROJECT LEAD →

MAY PROVIDE PRIMARY OR KEY SUPPLEMENTAL FUNDING FOR PROJECTS →

PUBLIC SCHOOL DISTRICT

May supplement funding

Coordinates with other transportation systems (expecially bus transportation)

KEY PARTNER IN ADVANCING PROJECTS PROVIDING SCHOOL ACCESS →

PRIVATE SECTOR

TOPIC-SPECIFIC ADVOCACY GROUPS

Key public outreach and education partner

Advocates for key projects and policy

May have fundraising capacity

NEIGHBORHOOD/CIVIC GROUPS

May have access to funding or knowledge resources reflecting national efforts

May have access to other strategic partners

UNIVERSITIES

Key public outreach and education partner

May have research/data collection capacity

FOUNDATIONS

May have access to funding or knowledge resources reflecting national efforts

May have access to other strategic partners

KEY PARTNERSHIPS IN BUILDING CONSENSUS AND ADDING PRIVATE FUNDING →

Incorporate Elements of Good Process and Public Participation

Public Participation

Continuous public involvement is key to the development of a high-quality walking and bicycling system. The public should be invited to participate during master planning, project scoping, and project design/implementation. Identifying stakeholders beyond the usual suspects such as pedestrian advocacy groups and bicycle clubs is critical to producing robust, implementable plans and projects. Ensure that you include stakeholders with the power to block plan or project approval or delay implementation in addition to those that stand to benefit. These groups may include:

- Low-income, minority, and immigrant populations
- The business community
- Freight interests
- Emergency services
- Automobile clubs
- School district and school safety committee representatives
- Youth and older adults

Advisory Committees

Cities and counties should also assemble a pedestrian or bicycle advisory committee that meets on a regular basis to discuss trends and progress on established goals. Advisory committees should be made up of interested community members and work directly with staff and elected officials to advance initiatives, develop policies, and scope projects. Having a pedestrian or bicycle advisory committee is also a key element required to achieve Walk Friendly and Bicycle Friendly Designation.

Advisory committees help prioritize investments and guide policy changes.

How to Talk about Equity

Safe, healthy, affordable, and convenient transportation options are not always available to the disadvantaged populations that need them most. As noted in the Assessment, people with the greatest need to walk, bike, and take transit are disproportionately living in areas that are less bikeable, walkable, and transit-served. This mismatch between need and the availability of high-quality walking, biking, and transit infrastructure results in long, unhealthy, and/or dangerous travel for some of the region's most vulnerable populations. Additionally, long average commutes and limited transit can prevent access to jobs, thereby impacting people's ability to escape poverty.

Being open and honest about these realities is the first step in creating a more equitable region. However, talking about (in)equity isn't always easy. The bullet points below provide some suggestions for how to have these difficult conversations.

ARC's Equitable Target Area Index and related maps, as well as the Partnership for Southern Equity's Metro Atlanta Equity Atlas, are helpful technical resources that can help cities and counties understand the geography of opportunity relative to the region as a whole.

Listen.

Part of achieving equity is understanding what people want. People's needs may not be immediately obvious, especially if they are coming from a different cultural background.

Distinguish between Equity and Equality.

The terms "equity" and "equality" are sometimes used interchangeably, which can lead to confusion. Equity involves trying to understand and give people what they need to enjoy full, healthy lives. Equality, in contrast, aims to ensure that everyone gets the same things in order to enjoy full, healthy lives. Leveling the playing field means that active transportation funding will need to be prioritized in areas with greater needs, rather than distributed equally based on geography.

Use one key fact about your community to convey the need for equity.

For example, "30% of x community are zero vehicle households, but only 3% of transportation funding goes to walking and biking infrastructure.

Use informal language and keep transportation planning jargon to a minimum.

Acronyms and technical language can be intimidating to any non-expert, and the feeling may be amplified if the audience is a not a native English speaker. Using photos and graphics to help illustrate a point can help reduce language barriers.

Mean what you say and say what you mean.

When talking about specific groups, specify the population to which you are referring. Are you talking about Black people? Latino people? Asian immigrants? Women? Try to avoid using the term "minority" to describe multiple community groups with different needs.

ATLANTA REGIONAL COMMISSION

40 Courtland Street, NE | Atlanta, GA 30303
404.463.3100
Atlantaregional.com

PART 2

ASSESSMENT OF REGIONAL TRAVEL PATTERNS AND EXISTING CONDITIONS

WALK. BIKE. THRIVE!

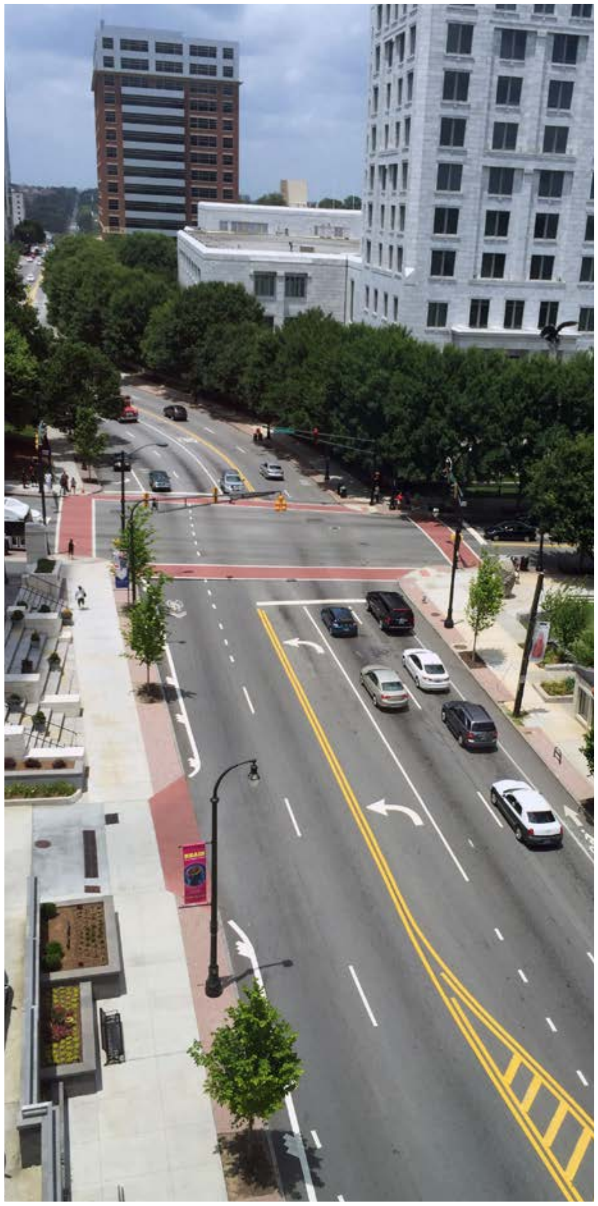
A regional vision for a more walkable, bikeable, and livable metropolitan Atlanta

Photo: Christopher Jarrett, @slimwonder

ATLANTA REGIONAL COMMISSION

Research Building/ ATDC
Georgia Tech

101 Church St.



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SCHOOL ZONE BEGINS

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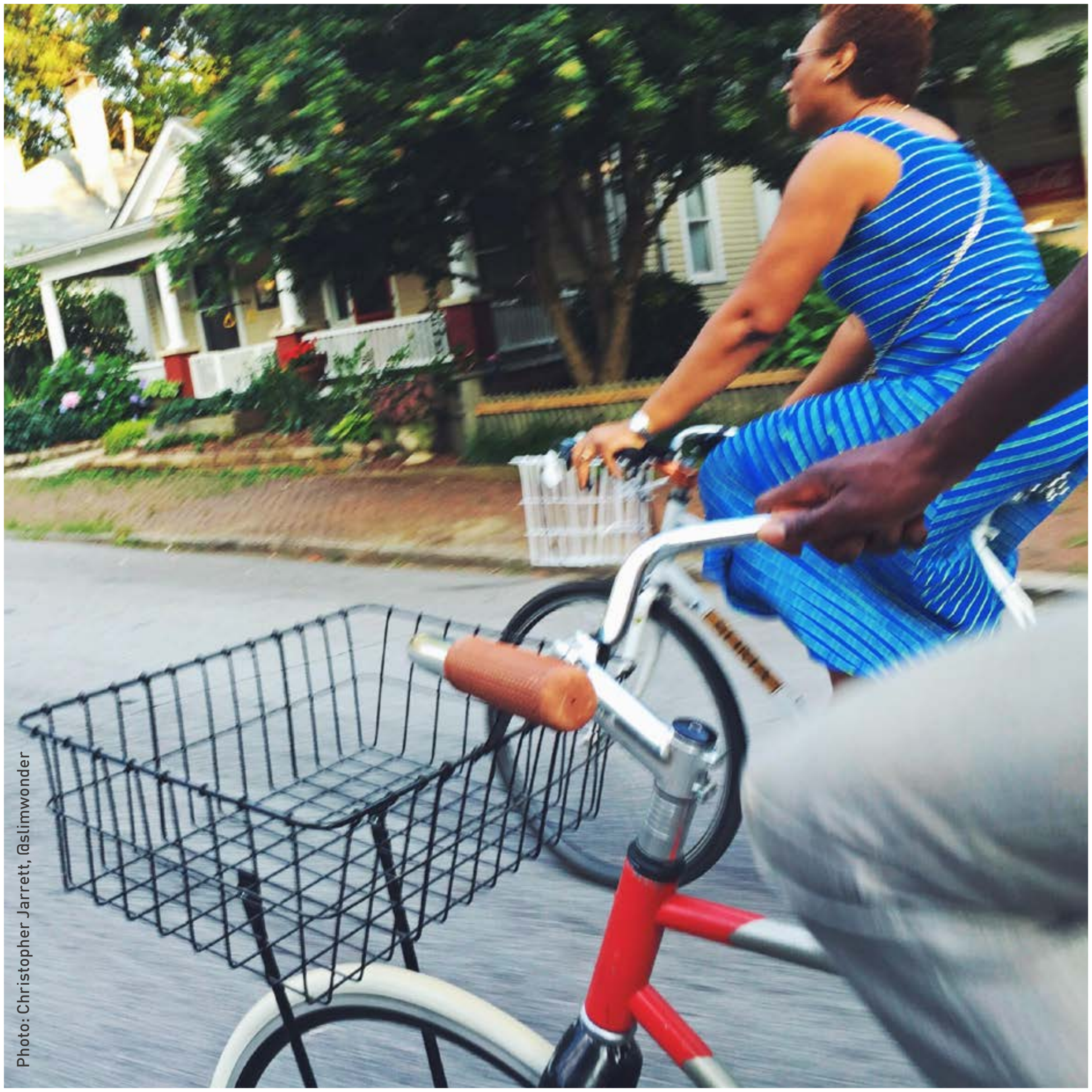

Photo: Christopher Jarrett, @slimwonder

EXECUTIVE SUMMARY

The story of walking and biking in the Atlanta region can be summarized as increasing demand and substantial need, but modest investment and gradual growth.

Walking and bicycling are foundational forms of transportation. They can be inexpensive, healthy, and fun, but need to be seen as desirable and safe. Public transit – both rail and bus as well as emerging forms of on-demand travel – expands the reach of these two "active" modes to form a regional system. Together active transportation and public transit increase the mobility of individuals of all ages and abilities and the economic competitiveness of communities across the region.

The Atlanta region's historical development patterns and transportation infrastructure investments have created a region where the majority of trips are by car. These patterns are deeply ingrained but are not immutable. Changing demographics, shifting development trends, and an increasing investment in walking, biking, and transit infrastructure can lead to significant increases in walking, biking, and transit use. And recently, as regional patterns have changed, walking and bicycling rates have increased.

Transportation is crucial for quality-of-life. Distance, schedule, safety concerns, and financial resources all contribute to individuals' transportation decisions. Many households in the region rely on walking or bicycling as low-cost options or public transit to reach a distant job. Many more individuals choose active transportation to save money or improve their health. And employers recognize that active transportation options attract, retain, and support employees. But lack of safe or convenient access hinders peoples' abilities to walk, bicycle, or ride transit. Lack of transportation mobility hinders economic mobility. Expanding transit service, filling gaps in the bikeway and sidewalk network, and concentrating development patterns help individuals travel more easily and strengthens communities.

A particular focus for regional walking and bicycling travel are greenway trails and multi-use paths. When well-integrated into local walking and bicycling networks, trails can function as active transportation highways for direct, fast, safe, and comfortable travel that connect cities and bridge barriers. In the last few decades communities across the Atlanta region have built trail segments that have driven new private development and provided safe and accessible places for people of all ages and ability to be more physically active and socialize. Linked together these segments can become a regional trail network.

This regional travel pattern assessment provides an overview of the trends, needs, and opportunities related to walking and biking combined with public transit in the region. The sections are organized around Mobility, Safety, and Economic Competitiveness as well as a focus on current trail distribution and opportunities for a regional trail network. These perspectives provide the building blocks for continued growth of walking and bicycling in the region.

2015 ATLANTA REGION
WALKING, BIKING, AND TRANSIT BY THE NUMBERS

MOBILITY

Mode Share

1.4%
% of workers who commute by walking [2]

0.2%
% of workers who commute by biking [2]

3.1%
% of workers who commute by transit [2]

5.3%
% of all trips in the region that are by bike or walking [3]

1.7%
% of all trips in the region that are by transit [3]

76.5 %
% of transit trips that start or end with a walking trip

Proximity [4]

12%
% of people that live within a 5-minute walk of an activity center

23%
% of people that live within a 5-minute bike ride of an activity center

16%
% of people that live within a 5-minute walk of a transit stop

33%
% of people that live within a 5-minute bike ride of transit stop

SAFETY

Injuries [1]

1,582
Annual average # of pedestrians injured in traffic crashes (2012-2014)

4.8%
% of all traffic injuries sustained by people walking

633
Average annual pedestrian injuries per 100 million miles walked (2012-2014)

346
Annual average # of bicyclists injured in traffic crashes (2012-2014)

1%
% of all traffic injuries sustained by people biking

457
Average annual bicyclists injuries per 100 million miles biked (2012-2014)

Fatalities [1]

85
Average annual # of pedestrians killed in traffic crashes (2012-2014)

17%
% of all traffic fatalities that are pedestrians

34
Average annual pedestrian fatalities per 100 million miles walked (2012-2014)

8
Average annual bicyclist fatalities per 100 million miles biked (2012-2014)

6
Average annual # of bicyclists killed in traffic crashes (2012-2014)

1.2%
% of all traffic fatalities that are bicyclists

---

[1] *Georgia Electronic Accident Reporting System; Georgia Department of Transportation*
[2] *US Cenus Bureau 2013 American Community Survey 1-year estimates for the Atlanta-Sandy Springs-Roswell MSA*
[3] *ARC PLAN 2040 Travel Demand Model*
[4] *2010 US Census*

ECONOMIC COMPETITIVENESS

Federal Funding

7%
% of federal transportation funds spent on walking and bicycling in the Atlanta Regional Commission Transportation Improvement Plan

Public Health[5]

78.9%
% of residents that do not meeting minimum recommended physical activity guidelines

26.4%
% of residents who are obese

Walk Friendly & Bicycle Friendly Communities and Universities

2
# of Walk Friendly[6] Communties

2
# of Bicycle Friendly Universities[7]

3
# of Bicycle Friendly[7] Communities

4
# of Bicycle Friendly Businesses[7]

Equity

22.1%
% of people that live within Equitable Target Areas[8]

37%
% of bike crashes that occur within Equitable Target Areas[10]

31.2%
% of people that work within Equitable Target Areas[9]

42%
% of pedestrian crashes that occur within Equitable Target Areas[10]

TRAILS

397
# of miles of existing paved, multi-use trails[11]

Proximity to Trails[8]

5%
% of people that live within a 5-minute walk of a trail

10%
% of people that work within a 5-minute walk of a trail

21%
% of people that live within a 5-minute bike ride of a trail

42%
% of people that work within a 5-minute bike ride of a trail

---

[5] *US Census American Community Survey 2013, Behavioral Risk Factors Surveillance System*

[6] *UNC Highway Safety Research Center's Pedestrian and Bicycle Information Center*

[7] *The League of American Bicyclists*

[8] *2010 US Census, Atlanta Regional Commission*

[9] *US LEHD 2011*

[10] *2014 State Crash Database*

[11] *Atlanta Regional Commission*

FOR

COMMUNITY PROFILES

The Community Profiles section summarizes the geographic, demographic, and government and agency context for the Atlanta Region. This section also provides a summary of how the region compares to other peer metro areas in terms of size, population, and rates of walking, biking, and transit.

Geography

The Atlanta metropolitan region is located in north-central Georgia amongst the piedmont foothills of the southern Appalachian Mountains. The region includes all or part of 20 counties and covers over 8,376 square miles. The City of Atlanta forms the primary urban core surrounded by largely suburban counties dotted with historic small towns. The region contains several prominent job centers, often at the junction of interstate highways, surrounded by extensive residential suburbs.

Historically, the region was an agricultural area with scattered industrial factories. At its core the City of Atlanta was founded as a rail junction and the region remains a hub for rail, highways, and air travel. Major roads have historically radiated out from town centers and were often built along ridge lines. These historic and geographic features still impact walking and biking, resulting in often hilly and circuitous routes both within and between cities.

The region is often noted for having abundant tree cover and many streams, creeks, and rivers. These natural resources provide opportunities for linear parks and trails, but also present barriers between jurisdictions. Where streams, creeks, and rivers separate destinations in the region they can impact route choices and increase distances to destinations.

The region is as large and as diverse as some states. The size of metropolitan Atlanta places the region between New Jersey and Delaware in square miles.

The region's rolling hills are sometimes cited as a barrier to bicycling, although they can also be attractive to those looking for a workout.

SEASONAL TEMPERATURES FOR THE ATLANTA REGION

Month	Average temperature (0F)		Average precipitation
	Low	High	
January	33°	52°	5.03"
March	44°	65°	5.38"
May	59°	80°	3.95"
July	71°	89°	5.12"
September	64°	82°	4.09"
November	44°	63°	4.10"

Source: Intellicast

Weather

Weather is often cited as a significant barrier to walking and biking. While extreme hot or cold temperatures may deter some, it should be noted that some of the cities with the highest rates of walking and biking in the country are in areas with temperature extremes.

Of the 50 largest cities in the country, Boston and Washington, DC have the highest rates of commuting by walking or bicycling in the US. Both of the cities experience extreme hot and cold weather. New Orleans, a southern city with hot temperatures and high humidity, has the 10th highest rate of commuting by walking and bicycling in the US.[1]

By comparison, Atlanta has a relatively temperate climate with four distinct seasons. The region experiences mild winters and hot summers, with average highs in the mid 50s and upper 80s respectively. The mild winters help increase the number of days people can walk and bike comfortably compared to many major cities in the US. High heat and humidity in the summer can be a potential barrier, but one that can be lessened by the installation of end-of-trip facilities like changing areas and showers, and by increasing shade along active transportation corridors.

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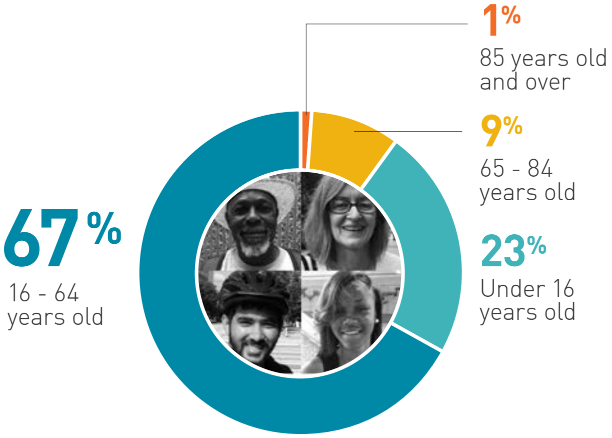
[1] *Alliance for Walking and Biking. 2014 Benchmarking Report: Bicycling and Walking in the United States. (2014).*



ATLANTA REGION BY AGE

Source: US Census 2013 American Community Survey 1-year estimate

Population

The Atlanta Regional Commission's MPO boundary currently covers all or part of 20 counties and includes a population of 4,824,522 people. Roughly half of the State of Georgia's population lives in the 20-county Atlanta region. The Atlanta region's population falls between the States of Alabama and South Carolina – the 23rd and 24th most populous states in the US respectively.

The Atlanta metropolitan region has for several decades been defined by booming population growth. The region's population grew by over one million people between 2000 and 2010[1] and several of the region's counties were routinely ranked as the fastest growing in the United States.

The region's growth has been primarily focused in suburban counties, most prominently to the north and east of the region. Incorporated cities in the region contain approximately forty percent of the region's population. Recent trends indicate that movement to the urban core and suburban towns, as well as newly incorporated areas, may be increasing cities' percentage of overall regional growth.

The Atlanta metropolitan region is becoming an increasingly diverse place. From 2000 to 2010, the Atlanta region decreased from 63% to 55% white with 32% black, 10% Hispanic or Latino, and 5% Asian residents. As minority populations increase, especially in suburban counties, these numbers indicate a strong trend towards an increasingly diverse region.

An important demographic perspective is the distribution of the population by age. Roughly twenty-five percent of people in the region are under the age of 16 and thus cannot legally drive. Ten percent of the population is between the age of 65-84 and one percent is over the age of 85. Together, over one-third of individuals may be unable or less willing to drive and thus more dependent on others to travel to daily destinations.

Additionally, 6.3% of people in the Atlanta region live in households without cars. For a significant portion of the population, walking, bicycling, and transit are vital forms of transportation.

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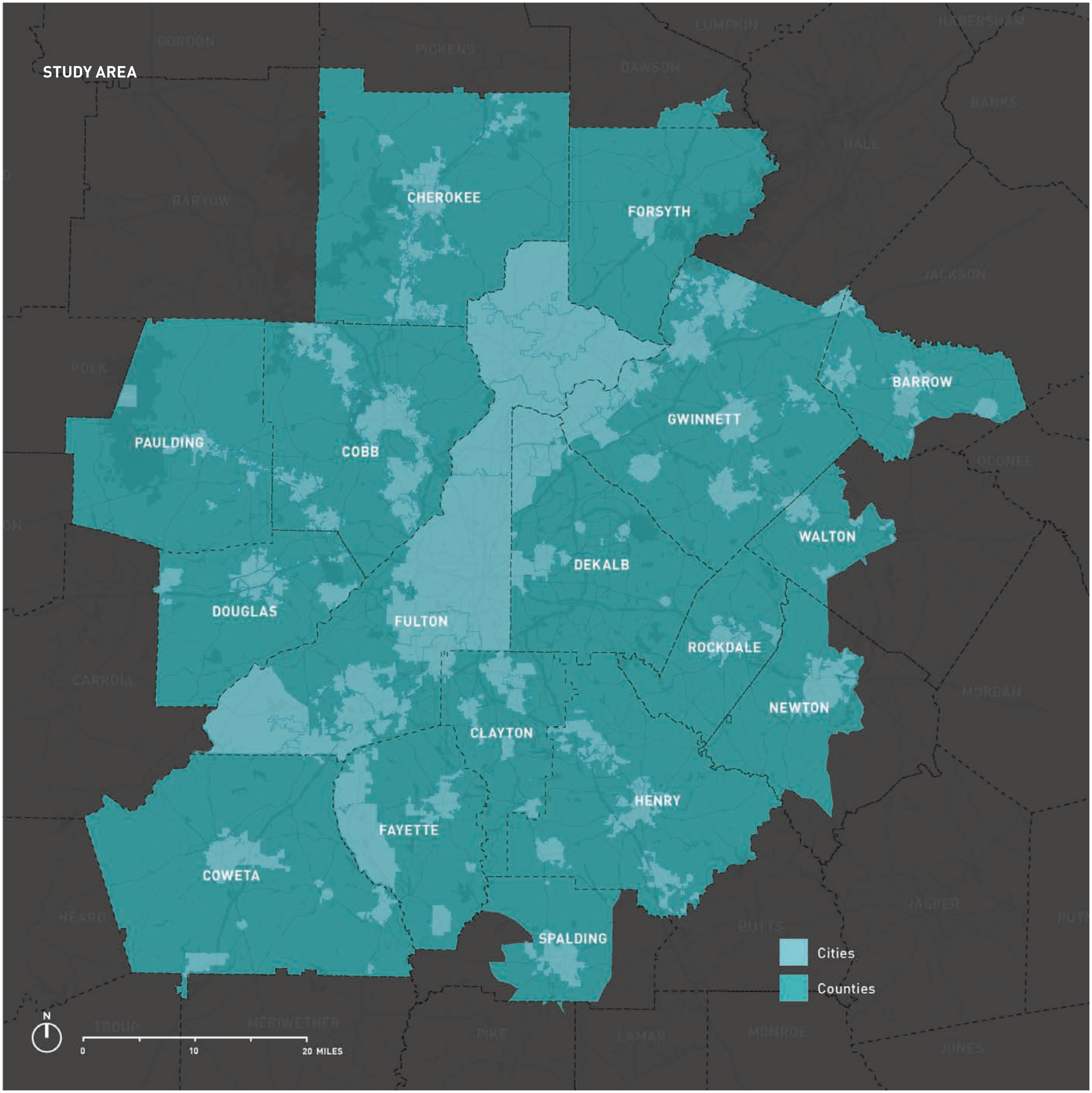
1 Source: 2000 and 2010 Population Estimates for the 28 county Atlanta Metropolitan Statistical Area, US Census Bureau



STUDY AREA

CHEROKEE
FORSYTH
BARROW
PAULDING
COBB
GWINNETT
WALTON
DEKALB
DOUGLAS
FULTON
ROCKDALE
NEWTON
CLAYTON
HENRY
FAYETTE
COWETA
SPALDING
GORDON
PICKENS
LUMPKIN
DAWSON
HABERSHAM
BANKS
HALL
BARTOW
JACKSON
POLK
OCONEE
CARROLL
MORGAN
HEARD
BUTTS
JASPER
TROUP
MERIWETHER
PIKE
LAMAR
MONROE
JONES
Cities
Counties
N
0
10
20 MILES

Governance Context

The study area for this plan is the Atlanta Metropolitan Transportation Planning Area, which contains all or part of 20 counties, 81 cities, 17 towns, and 15 census designated places (CDPs). Because of the large number of jurisdictions and relatively small counties, regional issues such as transportation require a great deal of coordination and negotiation amongst the various government bodies.

Additionally, the number of jurisdictions that make up the region means that transportation decision-making is dispersed. As the region grows, the role of local jurisdictions and the MPO is changing. The MPO is increasingly responsible for coordination and technical assistance while local governments are increasingly responsible for policy, program, and infrastructure decision-making at the local level.

JURISDICTIONS IN THE ATLANTA METROPOLITAN TRANSPORTATION PLANNING AREA

Counties

Barrow
Carroll
Cherokee
Clayton
Cobb
Coweta
Dawson
DeKalb
Douglas
Fayette
Forsyth
Fulton
Gwinnett
Henry
Newton
Paulding
Pike
Rockdale
Spalding
Walton

Cities

Acworth
Alpharetta
Atlanta
Auburn
Austell
Avondale Estates
Ball Ground
Berkeley Lake
Braswell
Brookhaven
Buford
Canton
Centerville
Chamblee
Chattahoochee Hills
Clarkston
College Park
Conyers
Covington
Cumming
Dacula
Dallas
Decatur
Doraville
Douglasville
Duluth
Dunwoody
East Point
Fairburn
Fayetteville
Forest Park
Grantville
Grayson
Griffin
Hampton
Hapeville
Hiram
Holly Springs
Johns Creek
Jonesboro
Kennesaw
Lake City
Lawrenceville
Lilburn
Lithonia
Locust Grove
Loganville
Lovejoy
Marietta
McDonough
Milton
Morrow
Mountain Park
Nelson
Newnan
Norcross
Oxford
Palmetto
Peachtree City
Peachtree Corners
Pine Lake
Powder Springs
Riverdale
Roswell
Sandy Springs
Senoia
Smyrna
Snellville
Statham
Stockbridge
Stone Mountain
Sugar Hill
Sunny Side
Suwanee
Union City
Villa Rica
Waleska
Walnut Grove
Winder
Woodstock

Towns

Bethlehem
Between
Braselton
Brooks
Carl
Clermont
Haralson
Moreland
Newborn
Orchard Hill
Porterdale
Rest Haven
Sharpsburg
Taylorsville
Turin
Tyrone
Woolsey

CDPs

Belvedere Park
Bonanza
Candler-McAfee
Conley
Druid Hills
Irondale
Lakeview Estates
Mableton
Mountain Park
North Decatur
North Druid Hills
Panthersville
Redan
Tucker
Vinings

Municipal Context

20
Counties

81
Cities

17
Towns

15
Census Designated Places (CDPs)

As of 2015

Community Improvement Districts

- Buckhead CID
- Atlanta Downtown Improvement District (ADID)
- Midtown Improvement District
- Cumberland Community Improvement District
- East Metro DeKalb CID
- Gwinnett Place CID
- Gwinnett Village CID
- Perimeter CID
- Airport West CID
- Boulevard CID
- Braselton CID
- Evermore CID
- Highway 278 Improvement District
- Lilburn CID
- North Fulton CID
- Stone Mountain CID
- South Fulton CID
- Town Center Area CID
- Tucker-Northlake CID

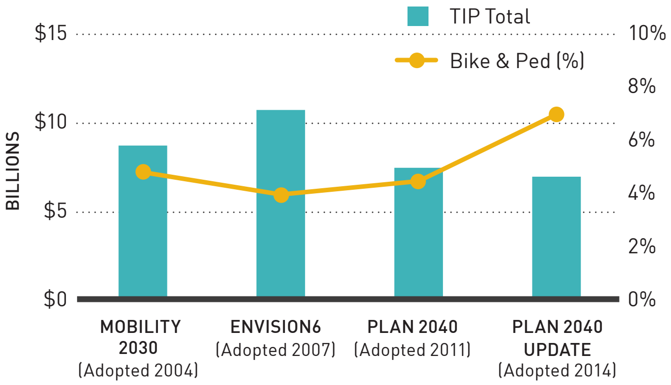
Community Improvement Districts are important areas for jobs, housing options, and economic development growth in the region. They are also areas of significant walking and biking activity too.

Community Improvement Districts

The Atlanta Metropolitan Transportation Planning Area also contains 19 Community Improvement Districts (CIDs), self-taxing business districts that pool funds to reinvest in the public realm. Typical responsibilities of CIDs include street and road projects, trails, parks and recreation, stormwater and sewage, and public transit. These organizations have made strides toward supporting pedestrian and bike activity within their districts, demonstrating recognition of the significant benefits provided by high walking and biking commute mode shares.

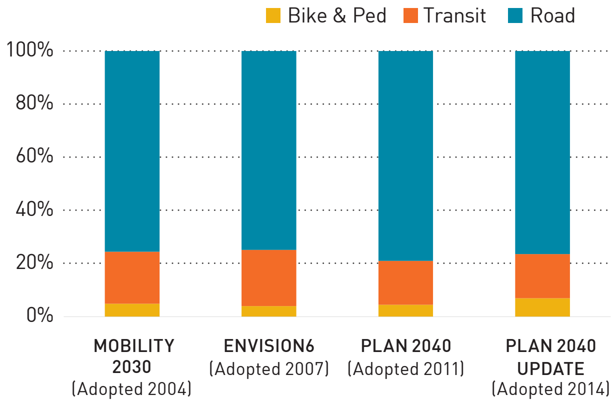
For example, the Buckhead CID has undertaken the transformation of Peachtree Street from a car-oriented road to a complete street with buffered sidewalks, bike lanes, new signals, a landscaped median, transit enhancements, and more visible crosswalks. CIDs can serve as stewards for walking and biking improvements in the region and as stakeholders in improving the walking and biking environment in the region's activity centers.

BIKE/PED FUNDING VS OVERALL TIP



Source: *Atlanta Regional Commission*

TIP FUNDING BY PROJECT TYPE



Funding Trends for Walking and Biking

Federal transportation funds are an important source of funding for infrastructure in Georgia and the Atlanta region. Federal funds can be used for a variety of modes, including walking, biking, and transit infrastructure. Federal funds also help local jurisdictions stretch the return on investment with their local dollars. Depending on the funding source and requirements, local jurisdictions typically have to pay a match from 1% to 20% of the total budget for a particular transportation project that uses federal funds.

Federal transportation funds are typically allocated to the states and then are distributed to local jurisdictions either by a state's department of transportation or a federally-designated Metropolitan Planning Organization. The Atlanta Regional Commission helps facilitate the prioritization and funding of transportation projects in the region.

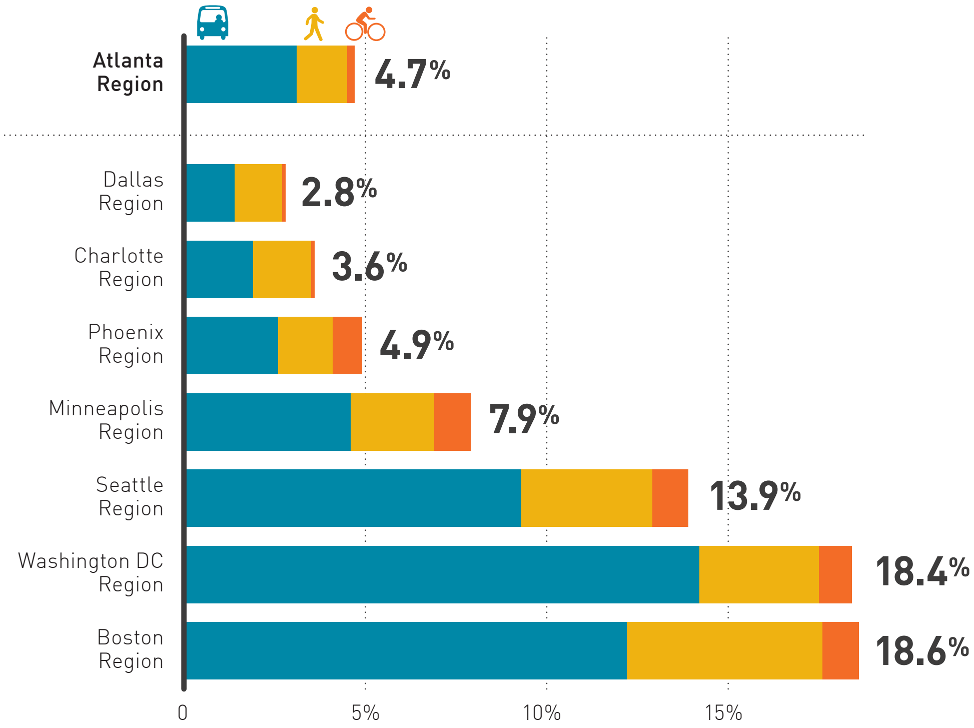
According to the *2014 Benchmarking Report: Bicycling and Walking the United States*, states spent an average of 2.1% of federal transportation dollars on walking and biking between 2009 and 2012. Over that same time period, Georgia had the 10th highest spending of states in the US on walking and biking projects, or 2.9% of all federal transportation dollars allocated to the state.

For the Atlanta region, federal funding trends for walking and biking is mixed. Over the last four Transportation Improvement Programs (TIP), total federal funds for the TIP have decreased. However, over the same period, the share of federal funds in each TIP for walking and biking projects increased. This is a positive trend.

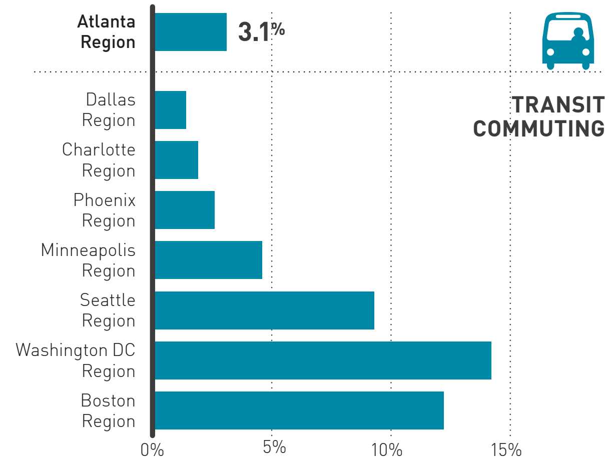
However, funding for walking and biking projects with federal funds is still low relative to the overall TIP budget. For the most recent TIP, walking and biking projects account for just over 5% of the overall TIP.

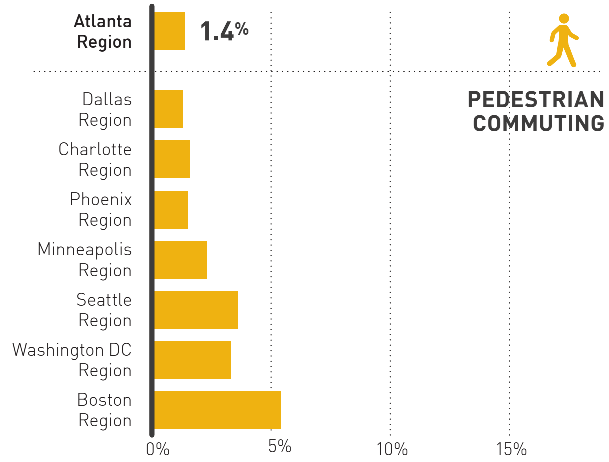
Federal transportation dollars are not the only source of funding for walking and biking infrastructure. Local capital and maintenance budgets, as well as private funding, are used to build and maintain the region's transportation infrastructure. Regardless of funding source, continued investment in the expansion, maintenance, and gap closure of the walkway and bikeway networks is needed in the region to create complete, connected, convenient, and safe infrastructure for people to walk and bike.

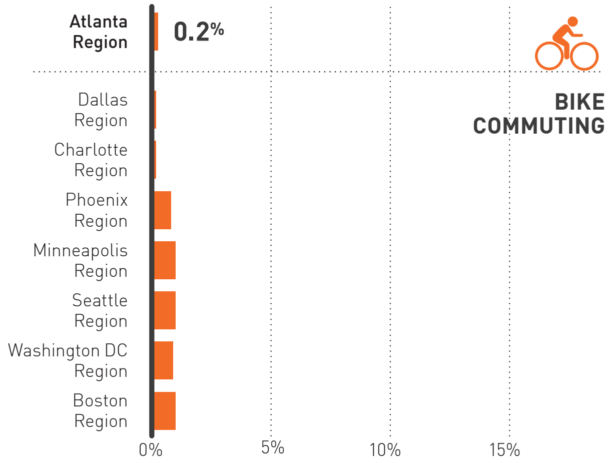
ACTIVE COMMUTE + TRANSIT RATES: ATLANTA VS. OTHER METROS



Source: US Census American Community Survey 1-year estimates, Table B08301. Charlotte data is from 2009, Boston data is from 2012, others are from 2013.



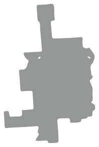




SCALE COMPARISONS AND POPULATION DENSITY: ATLANTA VS. OTHER METROS

PHOENIX
4.26 M people
292 people/sq mi

CHARLOTTE
2.26 M people
354 people/sq mi



MINNEAPOLIS
3.46 M people
426 people/sq mi

SEATTLE
3.61 M people
602 people/sq mi

ATLANTA
5.38 M people
623 people/sq mi

DALLAS
6.56 M people
682 people/sq mi

WASHINGTON DC
5.76 M people
883 people/sq mi

BOSTON
4.64 M people
1,283 people/sq mi

Source: Land area from US Census 2010. Population data from US Census 2013 American Community Survey 1-year estimates.

Commute Rates: A Comparison with Peer Regions

In the Atlanta region, 1.4% of commuters walk to work, and 0.2% bike to work. 3.1% of commuters take public transit to work, and the vast majority or these commutes also involve walking for one or more segment. Combined, these three modes account for 4.7% of the total commute mode share.

Rates of walking and biking to work in the Atlanta region are similar to or below those of selected peer regions. The Atlanta region's walk commute mode share is very comparable to the Dallas, Phoenix, and Charlotte regions, but only about a quarter that of the Boston region. The Dallas and Charlotte regions also have very similar rates of bike commuting to the Atlanta region, but a larger share of people in the Phoenix and Washington DC regions bike to work. The Atlanta region's transit commute mode share is higher than the Dallas, Charlotte, and Phoenix regions, but significantly lower than the Washington DC region.

When the Atlanta region is compared to the most walkable, bikeable, and transit-served regions in the country, Atlanta lags behind significantly. More than twice as many people walk or bike to work in the Seattle, Boston, and Minneapolis regions relative to the Atlanta region.

The fact that a greater proportion of people walk, bike, and use transit in the Seattle, Boston, and Minneapolis regions than in the Atlanta region is not altogether surprising. These regions have devoted significant resources to the planning, design, and implementation of high quality infrastructure that supports active transportation and public transit use. While funding data is not available at the regional level, there is a strong positive correlation at the state and large city levels between investments in active transportation and higher active commute mode shares. [1]

Development patterns and density are important but not the only determinants of walkable, bikeable, and transit-served regions. Seattle and Minneapolis have roughly the same or lower population densities than Atlanta, and yet have significantly higher active transportation commute rates. Likewise, the Phoenix region has a significantly lower population density than the Atlanta region, yet has similar levels of active transportation commuting. Density and proximity are important factors in deciding to walk, bike, or take transit, but so too is the availability of walking, biking, and transit infrastructure.

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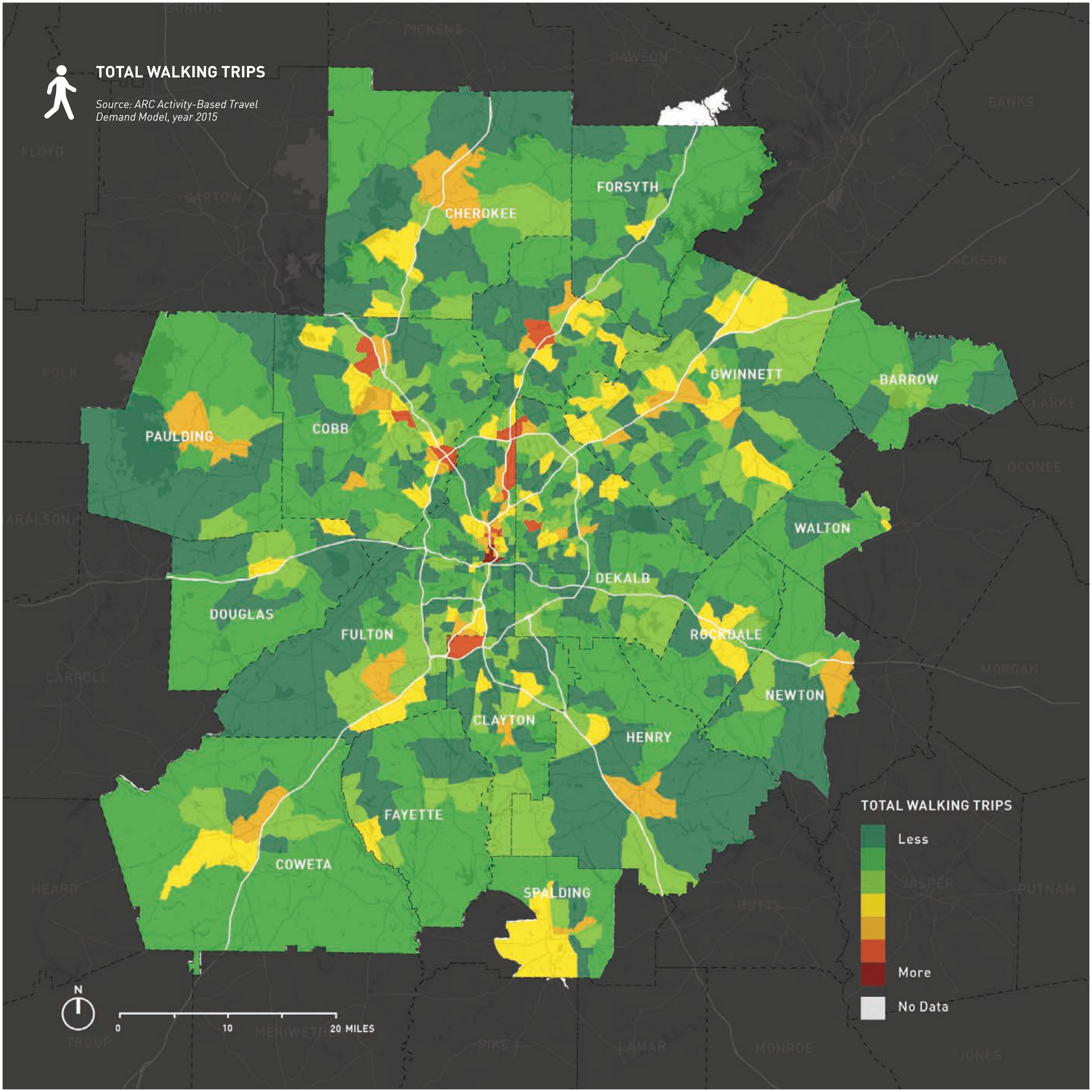
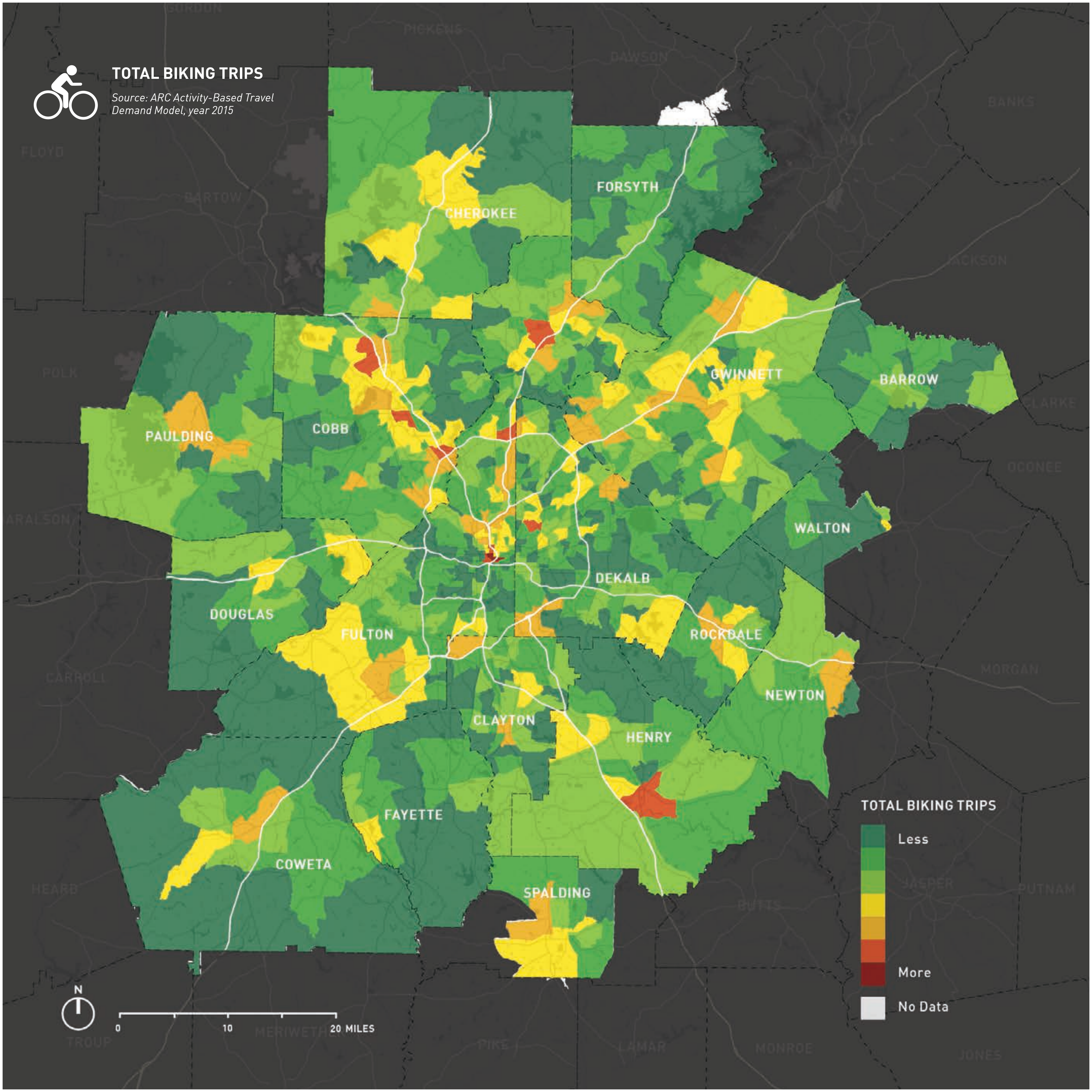
[1] *Source: Bicycling and Walking in the United States: 2014 Benchmarking Report. The Alliance for Biking and Walking."*



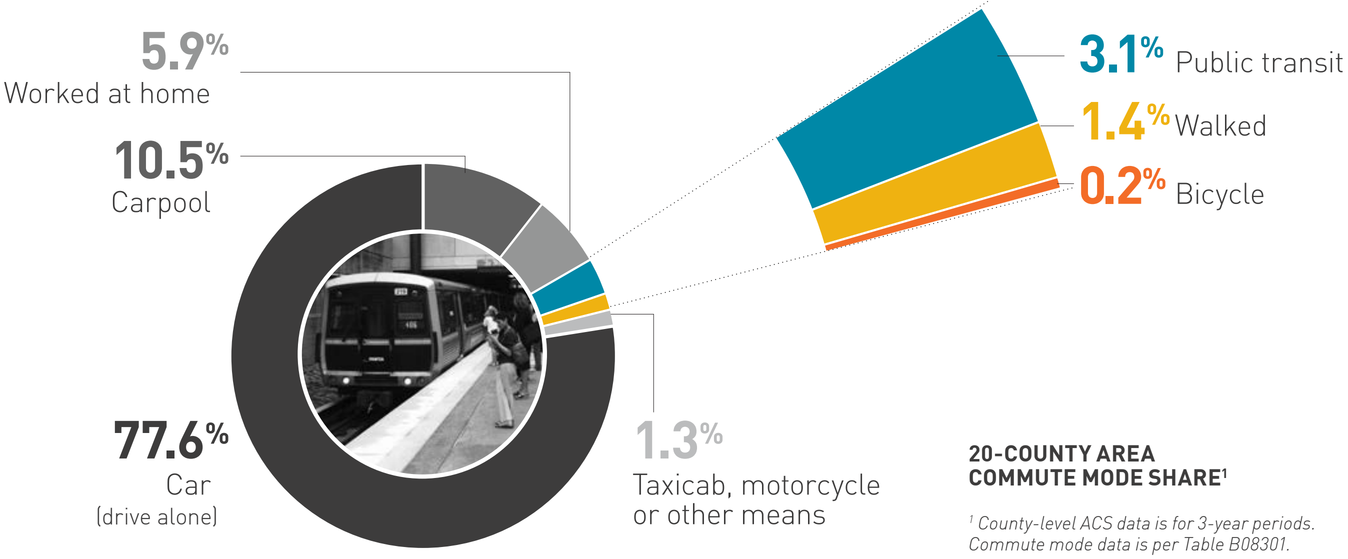
TOTAL WALKING TRIPS

Source: ARC Activity-Based Travel Demand Model, year 2015



TOTAL BIKING TRIPS

Source: ARC Activity-Based Travel Demand Model, year 2015



20-COUNTY AREA COMMUTE MODE SHARE[1]

[1] County-level ACS data is for 3-year periods. Commute mode data is per Table B08301.

Commute Rates: A Comparison of Atlanta Region Jurisdictions

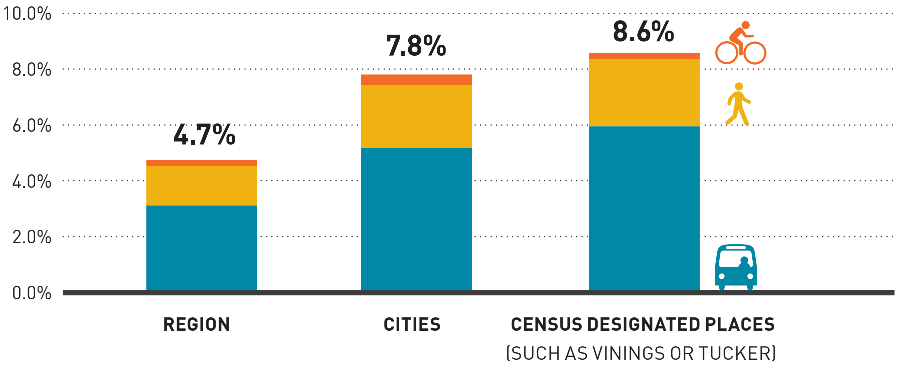
Across the Atlanta region, the predominant travel mode for commuting is driving alone, which represents about 77.6% of daily commute trips. Of the remaining commuter trips, 10.5% drive or ride in a car with others, 5.9% work at home, 3.1% take public transit, 1.4% walk, 0.2% bike and 1.3% use other means. On average, Atlanta region cities and CDPs have higher public transit, walk and bike commute mode shares (5.2%, 2.3% and 0.4% respectively) than the average county rates. These areas tend to be more accommodating to these modes, as they are more densely populated, destinations are in closer proximity, and many are served by transit. The cities, towns, and CDPs of the region have an average population density of 1,718 people per square mile, compared to the 20-county population density of 965 people per square mile.

What follows is a summary of the places in the region with the highest rates of active transportation and transit commuting. College Park has the highest combined active transportation and transit commute rate (walking, biking, and transit) as well as the highest transit commute rate in the region. Oxford has the highest walk commute rate in the region, and Forest Park has the highest bike commute rate in the region.

The top 20 jurisdictions in the region with the highest active transportation and transit commute mode share have one or more of these characteristics:

- MARTA service
- A Main Street, regional activity center, or Community Improvement District
- A university
- A population that is heavily dependent on transit, walking, and biking to get to daily destinations

LOCAL VS. REGIONAL DISTRIBUTION OF WALK, BIKE, AND TRANSIT COMMUTING



Source: US Census American Community Survey 3-Year Estimate. Table B08301.

TOP 20 JURISDICTIONS IN THE ATLANTA REGION WITH THE HIGHEST ACTIVE TRANSPORTATION + TRANSIT COMMUTE MODE SHARE

Rank	City	Walk + BIke + Transit	Walk	Bike	Transit
1	**College Park**	**31.3%**	**6.4%**	**0.0%**	**24.9%**
2	**Oxford**	**25.9%**	**25.3%**	**0.6%**	**0.0%**
3	Waleska	18.9%	18.9%	0.0%	0.0%
4	Doraville	18.0%	4.8%	0.0%	13.2%
5	Sunny Side	17.5%	17.5%	0.0%	0.0%
6	East Point	16.6%	1.4%	0.5%	14.6%
7	Chamblee	16.1%	2.6%	0.0%	13.5%
8	Atlanta	15.8%	4.7%	0.8%	10.3%
9	Lithonia	14.8%	1.8%	0.0%	13.0%
10	Brookhaven	13.0%	1.5%	0.0%	11.5%
11	**Forest Park**	**12.0%**	**5.4%**	**5.0%**	**1.6%**
12	Clarkston	11.8%	2.5%	0.6%	8.7%
13	Stone Mountain	11.1%	0.0%	0.0%	11.1%
14	Decatur	11.0%	3.9%	0.5%	6.6%
15	Sandy Springs	9.6%	0.7%	0.0%	8.9%
16	Conyers	9.0%	3.9%	2.9%	2.2%
17	Fairburn	8.5%	0.6%	0.0%	7.9%
18	Hapeville	7.4%	1.5%	0.0%	6.0%
19	Marietta	6.7%	3.4%	0.4%	2.9%
20	Pine Lake	6.4%	1.3%	0.0%	5.1%

🟨 Highest combined walk + bike + transit and highest transit rate

🟧 Highest walk rate

🟦 Highest bike rate

Source: US Census American Community Survey 1-year estimates, Table B08301 (2013)

College Park:
31.3% of commuters choose to walk, bike, or take transit
24.9% of commuters choose transit

The jurisdiction with the highest active transportation commute mode share is College Park, which is located just south of Atlanta across Fulton and Clayton counties. Proximity to MARTA and the airport (a significant source of employment for College Park residents), has many residents actively commuting by walking, biking, transit, or a combination of these modes.

College Park also has the highest share of commuters traveling via public transit. Home to roughly 14,000 residents and with a population density of 1,377 people per square mile, it has more than double the average population density for the region as a whole. The College Park MARTA station, served by the Red and Gold Lines, is about a 20-minute subway ride to Five Points Station, with 5-minute headways at rush hour. The College Park MARTA station is also served by seven buses. These factors contribute to the high use of public transit.

Oxford: 25.3% of commuters choose to walk

The City of Oxford has the highest proportion of commutes made on foot. Oxford is a relatively small city located in Newton County along I-20. Oxford is also home to Emory University's historic campus, now known as Oxford College. Oxford has a population density of 1,148 people per square mile, which is almost double the average population density for the region as a whole. The city has a well-preserved historic character and a mix of land uses that supports frequent pedestrian activity.

Forest Park: 5% of commuters choose to bike

Forest Park has the area's highest bike mode share, with 5%. The largest city in Clayton County, it has a population of roughly 19,000 and a density of 2,019 people per square mile, which is more than double the population density for the region as a whole. There are several major employers in transportation and warehousing located in Forest Park, which provides opportunities for residents to work near their homes.

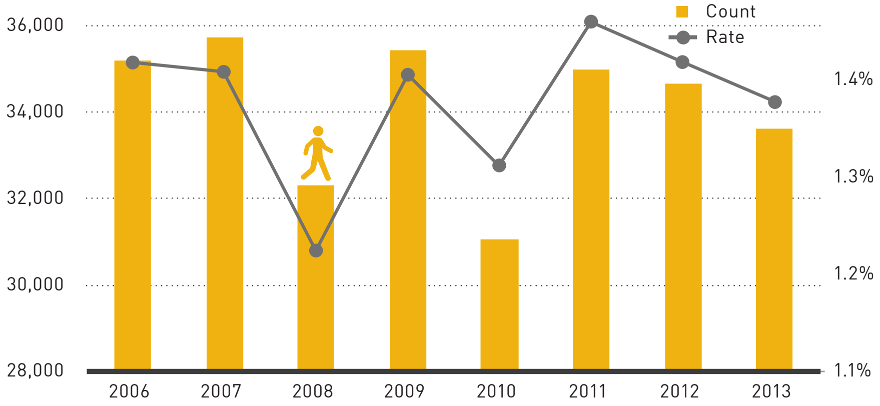
Commute Rates: Atlanta Region Active Transportation Trends

Over the past few years, the rates of walking, biking, and transit have remained relatively consistent, both in terms of the actual number of people walking, biking, and taking transit, and the percentage of all commuters walking, biking, and taking transit. Additionally, the rates of walking, biking, and transit seem to have been impacted by the recession.

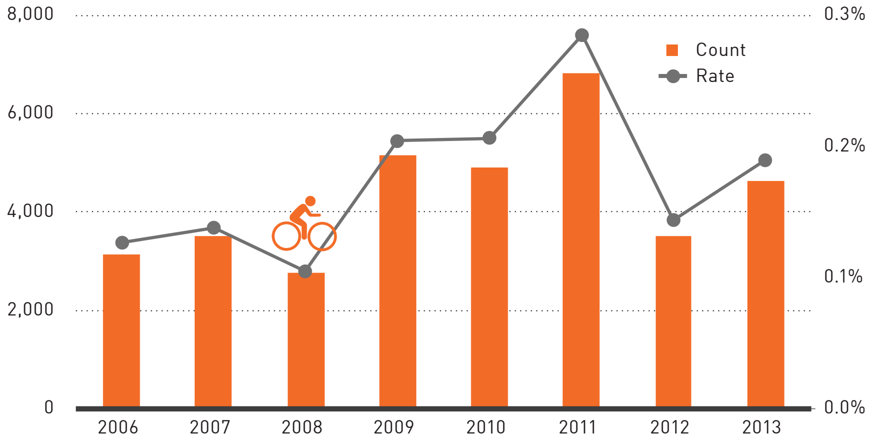
The rates for commuting by walking and biking actually dipped during the recession and have not returned to pre-recession levels as of 2013 (the most current commute information available for the MSA from the US Census). This dip may be the result of those in the region most dependent on walking and transit to get to work, such as service sector workers and households that cannot afford a vehicle, commuting less due to unemployment or under employment.

The exception to this trend is bike commuting. Bike commuting actually spiked during the recession, and while it has gone down since the recession ended, the rate and total number of people biking is still higher than pre-recession levels. The spike during the recession may have been a result of people opting to bike to save money. Anecdotal evidence also suggests that the loss of transit service in Clayton County between 2010 and 2015 led many who were previously dependent on transit to commute by bike instead.

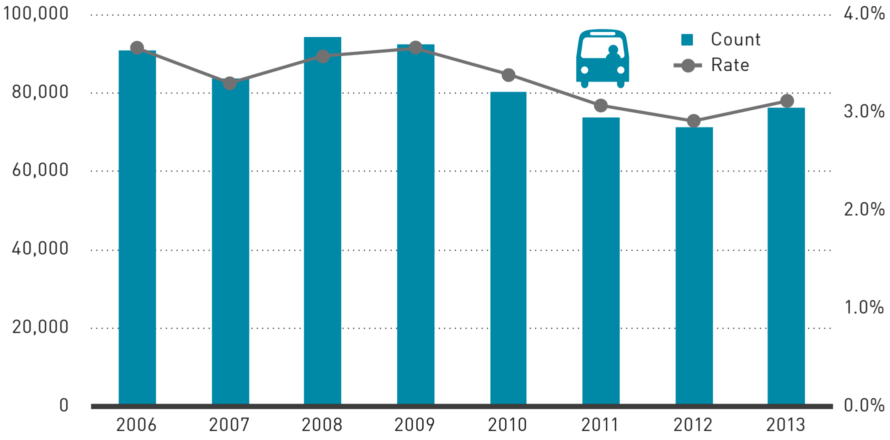
WALKING COMMUTE MODE SHARE TRENDS IN THE ATLANTA REGION



BIKING COMMUTE MODE SHARE TRENDS IN THE ATLANTA REGION

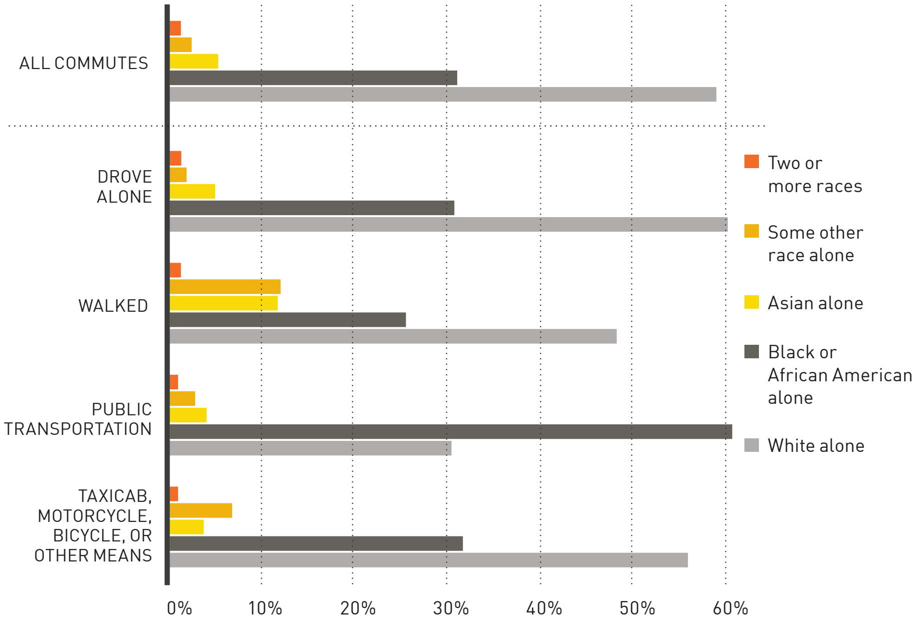


PUBLIC TRANSIT COMMUTE MODE SHARE TRENDS IN THE ATLANTA REGION



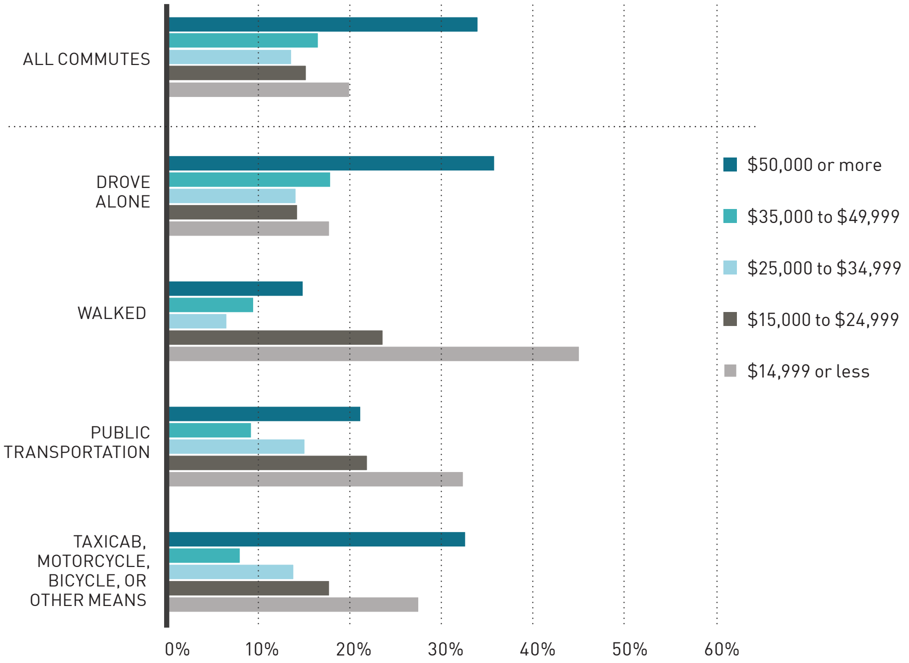
Source: US Census 2013 American Community Survey 1-year estimates, Table B08301

RACE AND ETHNICITY OF TRAVELERS BY COMMUTE MODE



Source: US Census 2013 American Community Survey 1-year estimates, Table S0201 for the Atlanta-Sandy Springs-Roswell MSA.

INCOME OF TRAVELERS BY COMMUTE MODE



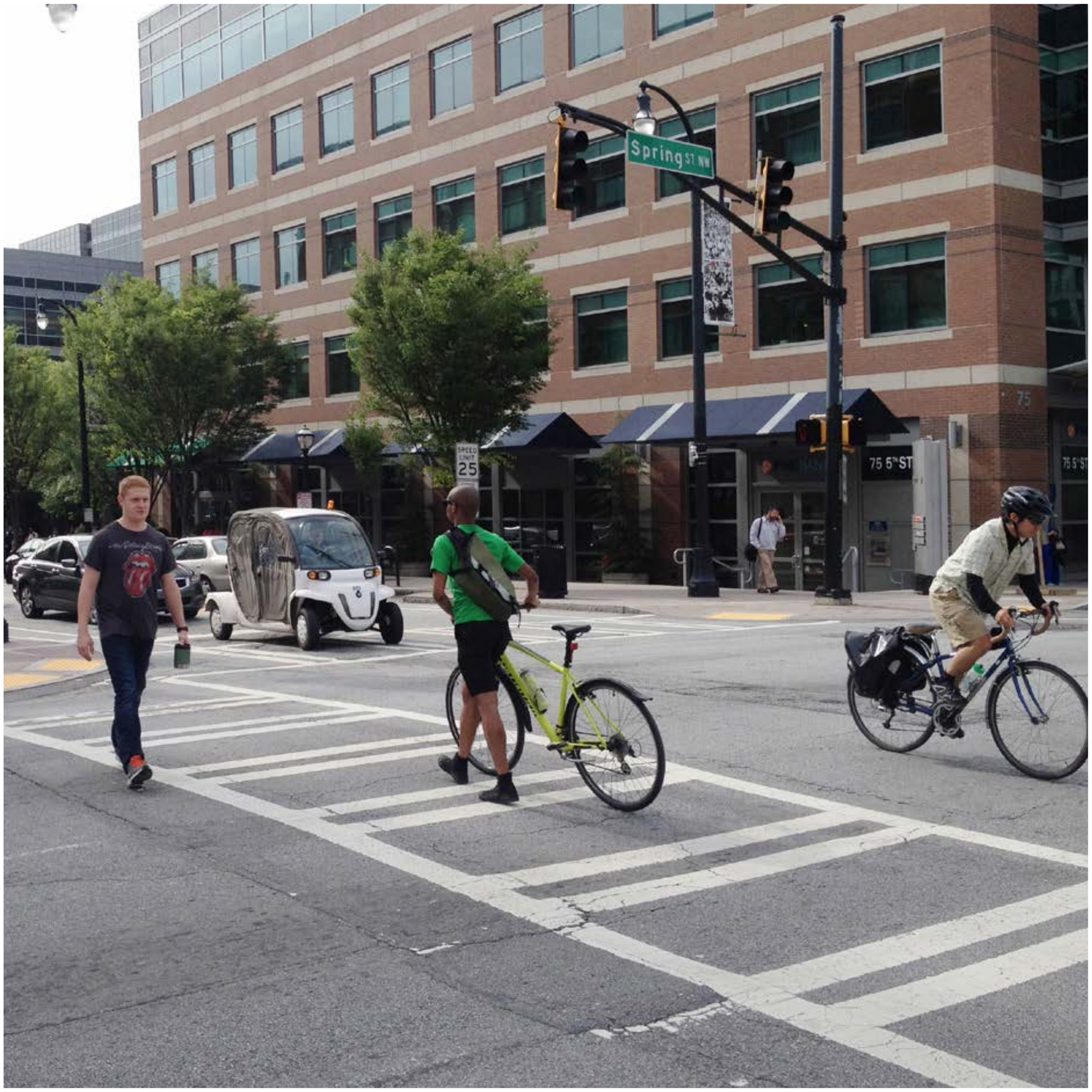
Commuting Trends: Race, Ethnicity, and Income

The Atlanta region is diverse in terms of race, ethnicity, and income. The differences in background and socio-economic status influence the travel choices people make.

Non-white workers are more likely to walk, take transit, or travel to work by some means other than driving. For example, African-Americans represent 31% of the workforce in the Atlanta region, but 61% of those that commute by public transit. Similarly, Asian-Americans represent 5% of the workforce in the region but 12% of those that walk to work.

Income also has an impact on the way people get to work. Workers in the region that have lower incomes are more likely to walk, bike, or travel to work by some means other than driving. Workers making $15,000 or less account for 20% of the workforce but 45% of those that walk to work and 32% of those that take public transit. The percentages are similar for those making between $15,000 and $25,000.

It is also worth noting that 49% of the workforce in the Atlanta region make less than $35,000. Transportation costs are a significant consideration for those in the region and will continue to influence access to job opportunities and economic growth.


Spring ST NW
SPEED LIMIT 25
75 5th ST

To Street EXIT
Southbound
To Downtown Atlanta · Airport
Northbound
EXIT To Street
DIRECTORY
219
406
marta

Georgia Tech Hotel and Conference Center
Barnes & Noble at Georgia Tech
Global Learning Center
760 Spring Street
Conference Center
TROLLEY
GT

MOBILITY

Walking, biking, and taking transit is part of daily transit patterns in the Atlanta region.

This section describes how people in the region walk, bike, and take transit. Current trends, choices, and travel behavior in the region related to walking, biking, and taking transit service are summarized. Topics related to demand, proximity, travel patterns, and travel distances are covered.

Walking and Biking Opportunities Near Home and Work

From a trip distance perpective, walking or biking to destinations in the region is more viable than generally perceived, particularly when it comes to bikeable distances. 12% of people live within a five-minute walk of an activity center and a quarter of all people in the region live within a five-minute bike ride of an activity center.

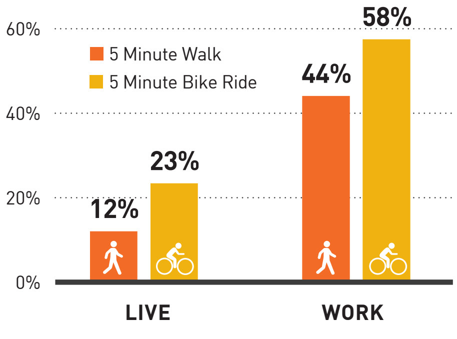
In terms of proximity to jobs, over 4 out of 10 people work within a five-minute walk of an activity center and almost 6 out of 10 people work within a five-minute bike ride of an activity center. These proximity facts highlight the opportunity to increase commuting by walking and biking by increasing housing options within and near activity centers. Roughly half of the region's employees work in an activity center or within a five-minute walk or bike ride of an activity center.

Mode Choice and Types of Trips

Walking, biking, and transit account for roughly 7% of all trips in the Atlanta region. Walking and biking trips account for approximately 5% of all trips, and transit trips account for approximately 2% of all trips. When looking only at commute trips, more people take transit (5%) than walk or bike (2%). The reverse is true for non-commute trips: more people walk and bike (about 6% to 7%) than take transit (about 1%).

The fact that, regardless of trip purpose, the total mode share for walking, biking, and transit is static around 7% suggests that the existing transportation system

PROXIMITY TO ACTIVITY CENTERS



Source: 2010 US Census; Atlanta Regional Commission

2% OF ALL TRIPS IN THE REGION ARE TRANSIT TRIPS

5% OF ALL TRIPS IN THE REGION ARE EITHER WALKING OR BIKING TRIPS

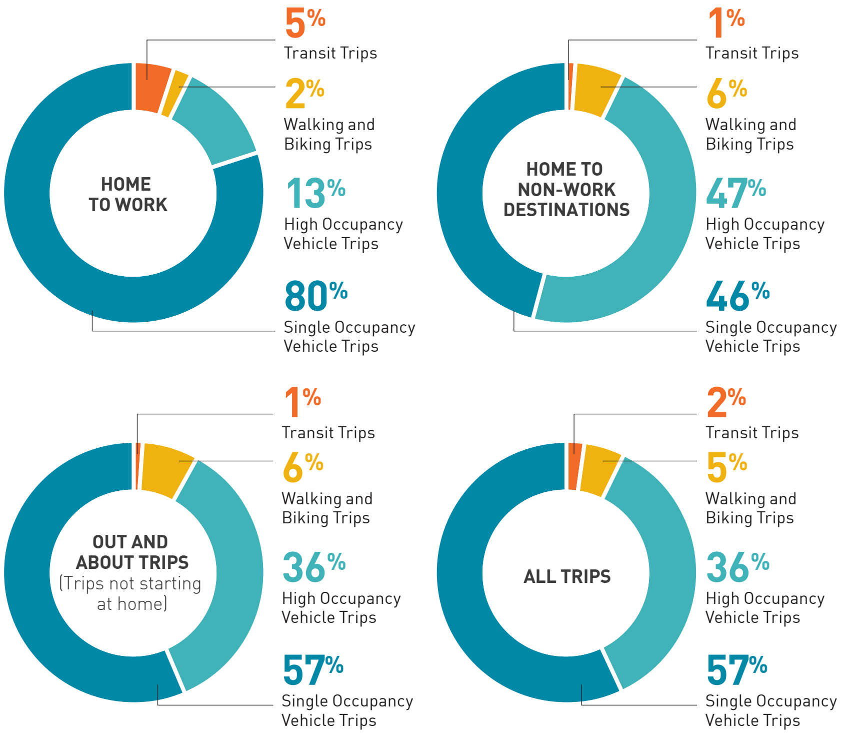
Source: ARC PLAN2040 Travel Demand Model and land use patterns limit the ability of people to meet their daily travel needs by walking, biking, and transit. The region's current level of transit service is helpful for work trips but less so for running errands or other daily trips. Likewise, walking and biking are helpful for some trips not related to commuting, but getting around the region for longer trips still requires driving alone, transit, or sharing a car. Enhancing transit service, expanding walkway and bikeway networks, and changing development patterns to create destinations in closer proximity to populations can help increase the convenience of walking, biking, or taking transit more frequently regardless of trip purpose.

Trip Distance Patterns by Mode

Within the Atlanta region, mode choice is influenced by trip length. When looking at all modes, **25% of all trips are less than 2 miles and 50% of all trips are less than 4.5 miles.**

Creating communities where destinations are closer and there are bikeway, walkway, and transit networks that are connected and convenient will help encourage more walking and biking in the region. Roughly 10% of current car trips in the region are under one mile, which is a reasonable distance to walk or bike. If half of those car trips were switched to walking, biking, or transit, there would be a 5% reduction in the number of car trips in the region. Such a reduction could have a significant impact on local roadway networks and congestion on interstates.

MODE CHOICE AND TYPES OF TRIPS IN THE ATLANTA REGION



Source: ARC PLAN 2040 Travel Demand Model, estimates for 2015.

MODE SHARE BY TRIP DISTANCE

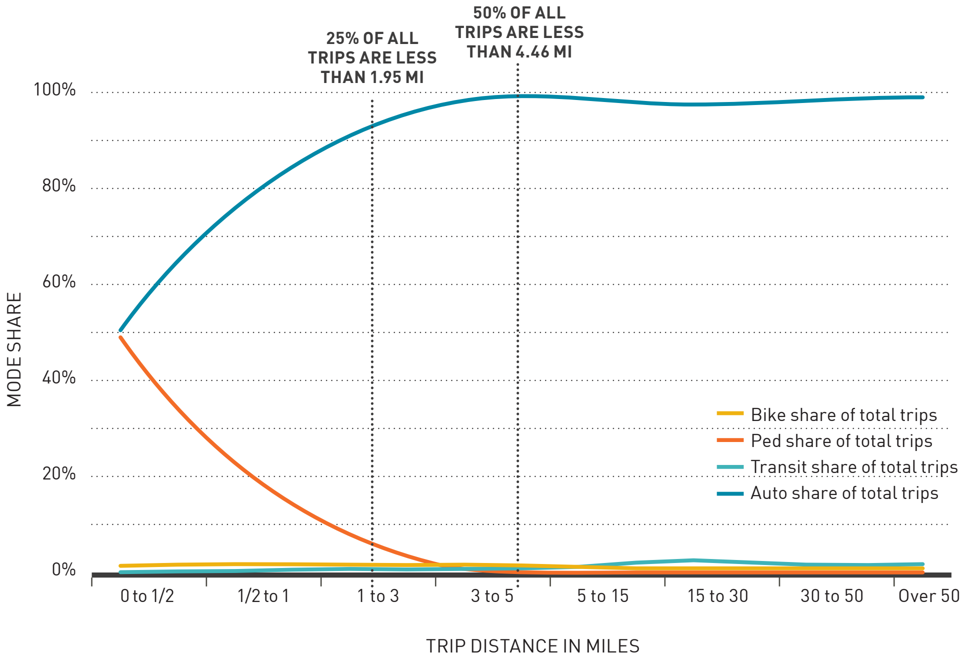
Trip Distance (mi)	Bike share of total trips	Walk share of total trips	Transit share of total trips	Auto share of total trips
Up to 1/2 mile	0.7%	34.7%	0.2%	64.4%
Up to 1 mile	0.8%	23.8%	0.3%	75.0%
Up to 2 miles	0.8%	16.8%	0.5%	81.9%
Up to 3 miles	0.8%	12.8%	0.6%	85.9%
Up to 4 miles	0.8%	10.1%	0.6%	88.5%
Over 4 miles	0.2%	0.00%	1.54%	98.3%

TRIP DISTANCES BY MODE

Trip Distance (mi)	Bike Trips	Waling Trips	Transit Trips	Auto Trips
Up to 1/2 mile	6.7%	31.3%	0.7%	2.9%
Up to 1 mile	23.5%	67.1%	4.1%	10.6%
Up to 2 miles	43.7%	91.2%	12.5%	22.3%
Up to 3 miles	60.1%	99.9%	19.0%	33.7%
Up to 4 miles	76.0%	0.0%	25.5%	43.7%
Over 4 miles	24.0%	0.0%	74.53%	56.28%

Source: ARC PLAN 2040 Travel Demand Model, estimates for 2015.

MODE SHARE BY TRIP DISTANCE

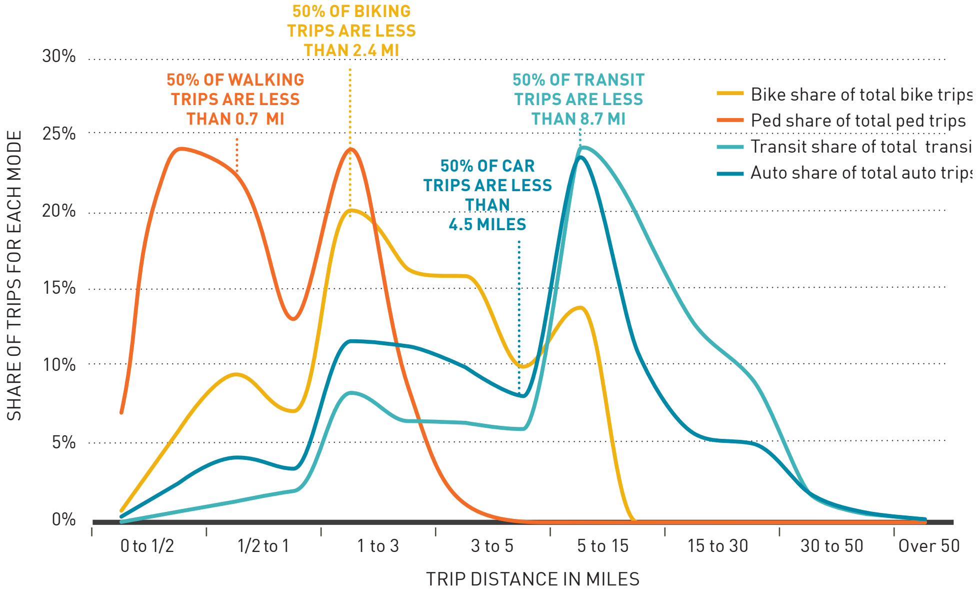


Source: Atlanta Regional Commission Activity-Based Travel Demand Model

Mode Share by Trip Distance

At short distances, active transportation trips account for a significant number of trips in the region. Walking trips account for almost half of all trips less than a quarter mile. Even **at trip distances of 2 miles or less, which account for 25% of all trips in the region, almost 1 in 10 trips in the region are by walking, biking, or transit.** Conversely, 50% of all trips in the region are longer than 4.5 miles. At trip distances over 4.5 miles, more than 95% are by car. These factors highlight the relationship between distance and mode choice. **To increase rates of walking, biking and transit, the focus should be on creating opportunities for short trips.**

TRIP DISTANCES DISTRIBUTION BY MODE SHARE

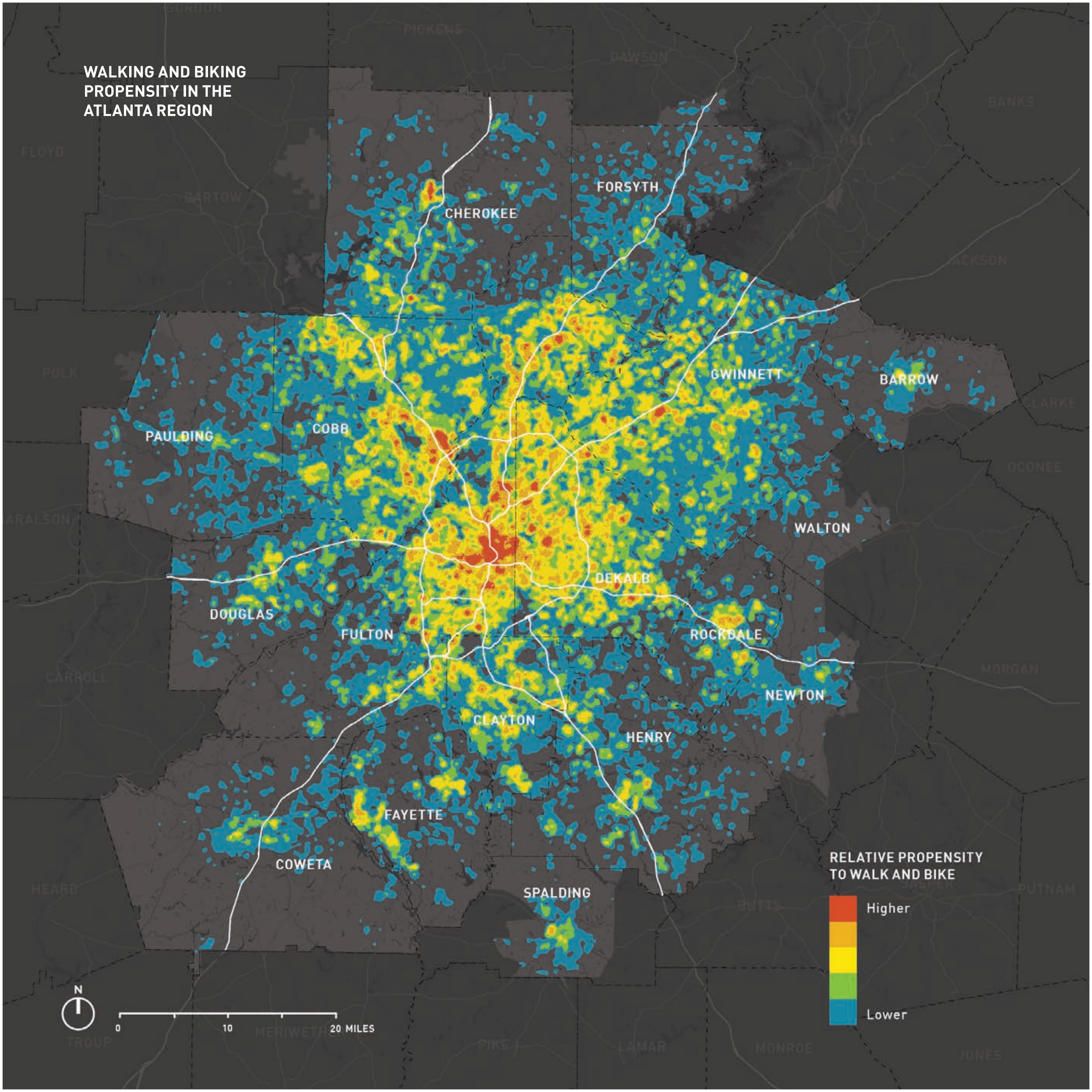


Source: Atlanta Regional Commission Activity-Based Travel Demand Model

Trip Distance Distribution by Mode

When looking at the trip distance by each mode, several trends stand out. First, and most importantly, walking and biking trips are relatively short. **About two-thirds of walking trips are less than one mile, and 90% of walking trips are less than 2 miles. Bike trips tend to be somewhat longer, but 75% of bike trips are still under 4 miles.**

Secondly, transit and auto trips tend to have relatively longer average trip lengths. **75% of transit trips are longer than 4 miles, and more than half of all auto trips are over 4 miles.**



WALKING AND BIKING PROPENSITY IN THE ATLANTA REGION

Walking and Biking Propensity in the Region

Propensity for walking and biking in the region is not evenly distributed. Density, proximity to certain destinations, like schools, or availability of infrastructure influence how and where people walk and bike.

A composite analysis of location-based characteristics identifies areas with high propensity for walking and biking. To the right is a summary of the inputs associated with potential walking and biking propensity:

LIVE

Areas with higher population density have higher rates of walking and biking. Population density was analyzed at the census block level to identify areas of high and low population density.

WORK

Like population density, higher densities of workers translates to higher propensity for people to walk and bike. Employee density was analyzed at the block level to identify areas for high and low population density.

PLAY

Trails and parks are attractors and generators of walking and biking activity. Proximity to trails and parks was analyzed.

TRANSIT

More than 3/4 of all transit trips start or end with a walking trip

LEARN

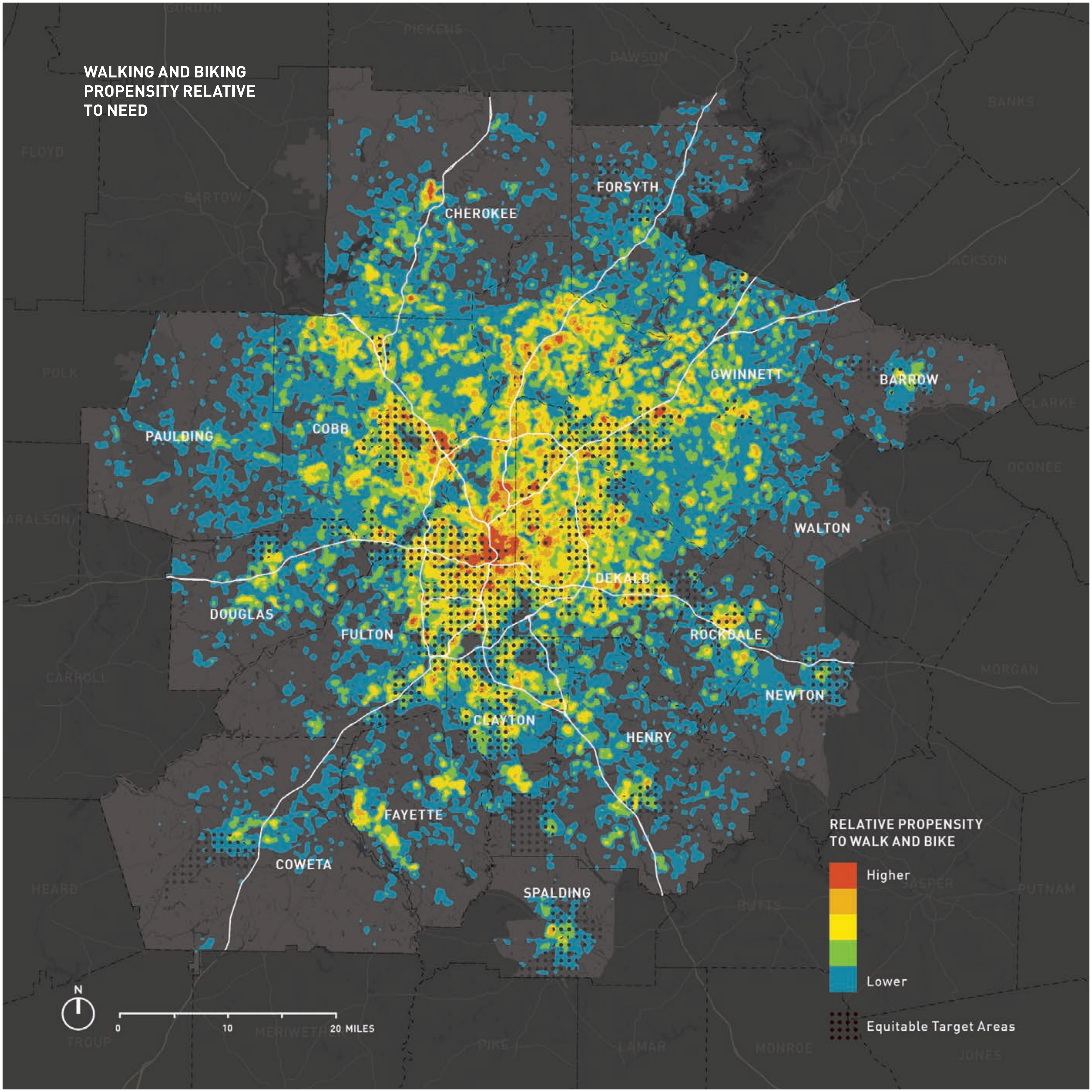
Schools are a significant source of walking and biking by populations that either can't drive because they are not old enough or are more likely to walk or bike for economic reasons. Proximity to elementary, middle, and high schools, as well as universities, was analyzed.

SHOP

Retail shopping areas are also attractors for walking and biking trips. Density of retail jobs, which can be used as a proximity for density of stores, was used to analyze areas with higher retail density.

SUMMARY OF FINDINGS

The highest propensity for walking and biking in the region is clustered in the core of Atlanta, roughly defined by the Atlanta BeltLine in Midtown and Downtown Atlanta. This area has the highest concentration and density of places to live, work, play, learn, shop, and take transit. Other major areas of the region with high walking and biking demand are the major activity centers, such as Perimeter, and traditional Main Street communities, like Downtown Fayetteville.



WALKING AND BIKING PROPENSITY RELATIVE TO NEED

Equity and Propensity for Walking, Biking, and Transit

For many in the region, walking, biking, and taking transit to get to work or daily destinations is a matter of economic need rather than choice. As noted in the Community Profile section of this report, 49% of individuals in the regional workforce make less than $35,000. For those taking public transit to work, 69% make less than $35,000. For those that walk to work, 75% of them make less than $35,000. For those that bike or take some other means of travel such as taxi, 59% of them make less than $35,000.

As noted in the Safety section of this report, the Atlanta Regional Commission has created ETAs to identify areas and populations with economic and social needs. Social equity and environmental justice policy exists to ensure that harmful effects and underinvestment from public monies do not disproportionately impact children and low income, minority, elderly, or disabled people within the community.

22% of Atlanta region residents live in Equitable Target Areas (ETAs) yet 37% of all bicycle crashes and 42% of pedestrian crashes occur within the ETAs. Not only are many in the region walking, biking, and taking transit because they don't have an economic option, their chance of being injured or killed while walking, biking, or getting to transit is significantly higher too.

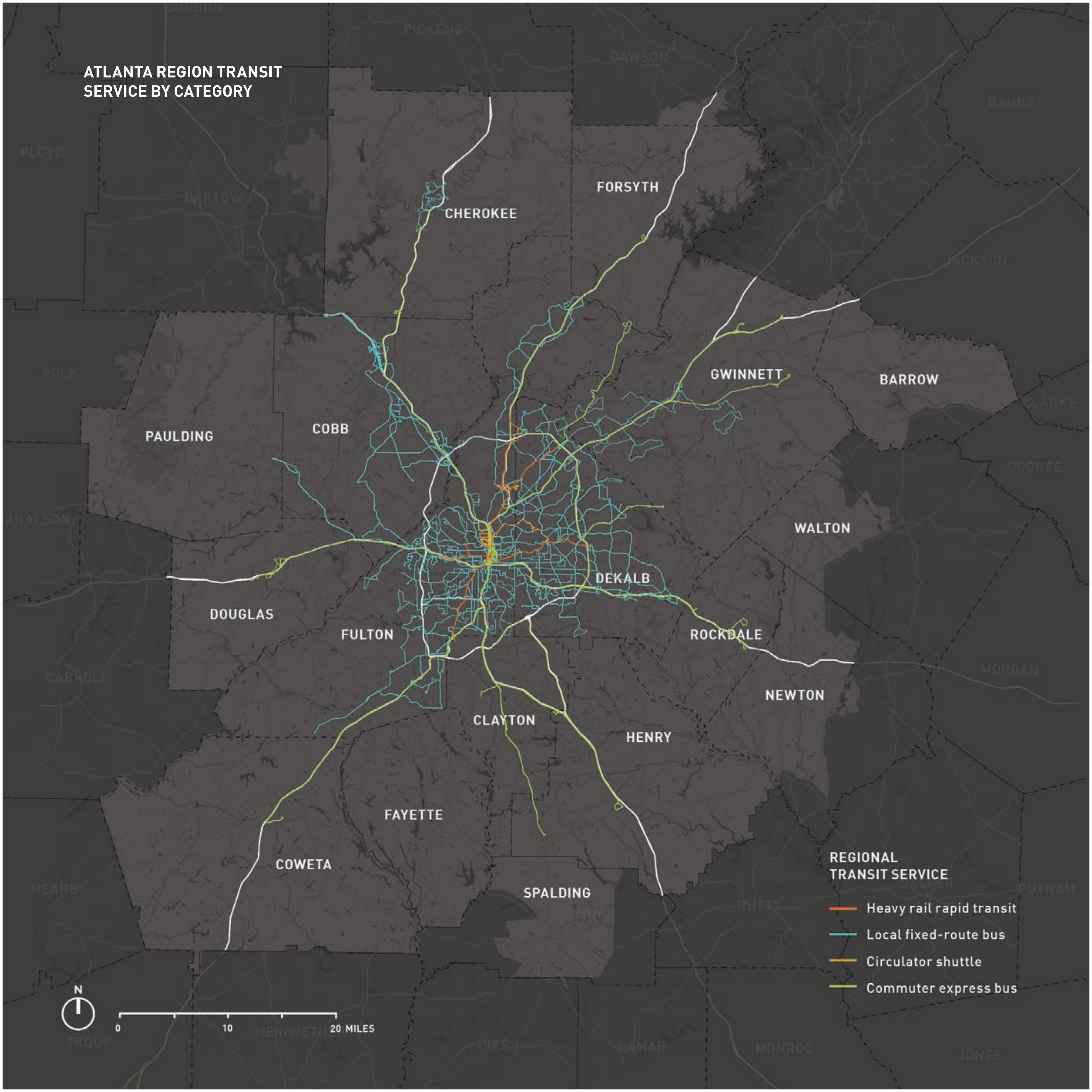
When the ETAs are overlaid on the Walking and Biking Propensity map layer, a clear theme emerges. The majority of ETAs cover areas with moderate to low propensity for walking, biking, and transit. This means that the place-based characteristics of ETAs are less likely to encourage walking, bicycling, and transit when people are given a choice. The propensity model does not consider demographic characteristics other than population and employment density, so a designation of "lower propensity" does not mean that the people who live in these areas are less likely to actually walk, bike, or take transit. It just means that the environment is less supportive of active transportation modes. In other words, those in the region with the greatest need to walk, bike, and take transit are living in areas that are less walkable, bikeable, and transit-served.

This theme highlights several trends to consider for future planning. First, the areas with the highest demand, or propensity, for walking, biking, and transit are also the least affordable places to live in the region. Second, the areas with the highest propensity for walking, biking, and transit are also where most of the jobs are located in the region.

These trends can be addressed in two ways. In terms of housing policy, increasing affordable housing options in areas with a high propensity for walking, biking, and transit areas can improve access to jobs for many in the region. In terms of transportation, enhancing transit service and walking and biking infrastructure around transit stops in ETAs can improve the safety and convenience of traveling for those that rely on these modes the most.

THOSE IN THE REGION WITH THE GREATEST NEED TO WALK, BIKE, AND TAKE TRANSIT ARE LIVING IN AREAS THAT ARE LESS WALKABLE, BIKEABLE, AND TRANSIT-SERVED

As noted in the Economic Compteitiveness section of this report, a recent study by Harvard researchers found that the effect of commuting time on social mobility was stronger than any other factor, including school quality, income inequality, segregation, rates of two-parent households, and crime rates. Transportation policy, particularly for walking, biking, and transit, is a significant factor in improving economic prosperity and opportunity for those that live in the region, particularly for those that need it most.



ATLANTA REGION TRANSIT SERVICE BY CATEGORY

Transit Access

Transit is a key component of the Atlanta region's mobility, facilitating over a quarter-million one-way trips per day and serving approximately one half-million residents of the region for at least some of their travel needs. It is a key contributor to a regional transportation system that offers true choice, particularly when combined with walking and biking.

Transit service in the metro region can be divided into four primary categories:

- High capacity rapid transit, or MARTA's heavy rail service
- Commuter express bus service, such as GRTA's Xpress routes or CCT and GCT express services to downtown and midtown Atlanta
- Fixed-route local bus service
- Private operator circulator shuttles, such as the Atlantic Station shuttle or Georgia Tech Trolley
- Paratransit service providing transit connectivity to eligible customers

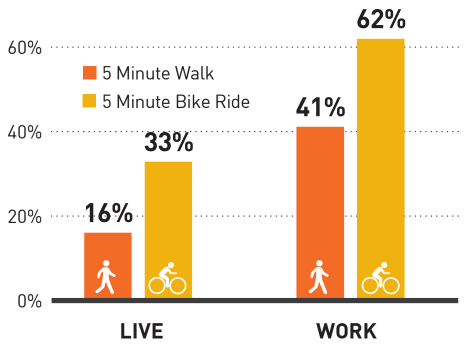
The subsections that follow describe how and where people in the region access and use transit service.

Proximity to Transit

Just over 1 in 10 people in the region live within a five-minute walk of transit. Almost 1 in 4 people in the region live within a five-minute bike ride of transit. Similarly, 4 in 10 people in the region work within a five-minute walk of transit and over 6 in 10 people in the region work within a five-minute bike ride of transit. Comparatively, transit accounts for 2% of all trips in the region and 7% of all trips in the region are by walking, biking, or transit.

This proximity analysis suggests even though transit service is close to where many people live or work, the convenience of walking or biking to a transit stop, or the transit service are not sufficient to encourage transit use. Expanding walkway and bikeway networks around transit stops as well as enhancing transit service has the potential to increase transit ridership, even with current development patterns.

POPULATION AND EMPLOYMENT PROXIMITY TO TRANSIT



Source: 2010 US Census and ARC

2% **OF ALL TRIPS IN THE REGION ARE TRANSIT TRIPS**

5% **OF ALL TRIPS IN THE REGION ARE EITHER WALKING OR BIKING TRIPS**

Source: ARC PLAN2040 Travel Demand Model

16% of people live and 41% of people work within a five minute walk of a transit stop.

IN THE ATLANTA REGION,

53% **OF ALL BOARDINGS ARE ON LOCAL BUS**

44% **OF ALL BOARDINGS ARE ON RAIL**

ACCESS TO TRANSIT BY MODE

Mode of Access to Transit	To Transit	From Transit
Walked	72.4%	80.6%
Dropped off	14.0%	8.6%
Drove alone	10.6%	8.6%
Rode in vehicle then walked or biked	1.8%	1.1%
Carpool or vanpool	0.9%	0.9%
Bicycle	0.3%	0.3%

Source: Regional On-Board Transit Survey Final Report (2010)

WALKING DISTANCE TO TRANSIT IN THE ATLANTA REGION

Distance	Rate	From Transit
Less than 1/8 of a mile	53%	80.6%
1/8 to 1/4 of a mile	27%	8.6%
1/4 to 1/2 mile	11%	8.6%
Greater than 1/2 mile	9%	1.1%

Source: Regional On-Board Transit Survey Final Report (2010)

How Do People Get to and from Transit?

Recent On-Board Travel Surveys conducted by ARC (2010) and GRTA (2010) indicate the majority of transit trips begin or end with a walking trip. Some form of driving represents the next most used mode, with the bicycle representing less than 1% of trips to and from a transit stop in the region.

How Far Do People Travel to Get to Transit?

The vast majority (83%) of walking trips to transit, which account for roughly 70 to 80% of all trips to and from transit stops, were a five-minute walk or less from their transit stop. Conversely, 9% of walking trips to transit stop were greater than a 10-minute walk, or roughly one-half mile or longer. In other words, **the majority of people in the Atlanta region access transit by walking and the majority of those walking trips are less than a five-minute walk.** To increase transit ridership, service needs to be provided in close proximity to either their origin or destination.

Origins and Destinations of Transit Service in the Region

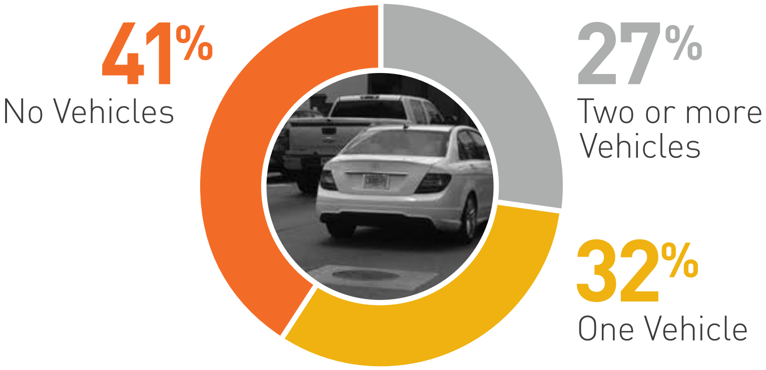
Because the majority of the region's transit activity is carried by MARTA, the vast majority of transit trips begin and end in Fulton and DeKalb County. MARTA expanded into Clayton County in 2015, but ridership data associated with new routes is not yet available. Additionally, the City of Atlanta accounts for over half of the region's transit boardings, with around 57% of linked trips originating in the city. The MARTA-serviced cities of Decatur, Sandy Springs, College Park, East Point, and Stone Mountain account for over 10% of the origins of regional linked trips.

Beyond the City of Atlanta, a great majority of transit trips still originate and end within Fulton and DeKalb Counties. This underscores the major employment concentrations in these two counties, with six of the region's primary jobs centers served directly by MARTA. It also underscores the predominance of transit use for commuting rather than non-work related trips.

ATLANTA REGION TRANSIT RIDER ORIGINS AND DESTINATIONS

Place	Trip Origin	Trip Destination
Home	51.7%	37.1%
Work	22.2%	28.3%
School/Daycare	4.7%	6.5%
College/University	4.4%	5.8%
Store/Retail	3.9%	5.6%
Medical	2.7%	4.8%
Another Home	2.1%	3.8%
Restaurant	1.1%	2.5%
Bank/Other Office	1.0%	1.4%
Airport	0.9%	1.3%
Hotel	0.5%	1.3%
Recreation	0.4%	0.7%
Place of Worship	0.2%	0.4%
Other	4.2%	0.4%

TRANSIT RIDER ACCESS TO HOUSEHOLD VEHICLES



Source: Regional On-Board Transit Survey Final Report (2010)

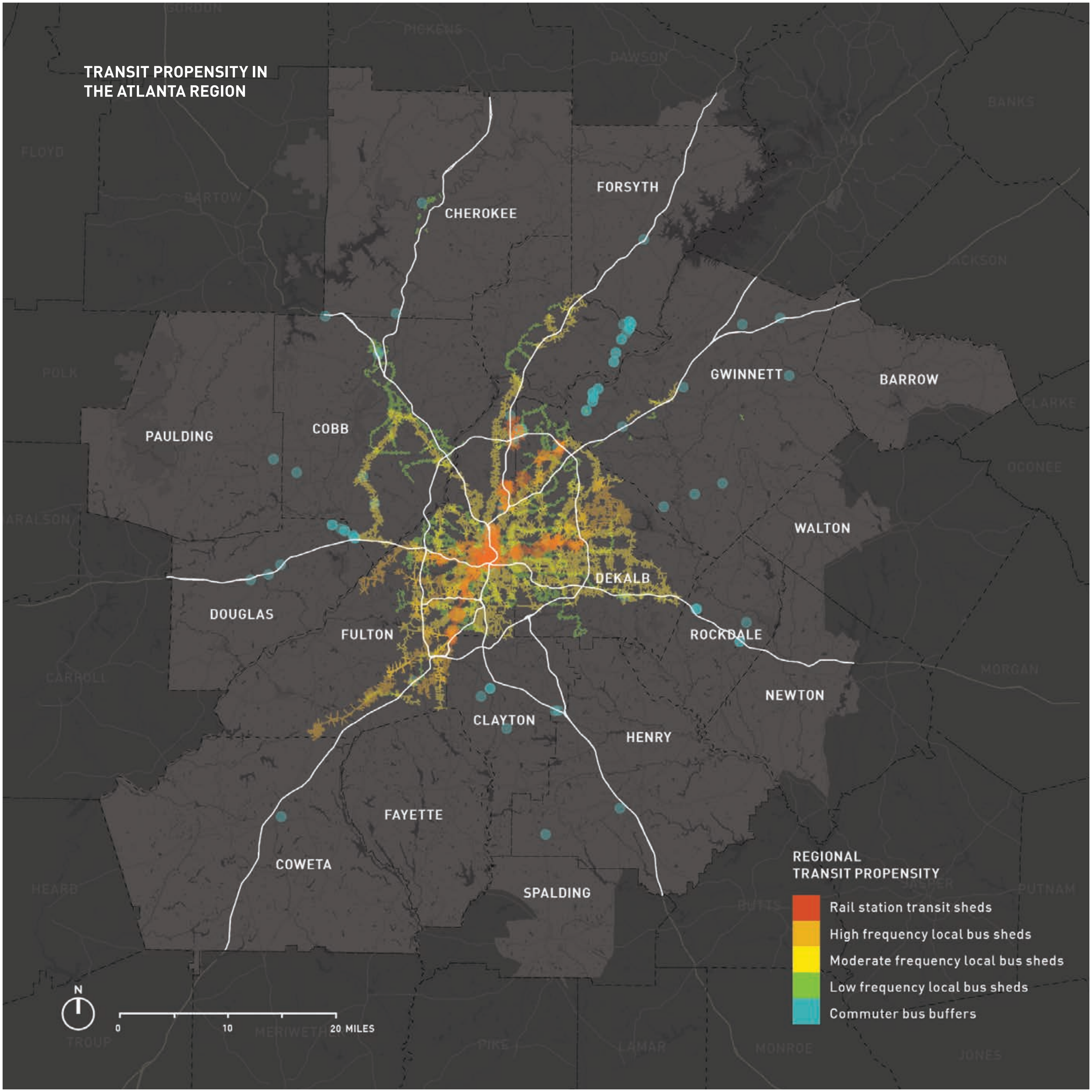
Looking at types of places transit riders are traveling to, the majority of trips are commute trips. Schools and universities account for about 10% of origins and destinations for transit riders, which highlights the fact they are trip generators for walking, biking, and transit trips. The origin and distribution of transit trips reinforces a simple fact: transit is still largely used for commuting in the region and is not a significant travel choice to make daily, non-commute trips.

Transit Need

Some in the region use transit because they have no other option, while others use transit by choice because of convenience or other reasons.

The ARC On-Board Survey found that roughly 4 out of every 10 transit riders have no access to a vehicle in their household and roughly 7 in 10 transit riders have one or no vehicles in their household. These facts underscore the need for transit in the region and the role it plays in providing economical options for households that cannot afford to drive.

While the majority of transit riders are taking transit because of need, there is still a significant portion of the population that is taking transit by choice. 1 in 4 transit riders have access to two or more vehicles in their household, and 36% of respondents to the ARC On-Board Survey said they did have access to a vehicle on the day of the survey.



TRANSIT PROPENSITY IN THE ATLANTA REGION

Quality and Geography of Transit Service in the Region

The Atlanta region's transit services collectively reach many of the counties in the region, though the type and level of transit service varies. Currently, heavy rail service is only available in Fulton and DeKalb Counties. Fixed-route buses serve these two counties as well as Clayton, Cobb, Gwinnett, Cherokee, and Hall Counties. The Georgia Regional Transportation Authority (GRTA) administers express commuter bus service to 12 counties in the Atlanta region, and many of its routes are operated by the aforementioned local providers under contract.

The transit propensity map on the previous page illustrates how transit service, as a function of frequency and travel speed, might impact propensity to walk or bike to a bus or rail stop. These do not reflect actual transit need based on demographic information for different parts of the region, although they do reflect the extensive levels of service planning and coordination that each of the region's transit providers has undertaken in determining routes and schedules.

To determine this geographic distribution of transit service quality, current transit service data from MARTA, GRTA, CCT and GCT was used to analyze transit-readiness of the overall metro region. In the map, transit sheds represent areas where walking and biking to transit stops is relatively convenient. The areas with potential were determined by service frequency and consistency, and drawn using buffers along the roadway network based on estimated willingness to walk or bike to reach a given level of transit service. This notion is based on the assumption that travelers in the region are more likely to walk or bike to transit – and are thus considered transit-accessible – when transit service is frequent, is available in the early morning and late evening, and is relatively consistent at all times of service. See the table on the following page for more information about how the transit propensity map was created.

Rail stations are a significant source of pedestrian activity in the region, with 44% of all transit boardings in the region at rail stations.

The map highlights the fact that transit service is concentrated in the center of the region, For areas outside Fulton and DeKalb County, transit service is concentrated along select major corridors or at strategic locations with park-and-ride stations for commuters. Those in the outlying counties that wish to use transit have to drive to commuter bus stops, live along a major corridor, or drive to a MARTA station.

This geographic distribution of service propensity illustrates that the region has strong transit service in its central urbanized counties but offers transit service inconsistently outside of these counties.

TRANSIT SERVICE PROPENSITY FACTORS IN THE ATLANTA REGION

Transit Type/Service Level	Transit-Readiness Area Distance	Trip Destination
MARTA Rail	1 mile along the street network from the station	37.1%
Fixed-Route Local Bus with peak-hour service headways of less than 15 minutes	0.75 miles along the street network from stops	28.3%
Fixed-Route Local Bus with peak-hour service headways of at least 15 but less than 30 minutes	0.5 miles along the street network from stops	6.5%
Fixed-Route Local Bus with peak-hour service headways of 30 minutes or more	0.25 miles along the street network from stops	5.8%
Commuter Bus access points	0.5 mile radius from access points (park-and-ride stations or destination stops)—radius used to account for limited street network around many outer stops	5.6%
Service Frequency Premium	0.25-mile distance was added to transit sheds for routes where the ratio between Saturday service and weekday peak-hour service frequency was 1.5 or less. For example, a route where weekday peak hour headways are 15 minutes and Saturdays are 20 minutes would have a ratio of 1.33 between the two. This bonus was intended to recognize transit routes of relatively consistent service, suggesting that nearby travelers might be more inclined to rely on transit knowing that service levels are relatively even at all times. Any routes with a ratio of more than 1.5 did not have their sheds reduced, but simply did not include this premium distance.	4.8%

Proximity to transit stops and service frequency is an important factor that influences whether people use transit or other modes to get to daily destinations.

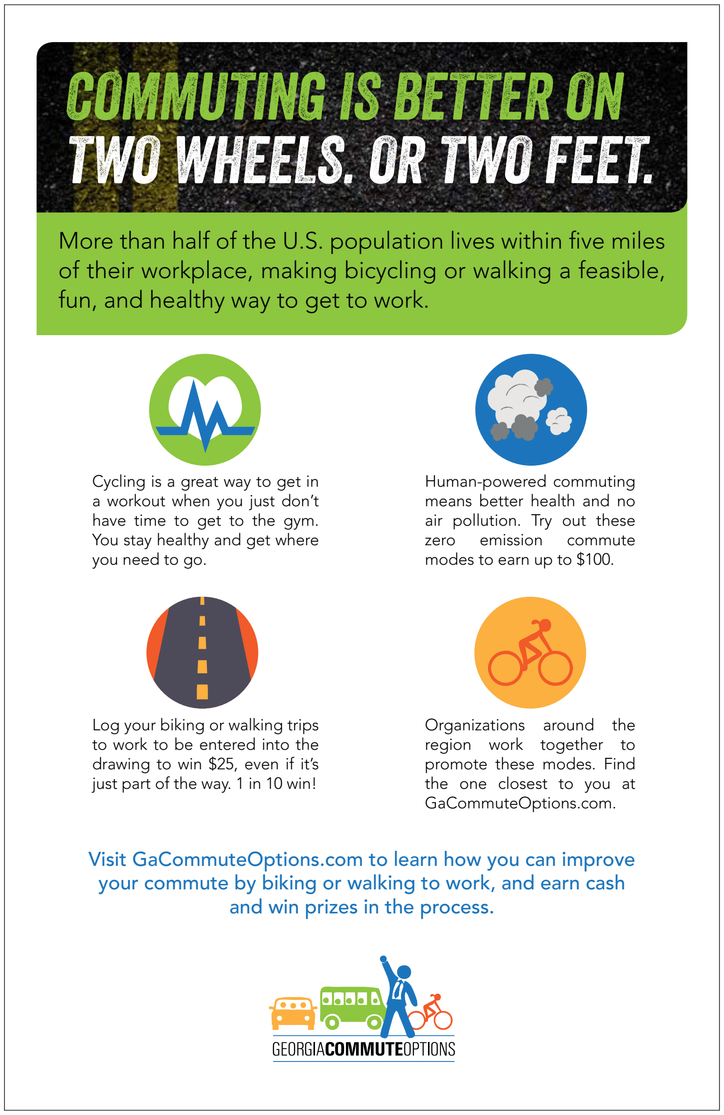
Managing Transportation Demand and Mode Choice

Since the mid-1980s, Atlanta-area Employer Service Organizations (ESOs) have used Transportation Demand Management (TDM) strategies to reduce the number of single-occupancy vehicle trips by encouraging walking, biking, and transit use. Traditional TDM focuses on employer-based ridesharing, but many have expanded their efforts to include marketing and outreach, incentive programs such as transit fare subsidies, promotion of more compact development patterns, performance measurement, and development of traveler information systems.

There are currently eight such organizations in the Atlanta region:

- ASAP+
- Buckhead Area Transportation Management Association
- Central Atlanta Progress
- Clifton Corridor Transportation Management Association
- Commuter Club
- Midtown Transportation Solutions
- Perimeter Transportation and Sustainability Coalition
- Clean Air Campaign.

Most of the Atlanta area ESOs are Transportation Management Associations that receive funding from an affiliated business within a Community Improvement District. The Clean Air Campaign, on the other hand, is a statewide ESO that receives state program funding and other resources that are not as readily available to the local ESOs. In addition, the MPO's regional transportation plan allocates additional funds for projects that support the TDM efforts.



COMMUTING IS BETTER ON TWO WHEELS. OR TWO FEET.

More than half of the U.S. population lives within five miles of their workplace, making bicycling or walking a feasible, fun, and healthy way to get to work.

Cycling is a great way to get in a workout when you just don't have time to get to the gym. You stay healthy and get where you need to go.

Human-powered commuting means better health and no air pollution. Try out these zero emission commute modes to earn up to $100.

Log your biking or walking trips to work to be entered into the drawing to win $25, even if it's just part of the way. 1 in 10 win!

Organizations around the region work together to promote these modes. Find the one closest to you at GaCommuteOptions.com.

Visit GaCommuteOptions.com to learn how you can improve your commute by biking or walking to work, and earn cash and win prizes in the process.

The Georgia Commute Options program provides incentives and resources to encourage commuters in the Atlanta region to travel to work by walking, biking, taking transit, carpooling, or teleworking.

Photo: Caroline Oelkers, @carolineoelkers

SAFETY

Safety is an important aspect of quality of life in the Atlanta Region. Accessing destinations and being able to travel comfortably, conveniently, and safely is a right shared by everyone.

According to the 2014 Benchmarking Report by the Alliance for Walking and Biking, walking and biking fatalities account for almost 15% of US roadway fatalities, yet account for less than 12% of all trips in the US. Georgia ranks third to last among all states in terms of walking and biking rates yet has the seventh highest rate of walking and biking fatalities in the country.

Georgia is designated one of 15 states designated as an FHWA Pedestrian Safety Focus Area and Atlanta as one of 29 cities in the US designated as an FHWA Pedestrian Safety Focus Area.

This section highlights some of the safety trends in the region related to walking and biking.

Crash Distribution in the Atlanta Region

Walking and biking crashes are not distributed evenly throughout the Atlanta region. The pattern of pedestrian crash risk by census tract suggests that walking is generally safer in parts of the region that were designed with pedestrians in mind, and in areas where there are higher rates of walking, such as downtowns and pedestrian-friendly activity centers.

Walking is generally less safe in areas that prioritize high-speed automobile travel. Walking safety also appears to be influenced by the fact that auto-oriented places in the region tend to have more affordable housing, which attracts residents that are more likely to rely on walking, to access transit, jobs, and meet their daily needs. The result is a mismatch between need and walkability that creates dangerous conditions for walking. Every county in the region has pockets of higher risk areas for walking. Dekalb, Fulton, Gwinnett, and Clayton Counties contain census tracts with the highest pedestrian crash rates.

See map on next page: Pedestrian Crash Risk by Census Tract

Bicycle crashes are more evenly distributed than pedestrian crashes. However like pedestrian crashes, there are pockets of higher-risk areas for bicyclists. Clayton, Cobb, DeKalb, Fayette, and Gwinnett contain census tracts with the highest bicycle crash rates in the region.

Crash risk for both walking and bicycling was assessed based on the rate of crashes relative to estimated distance traveled on foot and by bike in each census tract.[1] Using a rate is a more accurate measure of safety, and allows for comparison between transportation modes and geographies. When looking at bicycling risk, it is notable that the areas that have the highest number of bicycle-involved crashes overall such as downtown Atlanta and the Georgia Institute of Technology tend to be safer than many other parts of the region on a miles-pedaled basis. This finding lends support to the commonly-cited "safety in numbers" thesis.

See Map on next page: Bicycle Crash Risk by Census Tract

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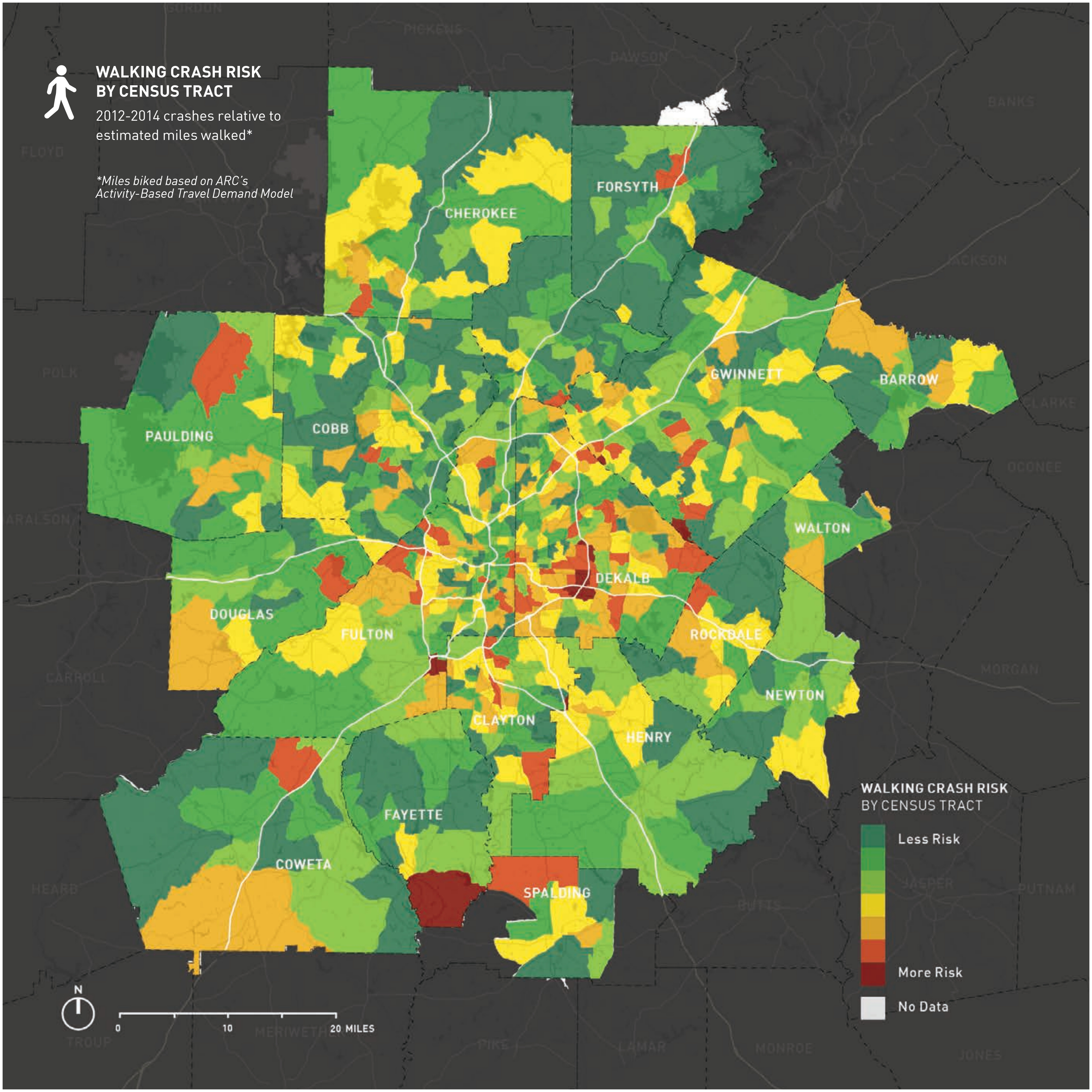
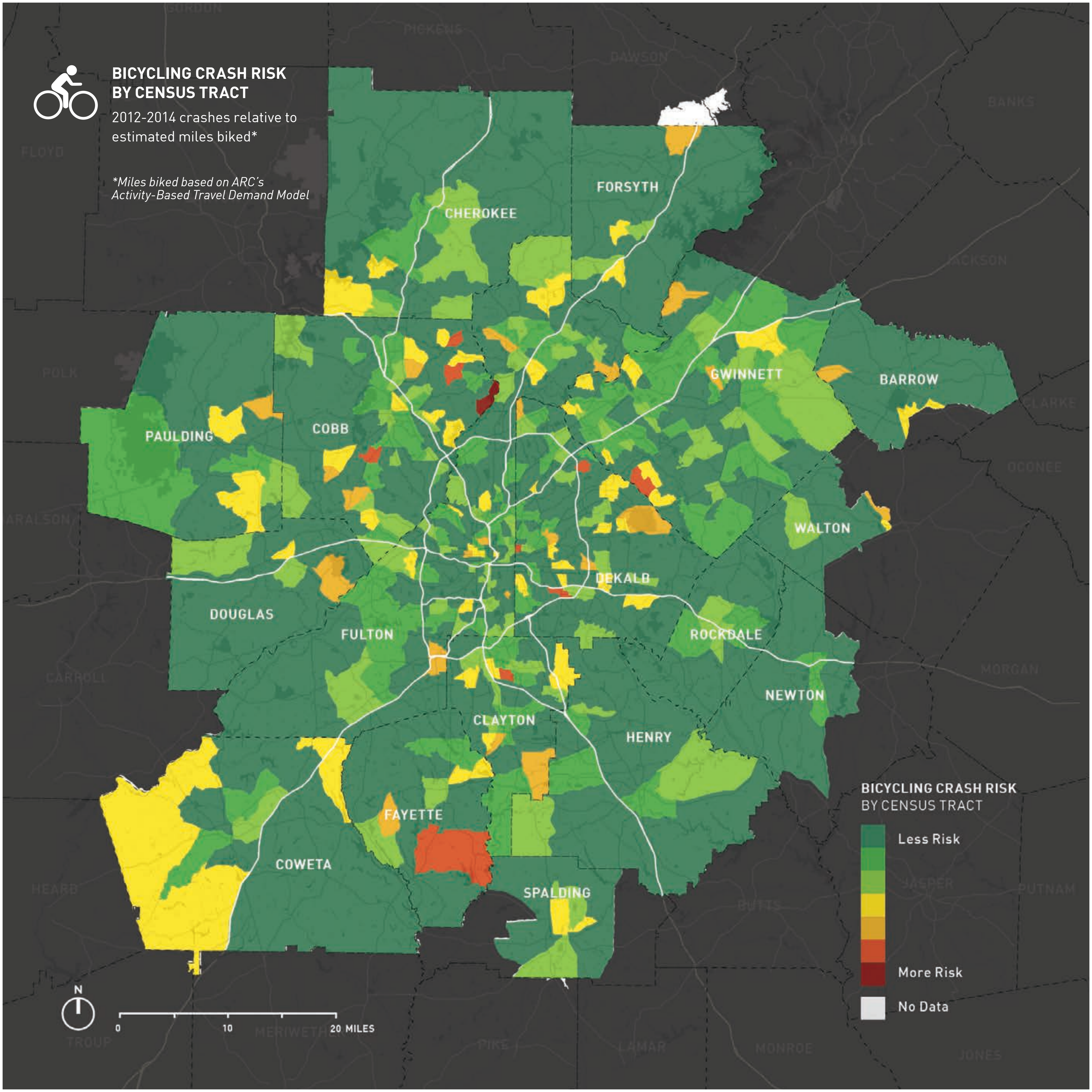
[1] *Estimated distances walked and biked by census tract were generated from ARC's Activity Based Travel Model.*



WALKING CRASH RISK BY CENSUS TRACT

2012-2014 crashes relative to estimated miles walked*

**Miles biked based on ARC's Activity-Based Travel Demand Model*



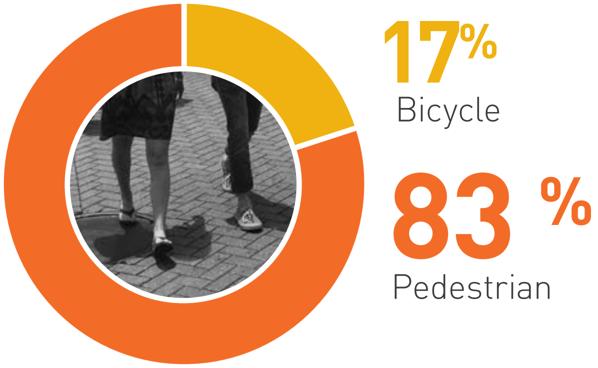
BICYCLING CRASH RISK BY CENSUS TRACT

2012-2014 crashes relative to estimated miles biked*

**Miles biked based on ARC's Activity-Based Travel Demand Model*

TOTAL WALKING AND BIKING CRASHES IN THE ATLANTA REGION 2012-2014

	PEDESTRIAN INJURIES & FATALITIES	BICYCLE INJURIES & FATALITIES
2012	1,631	345
2013	1,713	365
2014	1,656	347



Source: Georgia Electronic Accident Reporting System (2012-2014)

WALKING & BIKING TRIPS MAKE UP

5.3% OF ALL TRIPS

BUT

18% OF ALL ROADWAY CRASH FATALITIES

How Safe is Walking and Biking in the Atlanta Region?

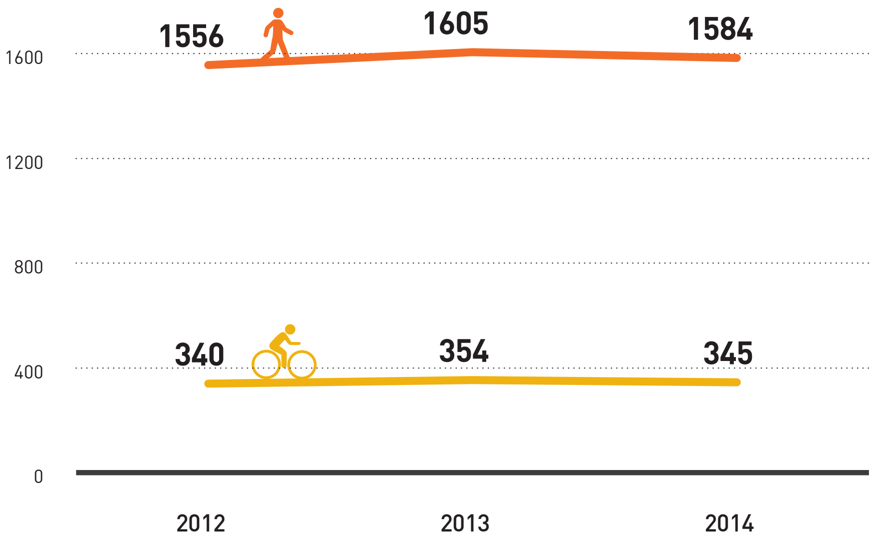
Drivers and passengers traveling in motor vehicles make up make up 94% of all people injured or killed on public roads in the region. Conversely, bicyclists and pedestrians make up just 6% off all crashes that result in an injury or a fatality.

However, relative to the amount of trips people take by bike or foot in the region, fatality rates are significantly higher for people walking and biking. **Walking and biking crashes account for about 18% of all transportation fatalities in the region, yet walking and biking trips account for just 5.3% of all trips.**

What: Number of Pedestrian and Bicycle Crashes resulting in an Injury or Fatality

Pedestrian crashes accounted for 83% of all walking and biking crashes between 2012 and 2014. During the same period, bicycle crashes that resulted in an injury or fatality accounted for 17% of all walking and biking crashes that resulted in an injury or fatality. Injuries and fatalities involving people walking and bicycling increased slightly between 2012 and 2013 before dropping in 2014. Overall, between 2012 and 2014, pedestrian crashes increased by 1.5% and bicycle crashes increased by 0.6%.

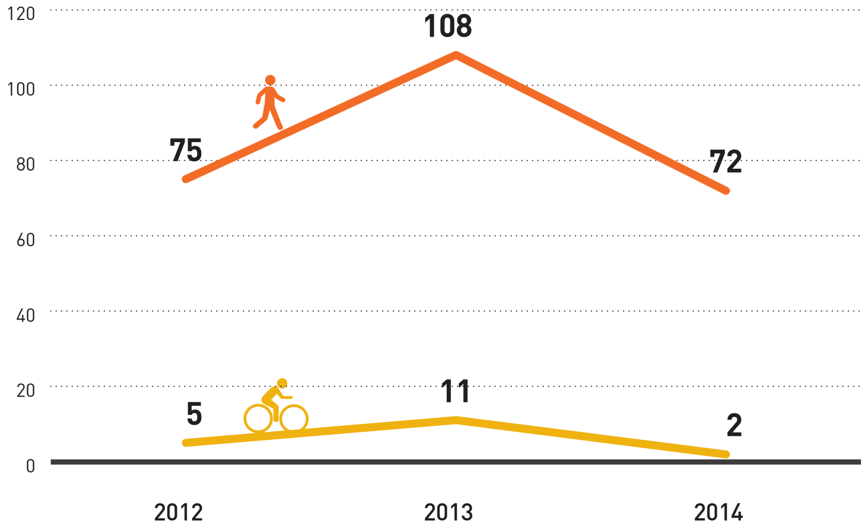
BICYCLE AND PEDESTRIAN INJURY TRENDS



What: Bicycle and Pedestrian Injury Trends

Pedestrians account for the majority of active transportation injuries in the region. From 2012 to 2014, pedestrian injuries increased by 1.8%, and bicycle injuries increased by 1.5%.

BICYCLE AND PEDESTRIAN FATALITY TRENDS



Source: Georgia Electronic Accident Reporting System

A 3 year period was selected for safety trend analysis due to data quality improvements introduced in 2012

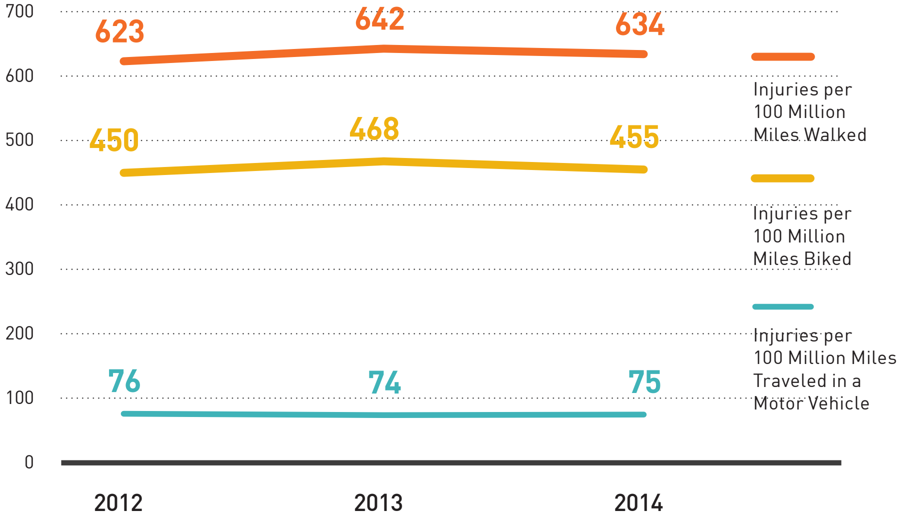
What: Bicycle and Pedestrian Fatality Trends

Pedestrians account for the majority of active transportation fatalities in the region. Pedestrian fatalities rose sharply in 2013 but fell below 2012 levels in 2014. Bicycle fatalities exhibit a similar pattern, more than doubling between 2012 and 2013 and then dropping to 2 during 2014.

What: Injury Rates

Between 2012 and 2014, injury rates for people walking, biking, and traveling in a motor vehicle remained relatively flat. What stands out is the fact that on a per-mile basis, both walking and biking are statistically more dangerous than driving or riding as a passenger in a motor vehicle. People biking are about 6 times more likely to be injured than people traveling in motor vehicles, and people walking are about 8 times mores likely to be injured than people traveling in a motor vehicle.

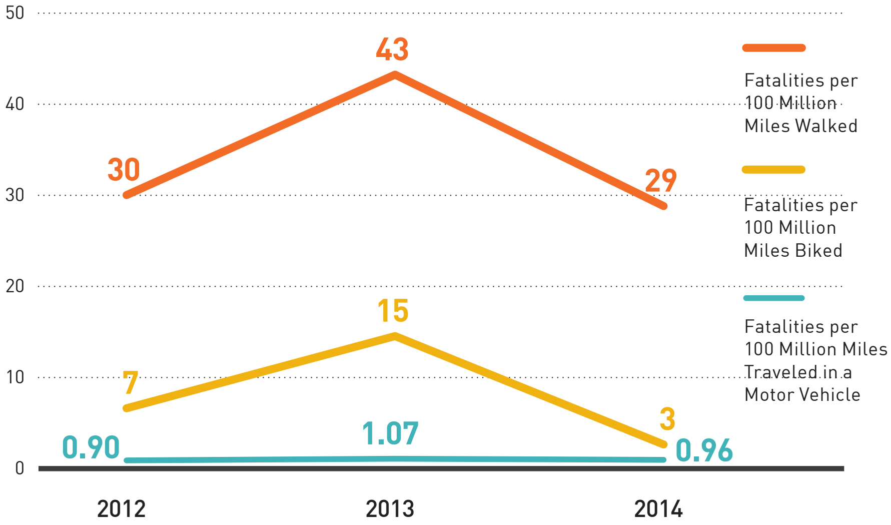
INJURY RATES



What: Fatality Rates

Fatality rates for walking and bicycling between 2012 and 2014 exhibit more volatility than fatality rates for motor vehicles. The most striking trend, however, is the not the variation within transportation modes but between them. Fatalities for motor vehicles hover around 1 per 100 million miles traveled. For bicyclists, the average fatality rate between 2012 and 2014 was 8 per 100 million miles pedaled, indicating that the risk of being involved in a fatal crash while bicycling is about 8 times higher than driving or riding in a motor vehicle. For pedestrians, the average fatality rate was 34 per 100 million miles walked. That means that on a per-mile basis, people walking are about 34 times more likely to be killed while walking compared to traveling in a motor vehicle.

FATALITY RATES



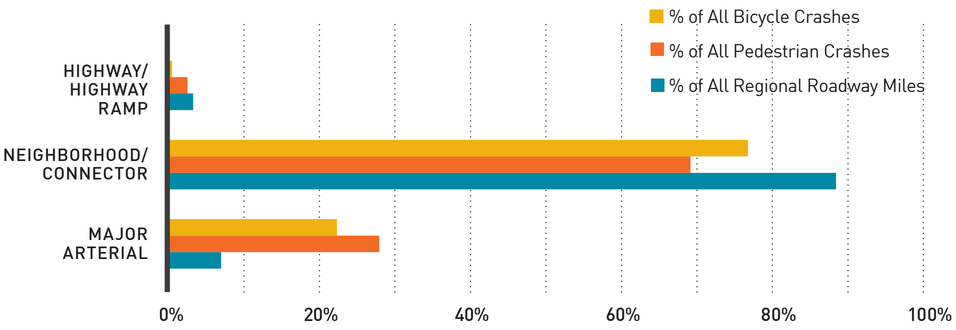
Source: Georgia Electronic Accident Reporting System

Where: Roadway Type

The majority of bicycle and pedestrian crashes occur on neighborhood and connector roadways. The second highest occurence is on major arterials.

When compared to roadway miles by type in the region, a different trend emerges. **Major arterials account for just 7% of all roadway miles, yet 22% of all bicycle crashes and 28% of all pedestrian crashes occur along major arterials.** The rate of crashes relative to roadway miles is disproportionate on these major roadways and highlight the safety improvements needed along major corridors in the region.

PEDESTRIAN AND BICYCLE CRASHES BY ROADWAY TYPE

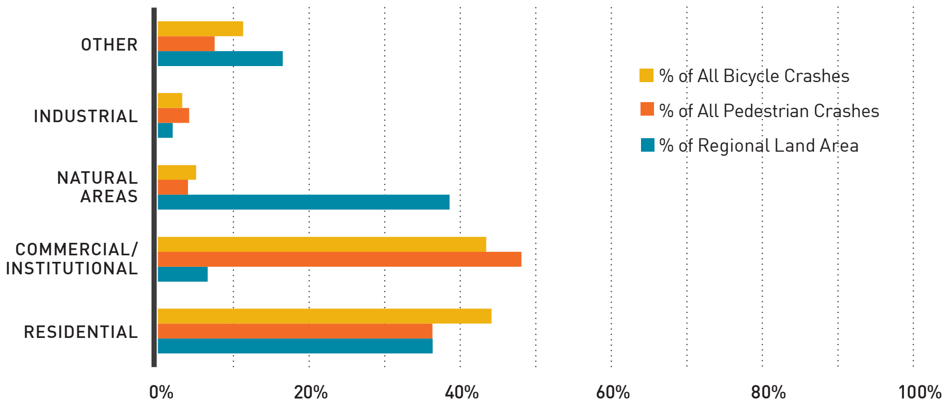


Source: Georgia Electronic Accident Reporting System; Atlanta Regional Commission

Where: Development Context

By land use type, the majority of bicycle and pedestrian crashes occur adjacent to commercial or institutional land uses. For pedestrians, almost 1 out of 2 crashes occur adjacent to commercial or institutional land uses. For bicycles, just over 4 out of every 10 crashes occur adjacent to commercial or institutional land uses. **Commercial and institutional land uses account for just 7% of the land area in the region , yet nearly half of all pedestrian crashes and over 40% of bicycle crashes occur adjacent to these land uses.** In other words, roadways through commercial and institutional areas are the most unsafe for bicyclists and pedestrians in the region.

PEDESTRIAN AND BICYCLE CRASHES BY DEVELOPMENT CONTEXT



Source: Georgia Electronic Accident Reporting System; Atlanta Regional Commission

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AN ANALYSIS OF CRASHES BY ROADWAY TYPE AND DEVELOPMENT CONTEXT STRONGLY SUGGESTS THAT

MULTI-LANE COMMERCIAL ARTERIALS ARE THE MOST DANGEROUS PLACE IN THE REGION TO WALK AND BIKE.

Equity and Walking and Biking Safety

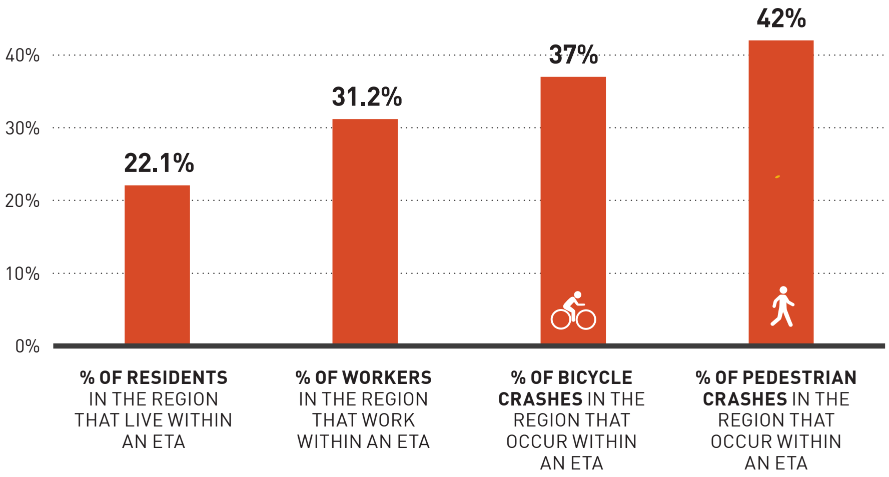
The Atlanta Regional Commission has developed a tool called Equitable Target Areas, or ETAs, to identify areas and populations with economic and social needs. Social equity and environmental justice policy exists to ensure that harmful effects and underinvestment from public monies do not disproportionately impact children and low income, minority, elderly, or disabled people within the community.

The ETAs were used for this plan to analyze whether walking and biking crashes disproportionately occur within these ETAs.

Just over 2 out of 10 residents in the region live within an ETA and just over 3 out of 10 workers in the region work within an ETA. Yet about 4 out of 10 bicycle and pedestrian crashes in the region occurred within ETAs. The rate of bicycle and pedestrian crashes is higher in ETAs relative to the percentage of the regional population that lives and works there.

Those that live within ETAs are less likely to own or have access to a household car, leading to a greater propensity and need to walk, bike, or take transit to get to work and other daily destinations. Targeting investment in walking and biking safety improvements within ETAs can help address this discrepancy in transportation safety.

WALKING AND BIKING SAFETY IN EQUITABLE TARGET AREAS (ETA)



Source: Georgia Electronic Accident Reporting System; Atlanta Regional Commission

High speeds, high vehicle volumes, and the absence of adequate walkway and bikeway infrastructure creates an environment that is often dangerous and stressful for those walking and biking along commercial corridors in the region.

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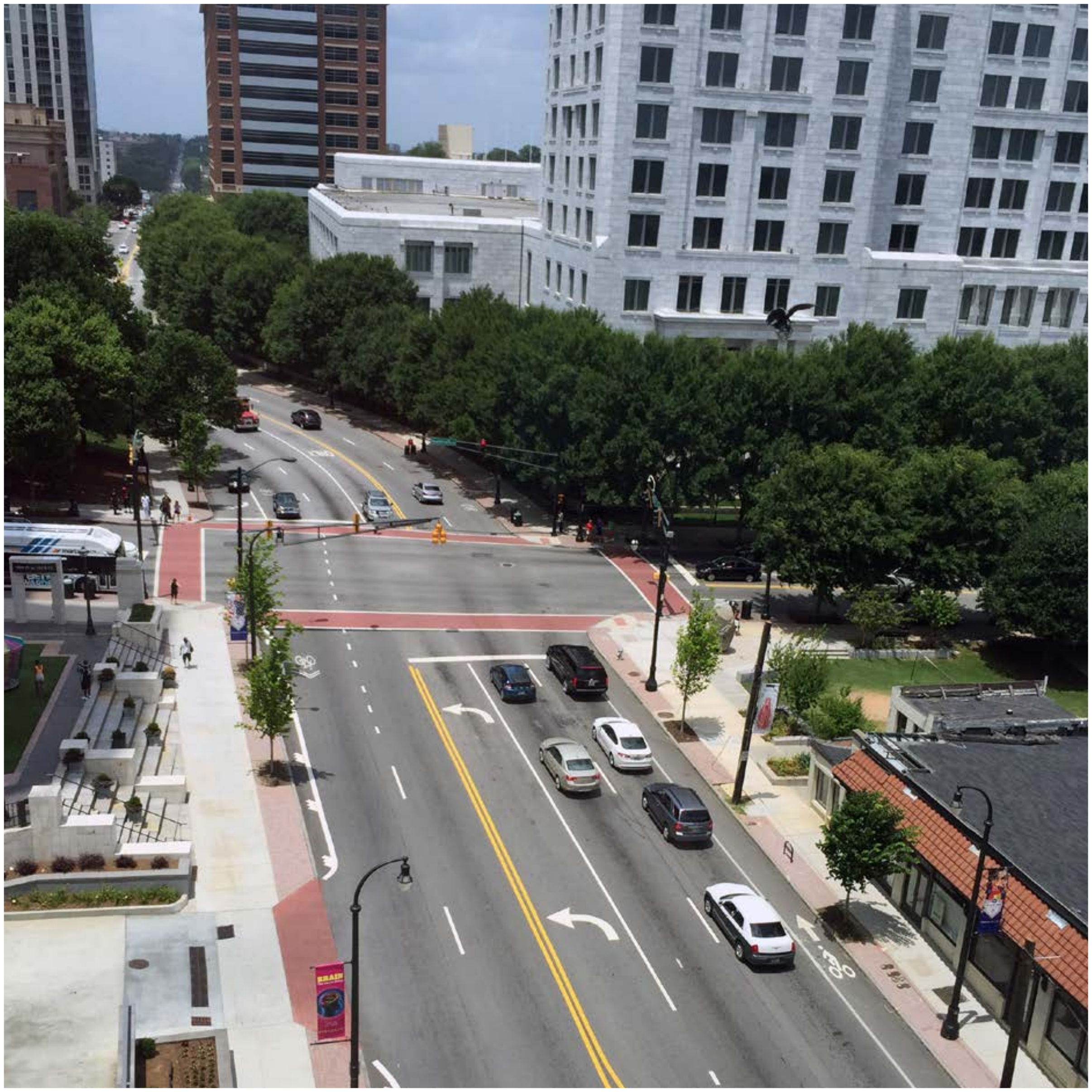
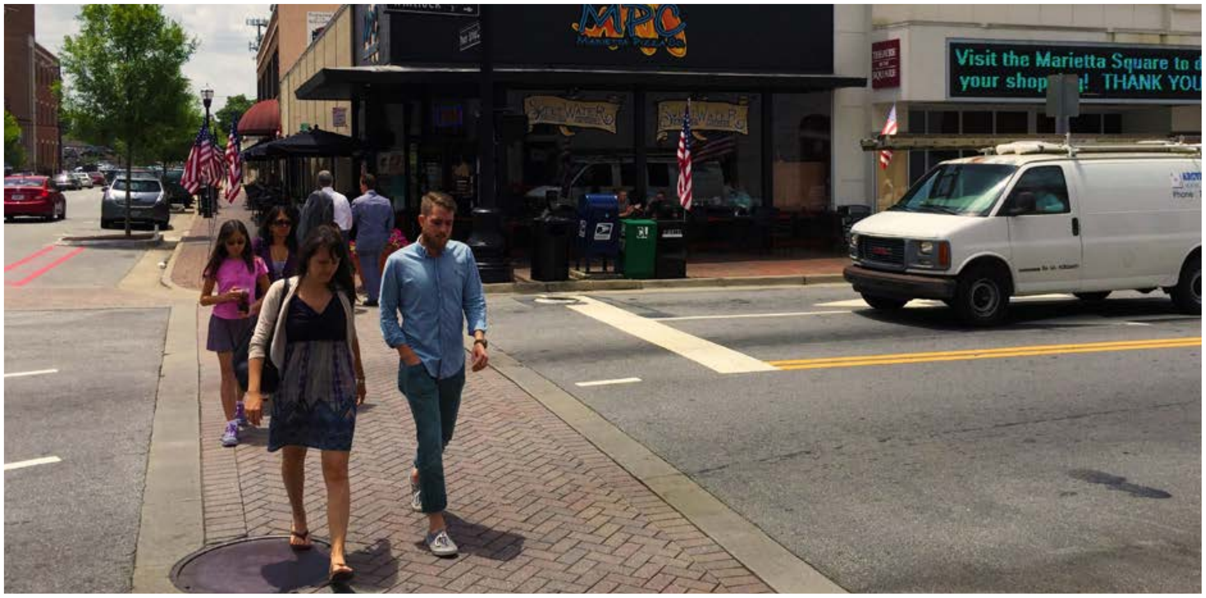
Wesley




MPC
Marietta Pizza Co.
Visit the Marietta Square to d
your shop ! THANK YOU

ECONOMIC COMPETITIVENESS

The Atlanta region is in competition with other major metro areas around the country, and the economic health of the region is tied strongly to quality of life, access to jobs, and business opportunities. Transportation infrastructure and transportation choices play a key role in connecting people and places.

Businesses are increasingly locating in areas with skilled and educated workforces. Activity centers in the region, particularly those connected to transit, provide the greatest diversity of business opportunities and workers. Schools and universities also create opportunities by providing the skills and training employees need to succeed in business.

Likewise, workers are increasingly making decisions about where they work based on quality of life. Education and technology advances have shifted the way businesses operate. An internet connection and access to an airport is frequently sufficient to help businesses connect with customers and clients. With businesses and employees tied less to geography, quality of life factors like commute options, access to parks and social activities, and educational opportunities are driving decisions about where people decide to work. Quality of life is an important economic development tool to recruit and retain businesses and a competitive workforce.

Economic competitiveness is also tied to topics like social mobility and public health. A workforce that spends excessively on transportation and health care needs can be a drag on economic growth and personal well-being. It can also negatively impact the ability to provide for others and create opportunities for the next generation in a community.

This section highlights some of the economic competitiveness trends in the region related to walking, biking, and transit, and how demographic and economic trends are increasingly prioritizing walkable, bikable, and transit-serviced places as a means to economic opportunity.

Real Estate Investment and Economic Performance

Trends in real estate development in the Atlanta region reflect broader national demographic shifts and shifting housing preferences within two large cohorts: Millenials (ages 18-36) and Baby Boomers (ages 50-68). As Millenials enter the workforce in larger numbers and Baby Boomers retire, demand for housing in walkable areas near urban amenities is expected to continue to increase.[1]

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[1] *Urban Land Institute. (2015). America in 2015: A ULI survey of view on housing, transportation, and community. Retrieved from: http://uli.org/research/centers-initiatives/terwilliger-center-for-housing/research/community-survey/*

WalkUPs

The Atlanta Regional Commission and George Washington University School of Business published The *2013 WalkUP Wake-Up Call: Atlanta*, which defines WalkUPs, or walkable urban places, as areas with higher development densities, mixed land uses, integrated real estate products, multiple transportation options including rail and bus transit, biking, and highways, and a place where every destination is walkable.

46 WalkUPs were identified and divided into three categories: Established WalkUps, Emerging WalkUPs, and Potential WalkUPs. The WalkUps were also classified by type:

- Downtown – Examples include GSU-Government Center and Peachtree Center
- Downtown Adjacent – Examples include Castleberry Hill and Midtown
- Urban Commercial – Examples include Arts Center and Inman Park
- Urban University – Examples include Atlanta University Center, Emory, and Georgia Tech
- Suburban Town Center – Examples include Downtown Decatur and Downtown Marietta
- Drivable Sub-Urban Commercial Redevelopment – Examples include Buckhead and Cumberland Core
- Greenfield and Brownfield – Examples include Atlantic Station

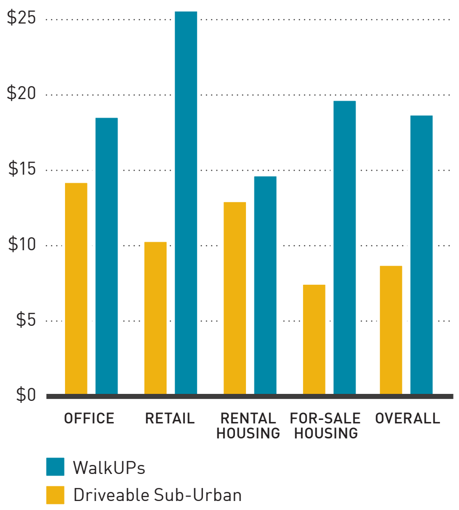
The study found that two factors explain 70% of the variation in economic performance among the 24 metro WalkUPs. The first factor is educational attainment and the second is share of jobs concentrated in knowledge industries.

The research found that there are relationships between development patterns, real estate investment, and economic performance, and that real estate development in the Atlanta region is undergoing a fundamental shift away from low-density greenfield development. Walkable urban projects now make up the majority of real estate development in the Atlanta region. Among the relevant findings:

- Established WalkUPs account for just 0.55% of total land in the metro area but contain 19% of all jobs.
- Average rent for all development types in current WalkUPs is 112 percent higher than in drivable suburban areas.
- 60% of established WalkUPs are served by rail transit.
- Multifamily rental housing was the most significant driver of real estate growth in regionally significant WalkUPs, which is consistent with national trends. In the 1990s, less than 9% of income-producing real estate captured by Established WalkUPs was multifamily rental housing. In the early 2000s, this rose to 28% and has skyrocketed to 88% in this real estate cycle.
- 74% of Established WalkUPs in the region are within the city of Atlanta. However, all nine Emerging WalkUPs are in the suburbs and eight of the ten Potential WalkUPs are outside of the city.
- Stronger economic performance by metro Atlanta WalkUPs was associated with lower measures of social equity.

WALKUPS VS. DRIVABLE SUB-URBAN

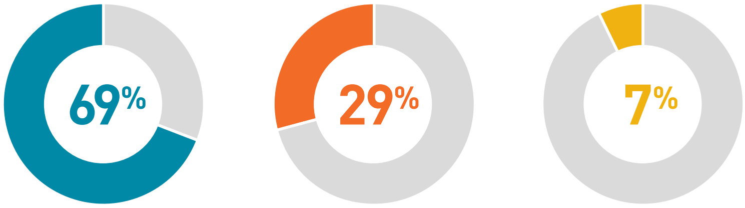
Comparing Average Rents per Sq.Ft.



Source: The WalkUP Wake Up Call: Atlanta Regional Commission

DESIGNATED LCI AREAS MAKE UP ONLY 4% OF THE REGION'S LAND AREA,

BUT ACCOUNT FOR



OFFICE DEVELOPMENT
2000-2014 (sq ft)

COMMERCIAL DEVELOPMENT
2000-2014 (sq ft)

RESIDENTIAL DEVELOPMENT
2000-2014 (units)

IN THE ATLANTA REGION

Source: Atlanta Regional Commission Livable Initiative 2015 Report

Students walk to shops near Duluth Town Green, a mixed use town center created as a result of an LCI planning study.

Livable Centers Initiative

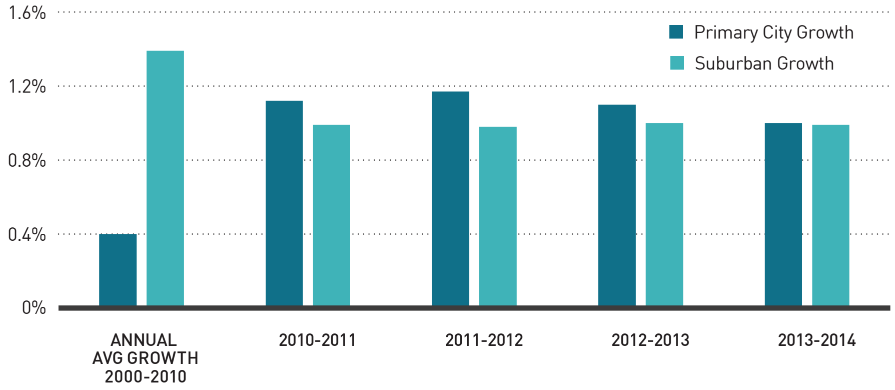
The Livable Centers Initiatives is a program developed by the Atlanta Regional Commission to tie land use and development decisions to transportation infrastructure investments. Since 1999, LCI has assisted 112 communities with more than $194 million in planning and implementation grants to devise strategies that reduce traffic congestion and improve air quality by better connecting homes, shops, and offices.

The program has been successful at generating re-investment in established activity centers and corridors in the Atlanta region and creating new town centers in growing communities outside of the region's core. The designated LCI areas account for 4% of the land area, yet account for 69% of the office development, 29% of the commercial development, and 7% of the residential development. LCI areas, which encompass the most walkable, bikable, and transit-service areas of the region, account for a significant amount of development and economic activity in the region.

Business Location

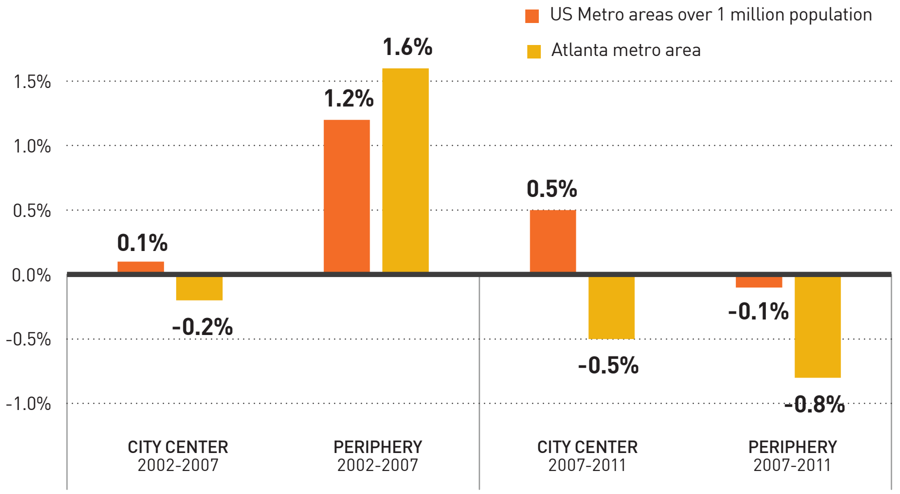
With workers and businesses increasingly prioritizing quality of life and access to transit, many companies are relocating to denser, more walkable, and better served transit activity centers. The trend is highlighted by growth in both city populations and jobs.

CITY AND SUBURBAN GROWTH
FOR US METROPOLITAN AREAS OVER 1 MILLION POPULATION



Source: Brookings Institute

CORE AND PERIPHERY JOB GROWTH 2002-2007 AND 2007-2011
FOR US METROPOLITAN AREAS OVER 1 MILLION POPULATION



Source: Cortwright, J. (2015) Surging City Center Job Growth. City Observatory.

Population Growth

The Atlanta region added about 1 million new residents from 2000 to 2010, which represents an average annual growth rate of 2.1%.[1] The majority of this growth occurred in suburban areas. Since 2010, however, population growth within three miles of downtown Atlanta, and in US central cities overall, has been stronger than in suburban and exurban areas.[2] This marks a sharp reversal in the decades-long national trend of suburban population growth and central city population decline.

Job Growth

As more people have moved from the suburbs to cities, employers have responded by locating closer to workers. From 2002-2007, the majority of both population and job growth in the largest metro regions occurred outside a three-mile radius of downtown cores. From 2007-2011, however, the trend flipped. During the recession and initial recovery, there was less job growth overall, but the growth that did occur happened primarily in city centers.

The Atlanta region followed a similar trend with the city center lagging behind periphery job growth from 2002-2007. Employment in both the center and periphery declined between 2007 and 2011; however, the rate of decline was higher in periphery areas. [3]

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[1] *The Atlanta Regional Commission. (2013). Plan 2040.*

[2] *Frey, W. (2015, May 21). New Census Data: Selective city slowdowns and the city-suburb growth gap. [Web log post] The Avenue: Rethinking Metropolitan America, A Brookings Institute Blog. Retrieved from: http://www.brookings.edu/blogs/the-avenue/posts/2015/05/21-new-census-data-city-slowdowns-city-suburb-growth-gap-frey*

[3] *Cortwright, J. (2015) Surging City Center Job Growth. City Observatory. Retrieved from: http://cityobservatory.org/wp-content/uploads/2015/02/Surging-City-Center-Jobs.pdf*

“This [TOD] project will provide State Farm’s work force a continued platform for success with direct access to a true live-work-play environment and a MARTA station.”

“When Kaiser Permanente was looking for a site for its new innovation and information technology hub for 900 new employees, the company sought public transit and a walkable community.”

Business Testimonials

Between 2010 and 2015, hundreds of US companies moved from auto-oriented suburban campuses to walkable, bikeable, mixed-use locations well served by transit.[1] A recent study looked at the motivations behind these relocation decisions, and found that employers valued locations that were easily accessible by a range of transportation options. Companies across the country reported that locating in vibrant urban neighborhoods, where people want to both live and work, helped them attract educated workers.

In Atlanta, several large corporations have recently moved to mixed-use transit-served places that facilitate walking and bicycling. Following are some testimonials from corporations in the Atlanta region.

STATE FARM

“This [TOD] project will provide State Farm’s work force a continued platform for success with direct access to a true live-work-play environment and a MARTA station.” [2]

MERCEDES-BENZ

“We’re living in an environment where it’s all about talent,” Cannon said. “Offering the best quality of life attracts the best talent.”[3]

Talent — and access to mass transit — also drove Mercedes’ site selection in Atlanta. The Central Perimeter offers an appealing balance of suburban and urban living environments, located in between the family-friendly northern suburbs and the Millennial-rich in-town neighborhoods.”Folks concerned with houses and schools can locate north and commute south,” Cannon said. “The Gen-Yers who want that urban living... can take a short MARTA ride (to work).”

KAISER PERMANENTE

“It was important to have a great location with an ability to walk to restaurants and shops and a location that was close to public transportation.”

“When Kaiser Permanente was looking for a site for its new innovation and information technology hub for 900 new employees, the company sought public transit and a walkable community.” [4]

ATHENA HEALTH

“Our people are our most precious resource. Selecting strategic sites in key urban markets across the country opens up possibilities and helps us attract exciting new talent and resources.”[5]

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[1] *Smart Growth America and Cushman & Wakefield. (2015). Core Values: Why American Companies are Moving Downtown. Retrieved at: http://www.smartgrowthamerica.org/documents/core-values.pdf*

[2] *http://www.bizjournals.com/atlanta/real_talk/2014/02/state-farm-kdc-announce-massive.html?page=all*

[3] *http://www.bizjournals.com/atlanta/news/2015/01/06/mercedes-benz-to-invest-100m-in-atlanta.html*

[4] *http://www.bizjournals.com/atlanta/news/2015/04/17/transit-walkability-key-factors-in-kaiser.html*

[5] *Source: http://www.reuters.com/article/2014/09/22/idUSnGNX5kYdq+e4+GNW2014092*

Universities

Universities play a significant role in the regional economy. They are also tend to have a student and faculty population that is more inclined to walk, bike, and take transit. Some of the direct economic benefits of universities include:

- Direct spending by students, staff, and faculty.
- Higher wages associated with educational attainment.
- Science and technology research conducted at universities results in innovation, which is particularly important with knowledge economies.
- Universities have walking and biking commute rates that are higher than city and regional averages.

The Atlanta region is home to 48 accredited degree-granting colleges and universities serving over 176,000 students. Some of the largest colleges and universities include Georgia State University, Kennesaw State University, the Georgia Institute of Technology, Emory University, Clark Atlanta University, Morehouse College, and Spellman College.

AMONG THE 50 LARGEST METRO REGIONS IN THE COUNTRY, RESEARCHERS FOUND THAT THE **ATLANTA REGION RANKS 49TH IN UPWARD MOBILITY,** MEASURED BY THE AVERAGE INCOMES OF PEOPLE BORN TO PARENTS EARNING LESS THAN THE AREA'S MEDIAN INCOME. **PLACES WITH HIGHER SOCIAL MOBILITY HAVE LESS RESIDENTIAL SEGREGATION, LESS INCOME INEQUALITY, BETTER PRIMARY SCHOOLS, GREATER SOCIAL CAPITAL, AND GREATER FAMILY STABILITY.**

These institutions provide a boost to the region's economy and also increase demand for high-quality, connected walking and bicycling infrastructure. Universities tend to have higher than average rates of walking and bicycling than other destinations, due in part to space constraints on campus that make car ownership and parking expensive. The municipality in the Atlanta region with the highest walking commute mode share is Oxford, home to Oxford College.

Many area universities also run Transportation Demand Management (TDM) programs designed to encourage people to take transit, walk, or bike to campus. Examples of such programs include bike share programs, discounted Georgia Regional Transportation Authority (GRTA) bus passes, and free shuttle service around campus and to popular student destinations, such as the Georgia Tech and Emory shuttles.

Social Mobility, Commute Times, and the Economy

Social mobility is defined by the ability of individuals and families to move out of poverty. Job access and commute times play important roles in determining the level of social mobility, which in turn has an impact on income inequality and the strength and stability of the economy.[1]

Two recent studies from Harvard University's Equality of Opportunity Project highlight the facts that the Atlanta region faces serious challenges with regard to social mobility, and that low social mobility is linked to transportation and land use patterns. Among the 50 largest metro regions in the country, researchers found that the Atlanta region ranks 49th in upward mobility, measured by the average incomes of people born to parents earning less than the area's median income.[2] Places with higher social mobility have less residential segregation, less income inequality, better primary schools, greater social capital, and greater family stability.

In a separate but related study, researchers found that the effect of commuting time on social mobility was stronger than any other factor, including school quality, income inequality, segregation, rates of two-parent households, and crime rates.[3] The impact of transportation on the ability of low-income families to escape poverty was most striking in areas with high degrees of segregation, income inequality, and sprawl, such as the Atlanta region. The authors point out that the strength of the commute-time effect is unlikely to be only the direct result of poor access to jobs. Instead, the relationship is more likely to be the result

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[1] *Boushey, H. & Price, C. (2014) How are Economic Inequality an Growth Connected? A review of recent research. Washington Center for Equitable Growth.*

[2] *Chetty et. al. (2014). Where is the Land of Opportunity? The Geography of Intergenerational Mobility in the United States. Harvard University Equality of Opportunity Project. Retrieved from: http://www.equality-of-opportunity.org/index.php/papers on June 20, 2015.*

[3] *Chetty, R. & Hendren, N. (2015). The Impacts of Neighborhoods on Intergenerational Mobility:*

Childhood Exposure Effects and County-Level Estimates. Harvard University Equality of Opportunity Project. . Retrieved from: http://www.equality-of-opportunity.org/index.php/papers on June 20, 2015.

of some characteristic(s) of the place that is highly correlated with long commute times.

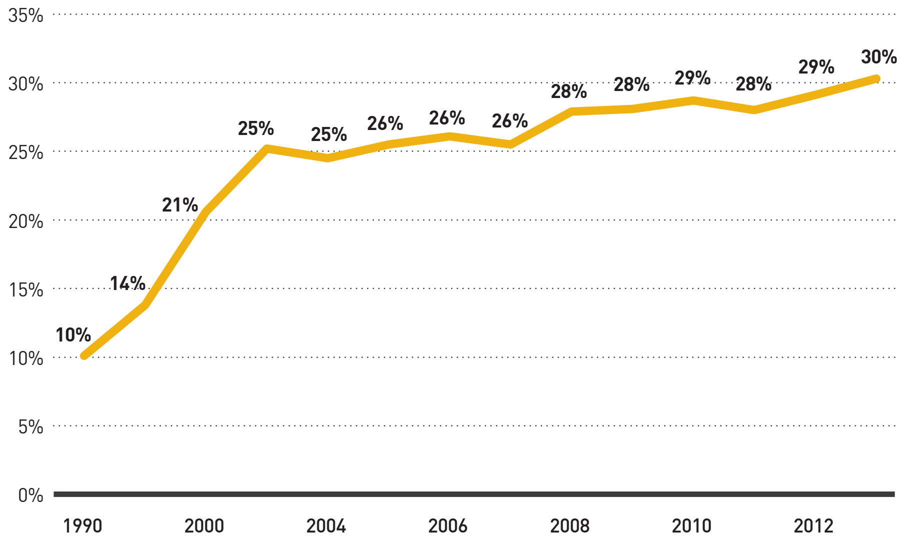
Low-income households are also increasingly located in suburban, auto-oriented parts of the region that are not well served by transit and where walking and bicycling may not perceived as safe or convenient options.[1] This leads to some families spending up to 37% of their income on transportation to access employment opportunities and meet daily needs.[2] Making lower-cost forms of transportation such as walking, bicycling, and transit available and attractive to low-income people can reduce the overall cost of transportation and contribute to social mobility. In the long run, increased social mobility is likely to lead to a more prosperous and economically competitive region.

Public Health

How people travel impacts their level of physical activity and their personal health. According to the CDC, 4 out of 5 adults and 7 out of 10 high school students in the US do not get their recommended weekly physical activity. Physical activity can help with weight control and also lower the risk for heart disease, stroke, type 2 diabetes, depression, and some cancers.

Additionally, obesity-related conditions are some of the leading causes of preventable death. In the US, more than one third of adults are obese and it is estimated that the medical costs for people who are obese are $1,429 higher than those of normal weight.

ADULT OBESITY RATE IN GEORGIA
1990 – 2013



Source: Trust for America's Health and Robert Wood Johnson Foundation. The State of Obesity 2014 [PDF]. Washington, D.C.: 2014.

As of 2013, Georgia has the 18th highest obesity rate in the country overall and the 17th highest obesity rate in the country for children between the ages of 10-17 years of age according to *The State of Obesity: Better Policies for a Healthier America*, which is a report published annually by the Robert Wood Johnson Foundation and the Trust for America's Health.

These trends have significant impacts on personal health, economic development, and quality of life. Obesity increases healthcare costs and negatively impacts daily life. Conversely, providing opportunities to integrate physical activity into daily life can help reverse these trends. Investing in walking and biking infrastructure and programs for transportation and recreation is a key way that ARC can have a positive impact.

In 2012, the Center for Quality Growth and the Atlanta Regional Commission conducted a Health Impact Assessment (HIA) of the Atlanta Regional Commission's Plan 2040. HIAs are a tool and method of analysis to identify the health impacts of public policy and decision-making. The HIA for Plan 2040 found that a shift in transportation would likely generate "improvements in safety, access and equity, economic stability, physical activity, environmental quality, and civic and social participation."

Two important topics related to health and transportation include Health Risk and Physical Activity Risk. The HIA mapped both of these factors and found that health impacts are not evenly distributed in the region. The maps on the following pages illustrate the geographic variation in health and physical activity risks in the Atlanta region.

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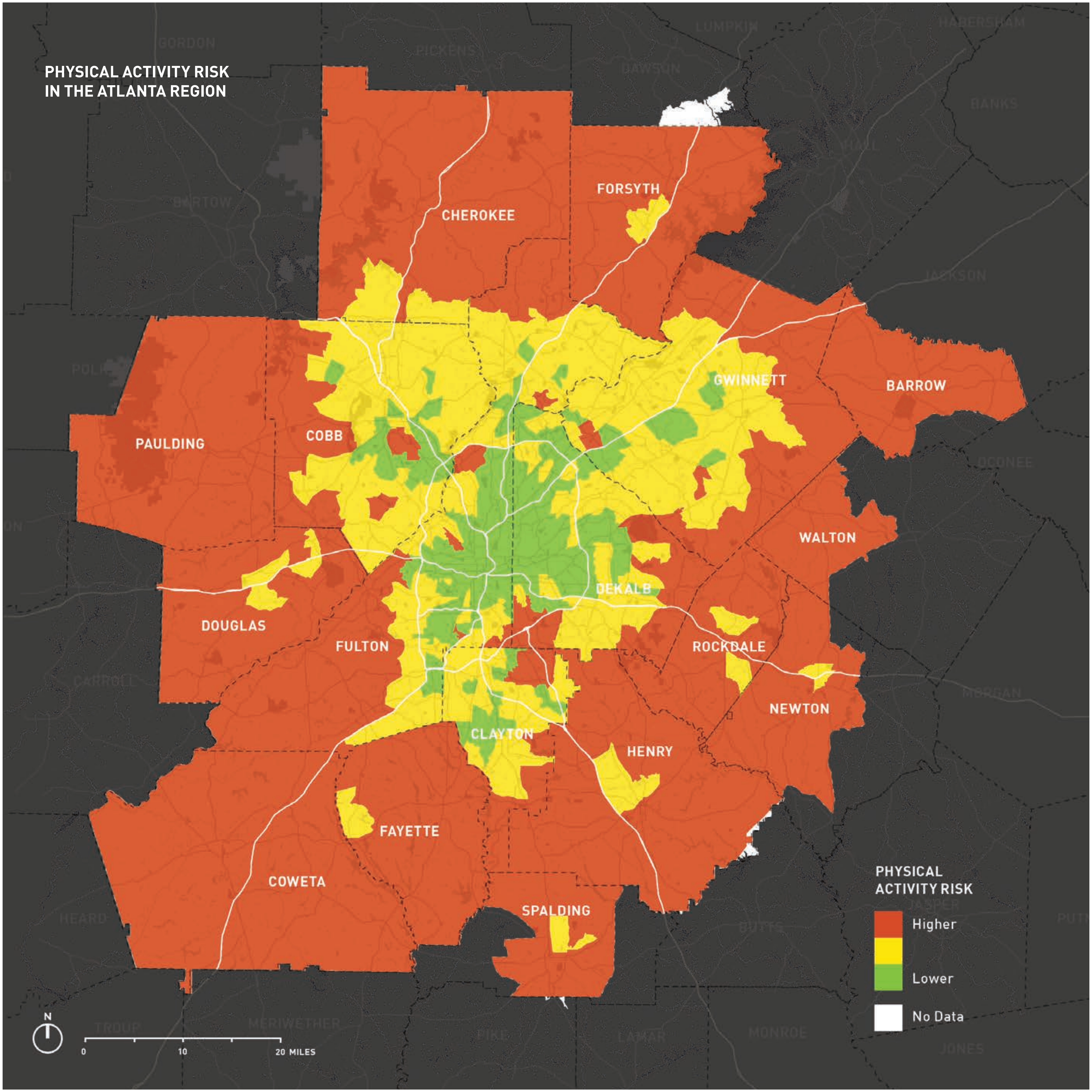
[1] *The Atlanta Regional Commission. (2015, January 12). Suburbanization of Poverty in Metro Atlanta: An Update. Retrieved at: http://news.atlantaregional.com/?p=1915*

[2] *The Center for Neighborhood Technology. Housing and Transportation (H+T) Affordability Index. Accessed at: http://www.cnt.org/tools/housing-and-transportation-affordability-index*


PHYSICAL ACTIVITY RISK
IN THE ATLANTA REGION
GORDON
PICKENS
LUMPKIN
DAWSON
HABERSHAM
BANKS
HALL
BARTOW
POLK
JACKSON
OCONEE
CARROLL
MORGAN
HEARD
JASPER
BUTTS
TROUP
MERIWETHER
PIKE
LAMAR
MONROE
JONES
FORSYTH
CHEROKEE
GWINNETT
BARROW
PAULDING
COBB
WALTON
DEKALB
DOUGLAS
FULTON
ROCKDALE
NEWTON
CLAYTON
HENRY
FAYETTE
COWETA
SPALDING
PHYSICAL ACTIVITY RISK
Higher
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No Data
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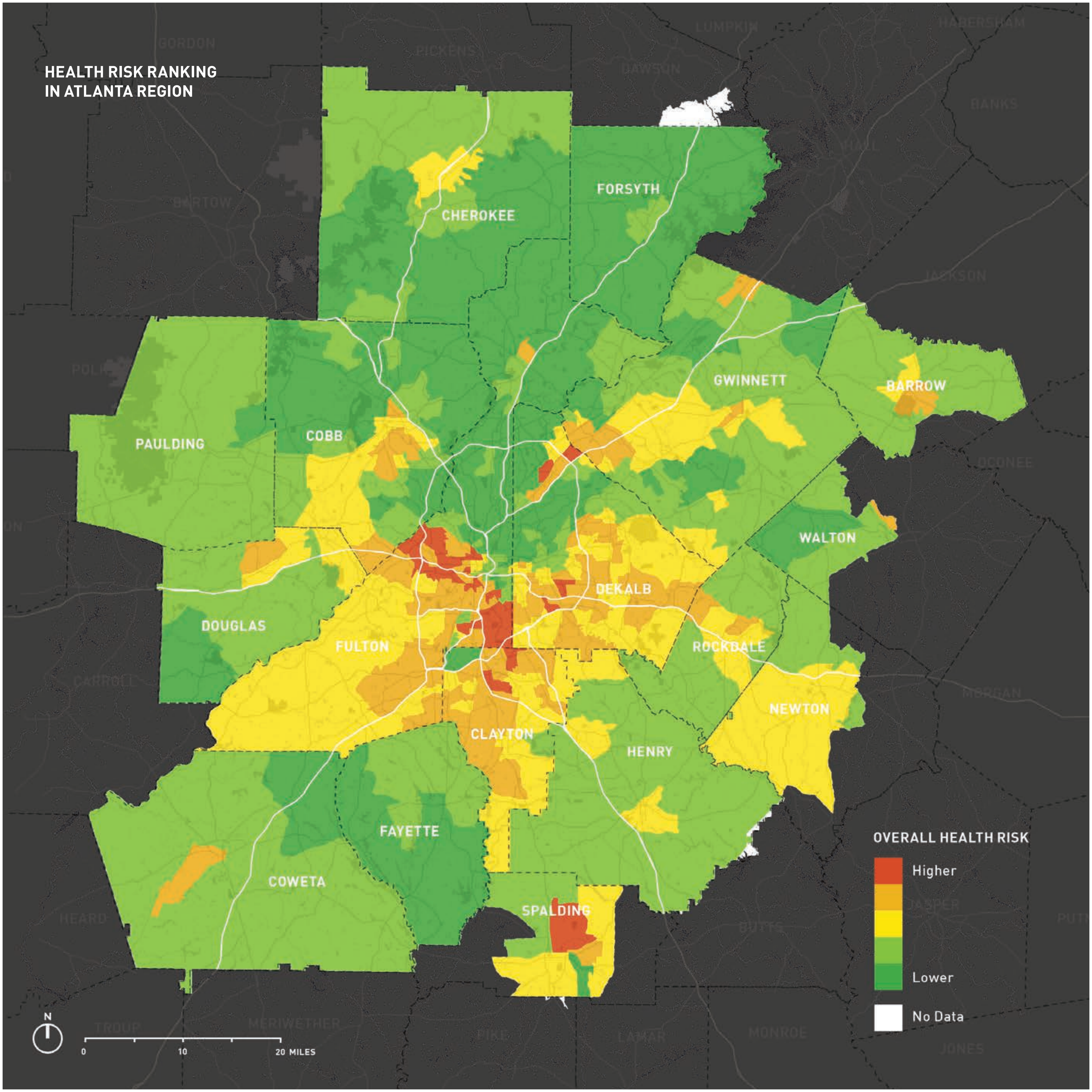
20 MILES



HEALTH RISK RANKING IN ATLANTA REGION

Health Risk in the Region

For health risk in the region, the HIA scored the region using an index measuring a variety of social, economic, and demographic factors. The factors include the proportion of residents or households:

- Under age 18
- Over age 65
- Headed by a single female
- Color or ethnic identity
- Less than a high-school degree (or equivalent) after age 25
- Unemployed
- Employed in a blue collar job
- Below the federal poverty level

The results indicate that overall health risk is higher in the southern portion of the region. The highest overall health risk occurs in selected parts of Fulton, Dekalb, Clayton, and Spalding Counties.

Physical Activity Risk in the Region

The HIA also estimated areas of the region at risk for low rates of physical activity using the following metrics:

- Share of commuters who carpool or drive alone
- Travel time to work
- Population density
- Rates of heart disease, stroke, and diabetes

This analysis found that the highest risk for activity-related chronic disease was in outlying and suburban counties (with the exception of some inner-ring northern suburbs). The lowest physical activity risk was found in central city areas, especially northeast Atlanta.

BY 2030, 1 OUT OF EVERY 5 RESIDENTS

WILL BE

OVER THE AGE OF 60

Lifelong Communities and Aging in Place

The Atlanta region is experiencing an unprecedented demographic shift. By 2030, 1 out of every 5 residents will be over the age of 60. This change includes not only a dramatic growth in the number of older adults who call Atlanta home, but also the relatively new phenomenon of longevity—people living longer than ever before.

The Atlanta Regional Commission has developed a program called Lifelong Communities focused on meeting the needs of a growing and aging demographic. By focusing on topics such as transportation, affordable housing, access to health care services, and other opportunities for public life, the region is working towards developing communities that allow individuals to have a high quality of life throughout their lifetime.

Tourism

Those who live and work in the region are not the only ones that walk, bike, and take transit in the region. Visitors for business, pleasure, or other reasons often arrive in the region without a car and find themselves walking, biking, or taking transit for at least a portion of their trips.

By the numbers, tourism and conventions draw over 42 million annual visitors to the region, supporting a $12 billion hospitality industry that employs over 230,000 people in Metro Atlanta. Enhancing access to transit and alternative travel options can enhance the experience of visiting Atlanta while reducing traffic congestion for those that live in the region.

Innovation in Transportation Mobility

The proliferation of new transportation services built on mobile computing applications such as car sharing, bike share, and ridesharing are changing the way people think about mobility. These services promote more flexibility in multi-modal trip chaining, reduce the need for car ownership, and contribute to increasing demand for a more balanced transportation system. In addition to national companies such as Zipcar and Uber, smartphone applications such as CycleAtlanta and One Bus Away mobile apps or the soon-to-be-launched bike share system in the City of Atlanta are examples of local innovations that are challenging the idea that car ownership is an essential component of living in the Atlanta region.

Public spaces and outside seating provide places for people to socialize, linger, and interact.

Quality of Life, Art, and Placemaking

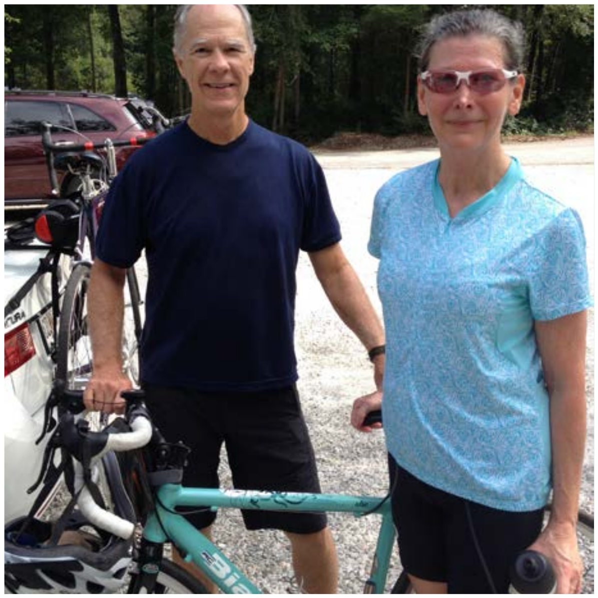
Since 2012, the Atlanta Regional Commission has continued the work of the Metro Atlanta Art and Culture Coalition (MAACC). As part of ARC's effort to nurture the relationships between art and economy, ARC developed the Arts and Culture Report. The most recent report in 2015 identified six initiatives key to fostering the arts and cultural community:

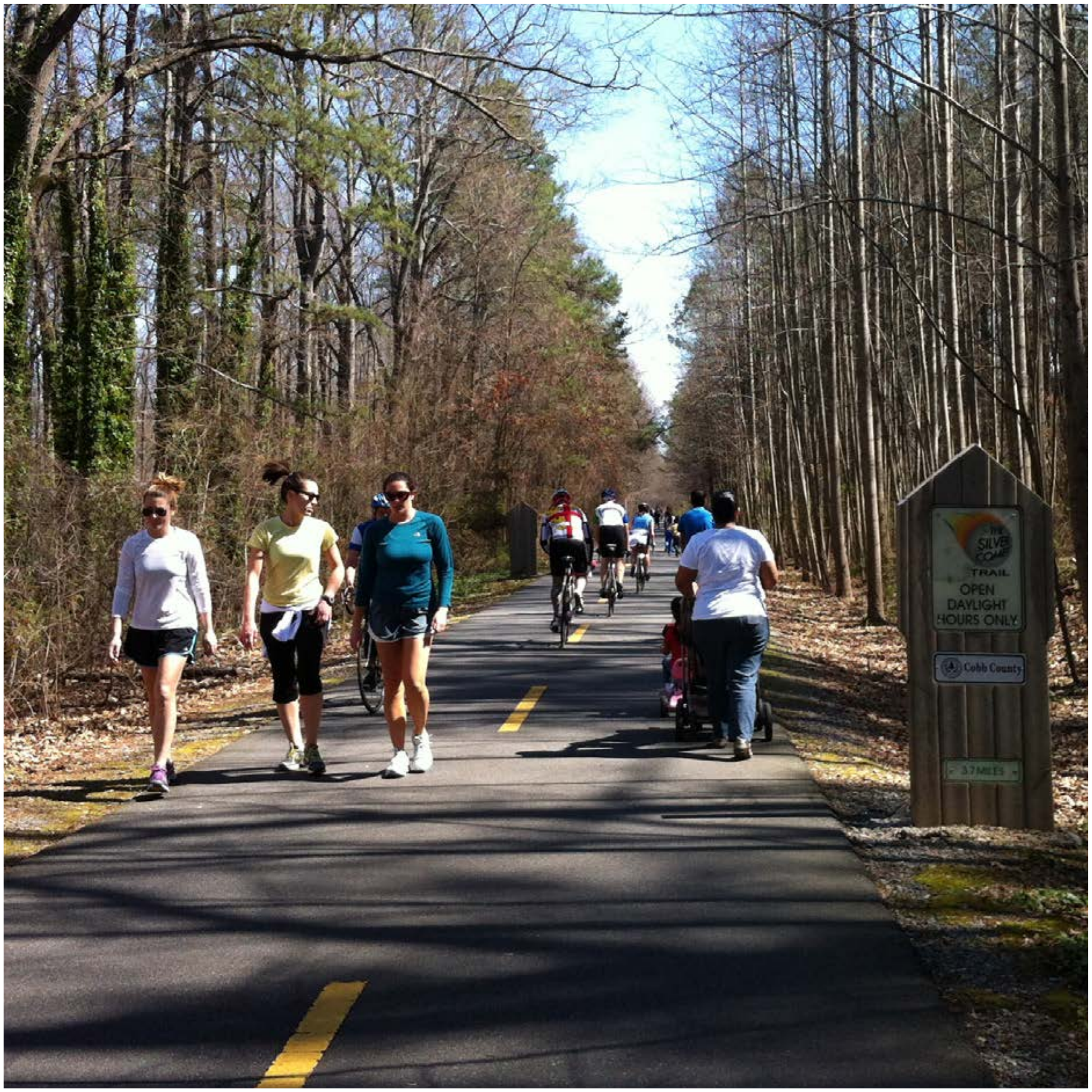
- Building participation
- Fostering innovation
- Creating a sustainable workforce
- Supporting and developing leadership
- Visualizing data
- Placemaking

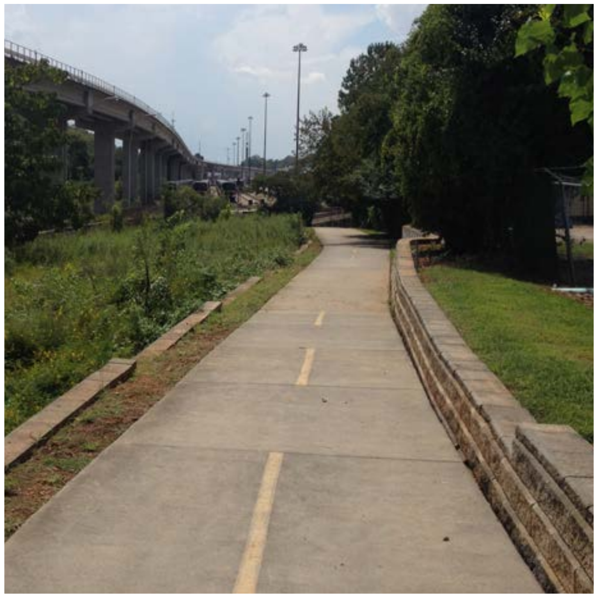
The report also found that successful placemaking attracts people to a place by providing them with a sense of community and belonging. Inevitably, when people are in a place, they engage in its economy.

The Atlanta region competes with other metropolitan areas in the Southeast and throughout the country for educated workers that value the amenities of urban living. Institutions like museums and concert halls provide anchors for arts and culture, but bringing art into the public spaces of the city can help activate and energize the pedestrian environment. Murals created by Living Walls in Atlanta and the annual Art on the Beltline exhibit are examples of successful public art installations that add visual interest, contribute to a sense of place, and promote healthy activity.

Public plazas, gathering spaces, and outdoor events are also essential components of a successful urban environment that fosters walkability and social interaction. Farmers markets, food trucks, and neighborhood festivals are popular throughout the region. These temporary and informal installations bring life to public spaces, attract pedestrian activity, and create connections between people and places.




THE SILVER COMET TRAIL
OPEN DAYLIGHT HOURS ONLY
Cobb County
3.7 MILES



Mr.PiBB

REGIONAL TRAIL ASSESSMENT

Trails provide opportunities for people of all ages and abilities to walk and bike in a comfortable off-street environment. In addition to expanding active transportation options and recreational opportunities, trails can generate economic benefits, enhance sense of place, and help connect people to nature.

For the purposes of this assessment, a trail is defined as a paved path that is physically separated from high-speed motor vehicle traffic by open space or a landscaped buffer. This includes paths parallel to roadways (sometimes called "sidepaths") and paths within an independent right-of-way (sometimes called "greenways"). Trails can accommodate a range of users in addition to people walking and bicycling, including runners, skaters, equestrians, and even low-speed electric vehicles.

The Atlanta Regional Commission, along with many cities and counties in the region, have made significant investments in trails over the past two decades. The PATH Foundation, an Atlanta-based non-profit organization, has also been collaborating with multiple jurisdictions to steadily increase trail mileage in the region and is working to connect many of the trails they have helped fund, which include the Silver Comet Trail, the Stone Mountain Trail, and Arabia Mountain Trail, among others. The Georgia Department of Transportation (GDOT) has also been an active partner in regional trail development, most recently with the Path400 project.

The sections that follow describe the current network of trails in the region as well as identify areas of need and opportunity for trail network expansion and gap closure.

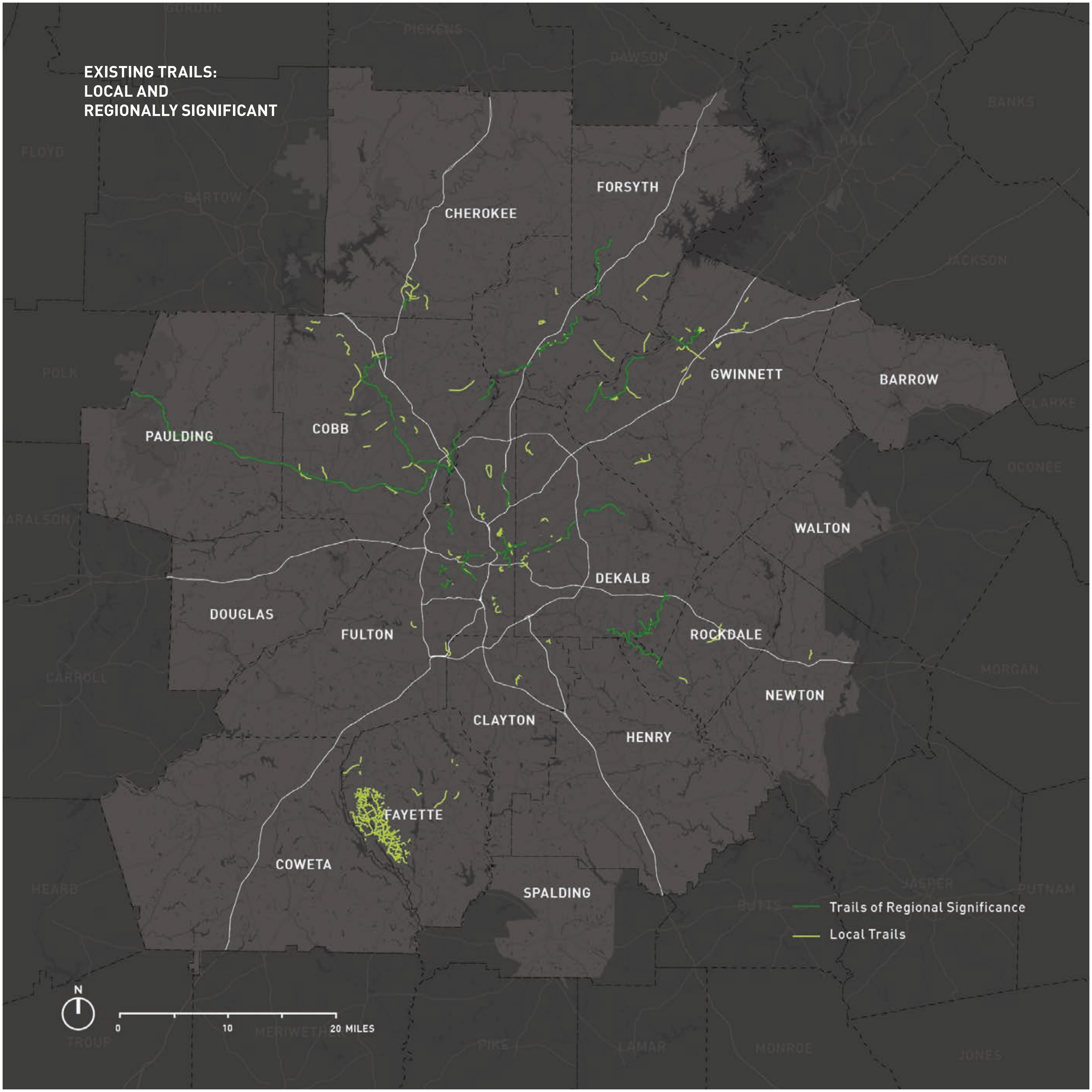
Local Trails vs. Trails of Regional Significance

For the purposes of this plan, trails in the Atlanta region can be classified as local trails or trails of regional significance. Local trails facilitate short recreational or utilitarian trips within and between neighborhoods, and are primarily used by people that live or work within a few miles. Peachtree City's shared use path system is an example of a mature trail network that effectively serves local destinations.

Trails of regional significance, by contrast:

- May cross jurisdictional boundaries to connect cities, regional activity centers, parks, and other trails
- Can be a destination in their own right such as the scenic Arabia Mountain Trail or a heavily-traveled commuter corridor like the Atlanta Beltline
- Have the potential to be a key link connecting the regional trail network

EXISTING TRAILS: LOCAL AND REGIONALLY SIGNIFICANT



Currently, there are almost 400 miles of trails in the region. Local trails account for about 60% of the existing trails in the region. Conversely, trails of regional significance account for about 40% of the existing trails in the region.

The trails of regional significance could also form a regional hub-and-spoke type system that, when completed, will connect all four quadrants of the region to the core of the region. See the "Closing the Gaps in the Trails of Regional Significance" section of this chapter for more details on this effort to effectively create a "highway system" for active transportation in the region.

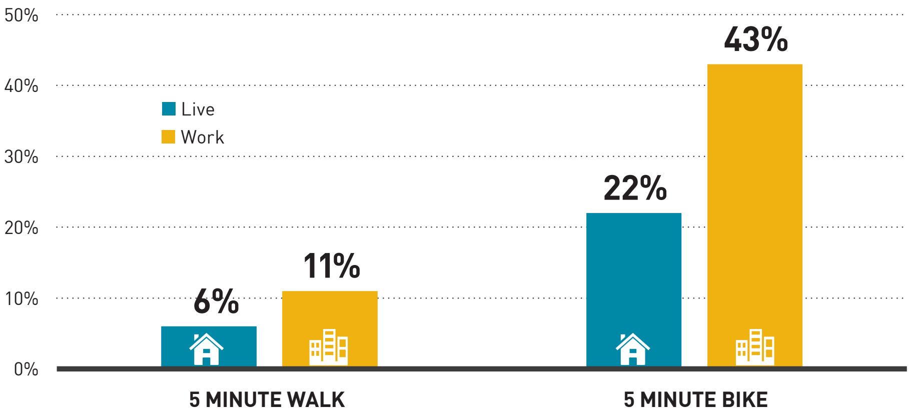
EXISTING TRAIL MILEAGE

	Miles	% of Total Trails
Local Trails*	245	61%
Trails of Regional Significance	153	39%
Total	**397**	**100%**

** Note: Includes 94 miles of multi-use paths shared with golf carts in Peachtree City*

Source: Atlanta Regional Commission

PROXIMTY TO TRAILS FROM HOME AND WORK



Source: Atlanta Regional Commission

Where are Trails in the Region?

Trails can be found in all four quadrants of the region, but the number of trails and their location are not evenly distributed. With the exception of Peachtree City's extensive local shared use path network and the Arabia Mountain/Rockdale River Trail, existing trails are disproportionately concentrated in the central and northern parts of the region. Additionally, Fulton, Dekalb, Cobb, Gwinnett, and Paulding Counties together contain nearly all of the region's trails of regional significance. Several counties, including Barrow, Coweta, Henry, Spalding, and Walton, do not contain any trails.

Proximity to Trails in the Region

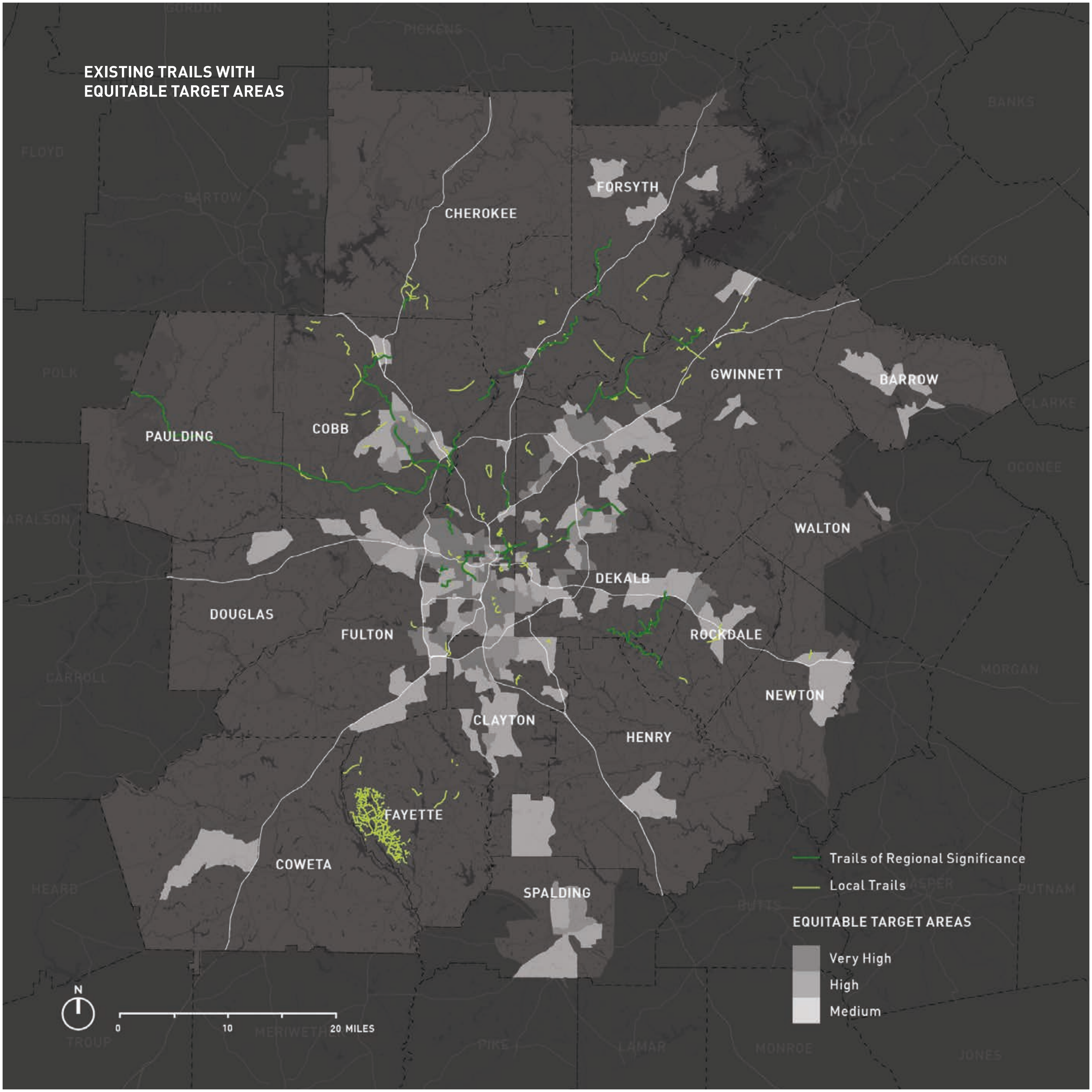
For many in the region, access to a trail requires a drive or longer-distance travel by walking, biking, or transit. Enhancing access to trails with walkways and bikeways can increase the likelihood someone can walk or bike to a trail for recreation or transportation. Additionally, expanding the trail network in the region will also increase opportunities to be physically active, socialize, and connect with nature or to daily destinations.

Currently, just 6% of the region's population lives within a five-minute walk of a trail. A five-minute bike ride nearly doubles the number of people that live close to a trail.

The variance is more dramatic relative to where people work. Currently, just over 1 in 10 workers in the region live within a five-minute walk of a trail in the region. A five-minute bike ride increases the number to just over 4 in 10 workers, or a four-fold increase.

Expanding local trail networks can improve access to trails for many residents and workers. They can also help connect where people live to jobs and activity centers, increasing opportunities to commute by walking, biking, or other active travel modes.

EXISTING TRAILS WITH EQUITABLE TARGET AREAS



Trail Access and Equity

Trails are not distributed evenly in the region, particularly for those that have a greater need for active transportation and recreation opportunities. The ARC has created Equitable Target Areas (ETAs) to identify areas in the region with greater social needs. ETAs are a geographic index based on age, educational attainment, median housing values, poverty rates, and race used to identify areas of concern.

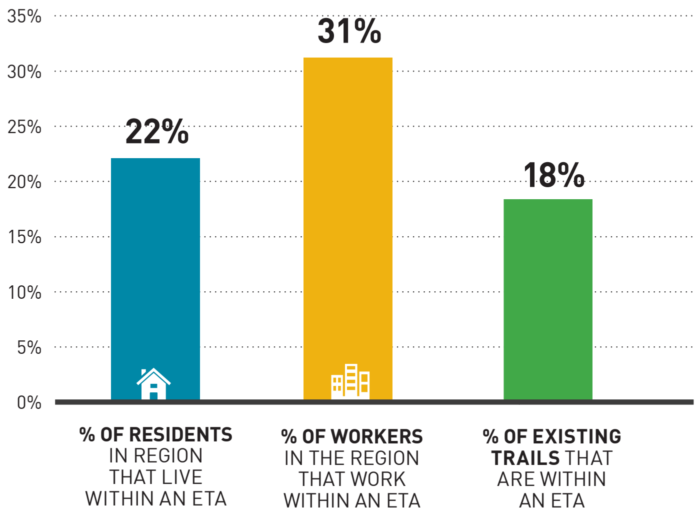
Currently, 22% of residents and 31% of workers in the region are within an ETA, yet 18% of existing trails are within an ETA. People living and working in ETAs have slightly lower access to trails relative to other areas of the region.

The ETAs and Existing Trail Map highlights the geographic distribution of trails relative to ETAs in the region. Notable clusters of ETAs whose residents lack convenient access to trails include:

- West and southeastern sections of the City of Atlanta
- Central and northern Clayton County
- Buford Highway corridor from Brookhaven to Norcross, including Chamblee, Doraville, and parts of unincorporated Dekalb and Gwinnett County
- Central and southern Spalding County

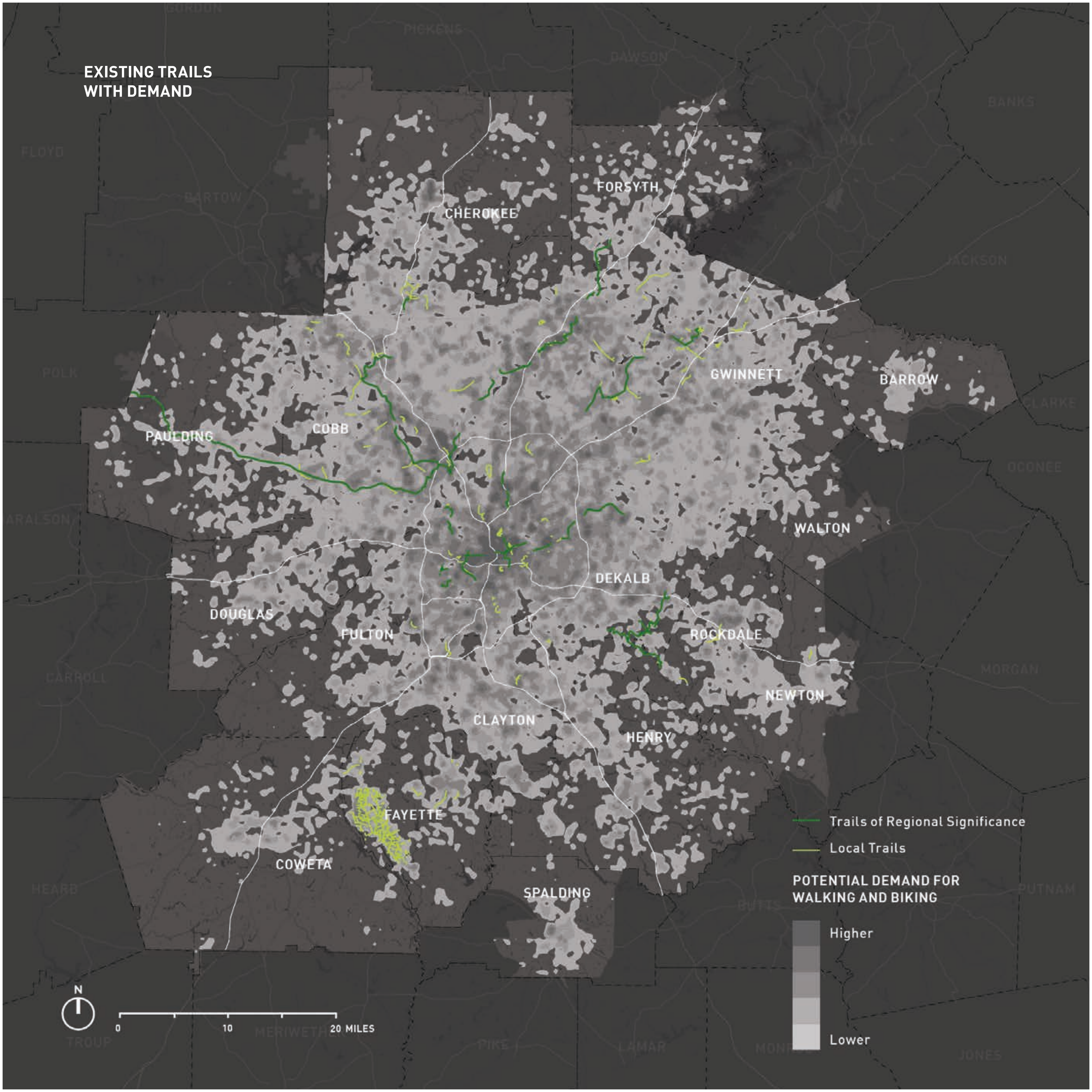
Expanding trail networks in ETAs can create more equitable opportunities to walk, bike, and be active for recreation and transportation in the region.

TRAIL ACCESS AND EQUITY



Source: Atlanta Regional Commission

Local trails, such as this Dillard Street Trail Connector to the Silver Comet Trail, can expand access to trails of regional significance in the region.



EXISTING TRAILS WITH DEMAND

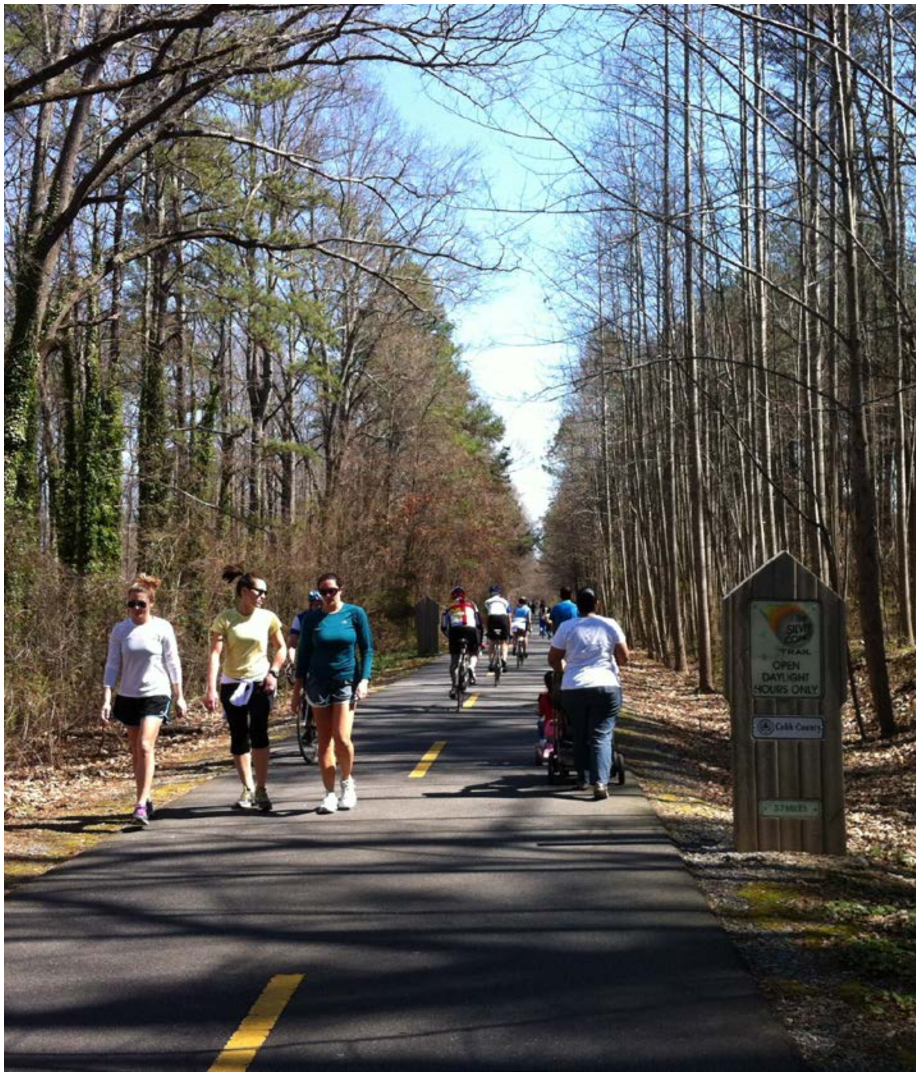
Demand for Trails

The project team estimated propensity for walking and biking based on a composite model described in more detail in the Mobility section of this report. This analysis resulted in a regional "heat map" that displays relative demand and propensity for walking and biking. When existing trails are overlaid with this demand layer, three key observations stand out.

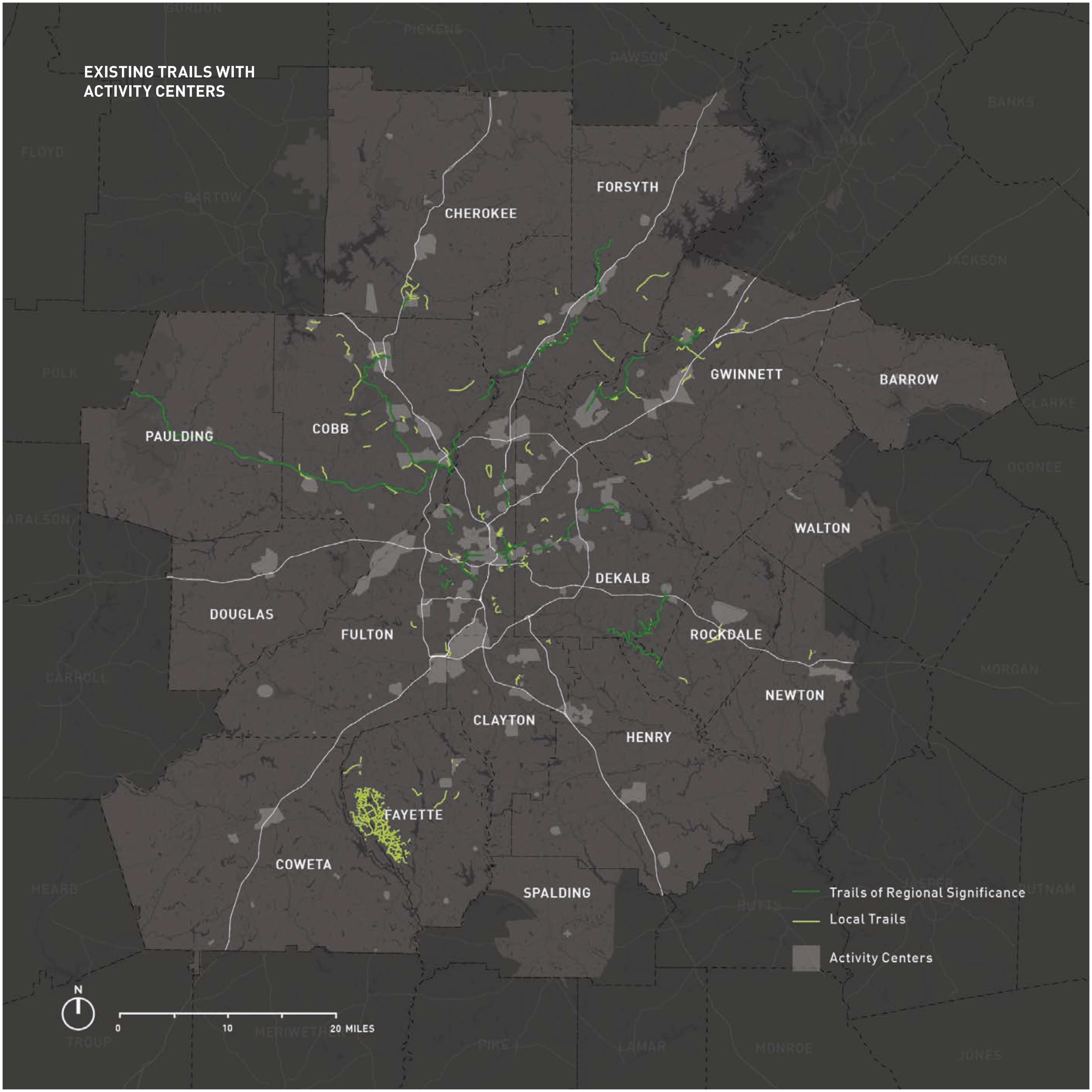
One, many of the existing trails in the region, particularly those north of Interstate 20, are located in areas that have the highest levels of demand for walking and biking infrastructure. This is a good thing, because it means these trails are more likely to be used for recreation as well as transportation.

Two, there are many areas with moderate to high demand for walking and bicycling that are not currently well-served by trails. Large swaths of Dekalb County stand out most clearly, along with portions of Clayton, Douglas, and Gwinnett Counties.

Three, the region's most remarkable and well-used trails – the Silver Comet and Arabia Mountain Trials – are not located in areas where overall demand for walking and bicycling is particularly high. This highlights the fact that scenic trails can be regional draws and destinations in their own right. They also highlight the value people place on being able to connect with nature and rural areas.



Trails provide an opportunity for all ages to exercise, connect with nature, and socialize.

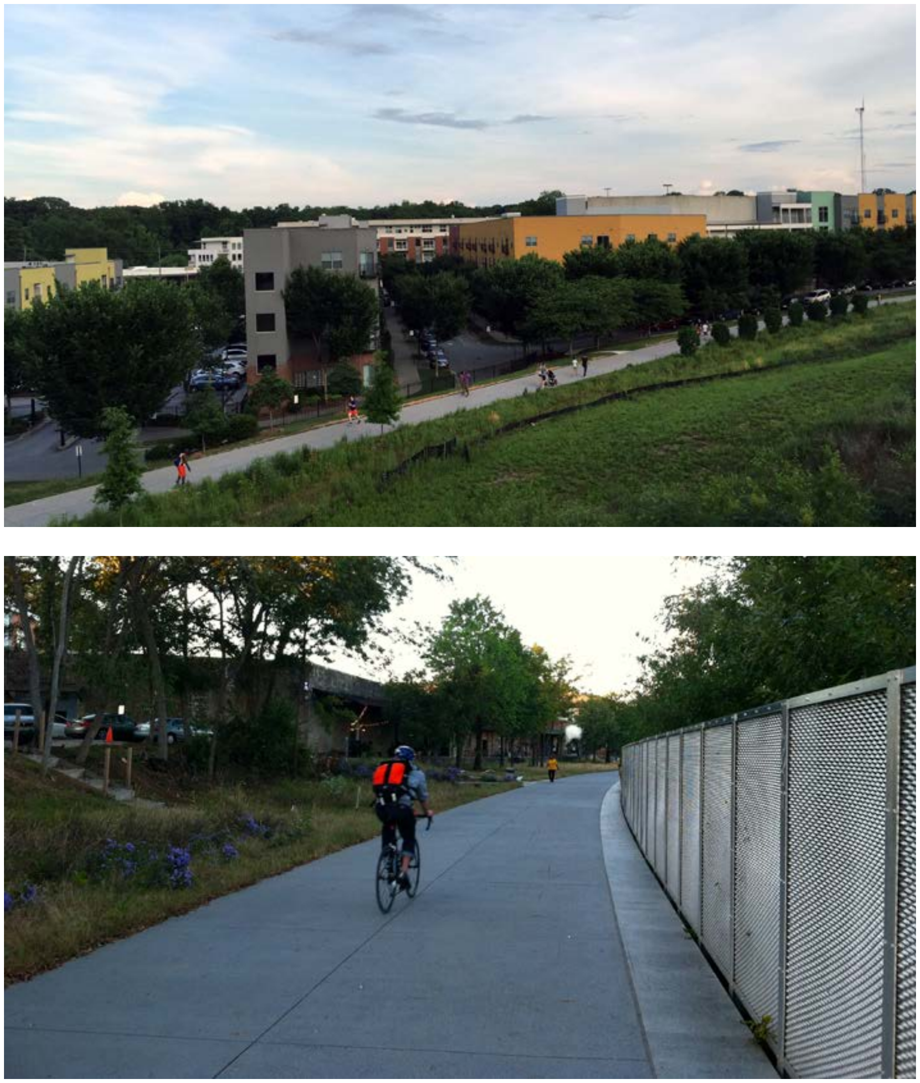


EXISTING TRAILS WITH ACTIVITY CENTERS

Trails and Activity Centers

There are many benefits of trails connecting to or within activity centers. Trails that connect to activity centers from surrounding neighborhoods provide an opportunity to access jobs and other daily destinations by walking or biking. Within activity centers, trails provide workers, visitors, and residents a place to visit, socialize, travel, and be active.

The existing trails and activity center map highlights some of the current connections and opportunities with trails. Some of the region's activity centers have trails within their boundaries, but many do not. In terms of connection to activity centers, many of the trails in the region connect to at least one, and sometimes more than one, activity center. As an example, the Stone Mountain Trail connects to several of the activity centers in Dekalb County. Expanding trails to and within activity centers in the region can increase the opportunity to walk and bike as part of daily life.

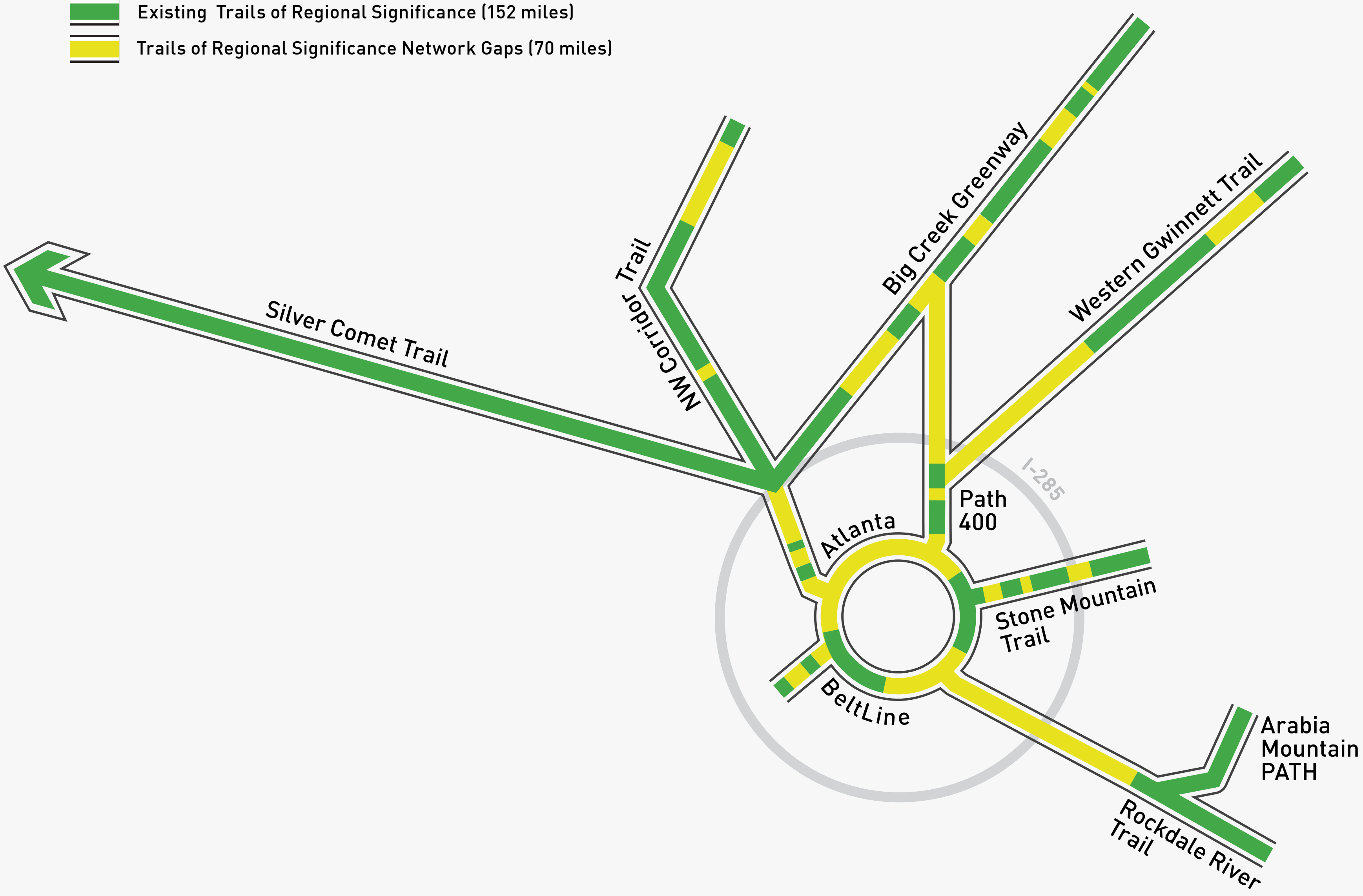


Trails can and do connect people to jobs and other destinations, such as along the Atlanta BeltLine Eastside Trail.

REGIONAL TRAIL GAPS

🟩 Existing Trails of Regional Significance (152 miles)

🟨 Trails of Regional Significance Network Gaps (70 miles)



This diagram is an analysis of gaps between existing Trails of Regional Significance. Please see the recommendations chapter for an analysis of network expansion opportunities.

The Stone Mountain Trail has long been a trail of regional significance, extending from Downtown Atlanta to Stone Mountain Park and connecting neighborhoods, natural areas, and several cities along the way.

Gaps in the Regional Trail Network

Despite considerable investment in selected parts of the region, existing trails do not yet form a complete and connected regional network. As mentioned earlier in this chapter, the trails of regional significance form a regional hub-and-spoke type of system that, when completed, will connect all four quadrants of the region to the core. When completed, this connected network of regionally significant trails will form a "walking and biking highway system" for active transportation.

An analysis of the gaps in the trails of regional significance network determined that filling about 70 miles of key gaps would create an approximately 225 mile connected regional trail network. Additionally, closing these key gaps would represent a 46% increase in the mileage for the network.

Many of these trails gaps are in various stages of planning, with the PATH Foundation leading and supporting many of the efforts to build and close these key regional gaps. Continued investment and coordination from public and private partners will help the region work towards closing these gaps and having a truly regional trail network.

BUILDING 70 MILES OF TRAILS
TO CLOSE KEY GAPS IN THE NETWORK OF REGIONALLY SIGNIFICANT TRAILS
WILL INCREASE
THE REGIONALLY SIGNIFICANT TRAIL NETWORK BY
46%

ATLANTA REGIONAL COMMISSION

40 COURTLAND STREET, NE | ATLANTA, GA 30303
404.463.3100
ATLANTAREGIONAL.COM

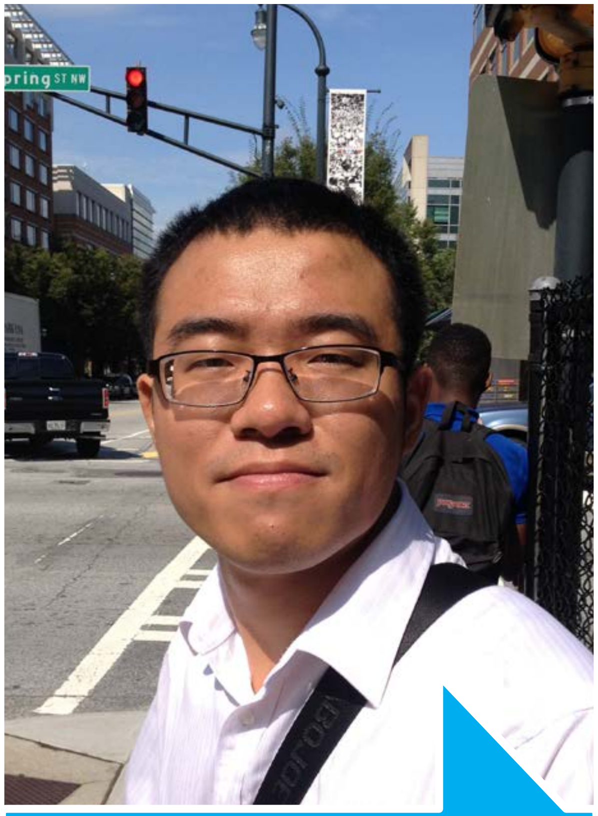
PART 3

PUBLIC PARTICIPATION AND PRIORITY TOPICS

WALK. BIKE. THRIVE!

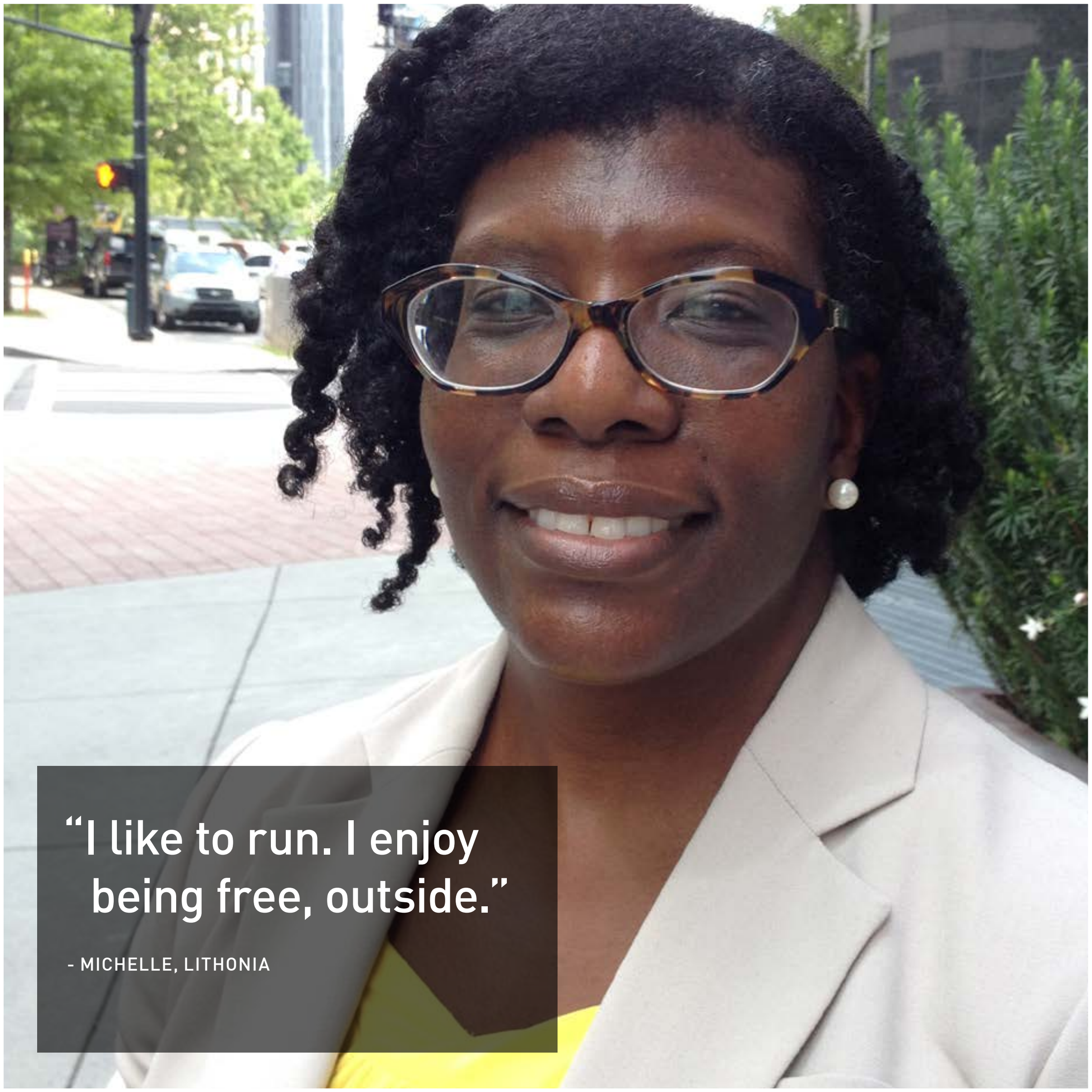
A regional vision for a more walkable, bikeable, and livable metropolitan Atlanta

ATLANTA REGIONAL COMMISSION



“I bike because it saves time — I get where I need to go while getting exercise.”

- ARTHUR, MIDTOWN



“I like to run. I enjoy being free, outside.”

- MICHELLE, LITHONIA

“Riding to work wakes me up and when I get there, my head is clear and ready for the day.”

- JERRY, PIEDMONT HEIGHTS

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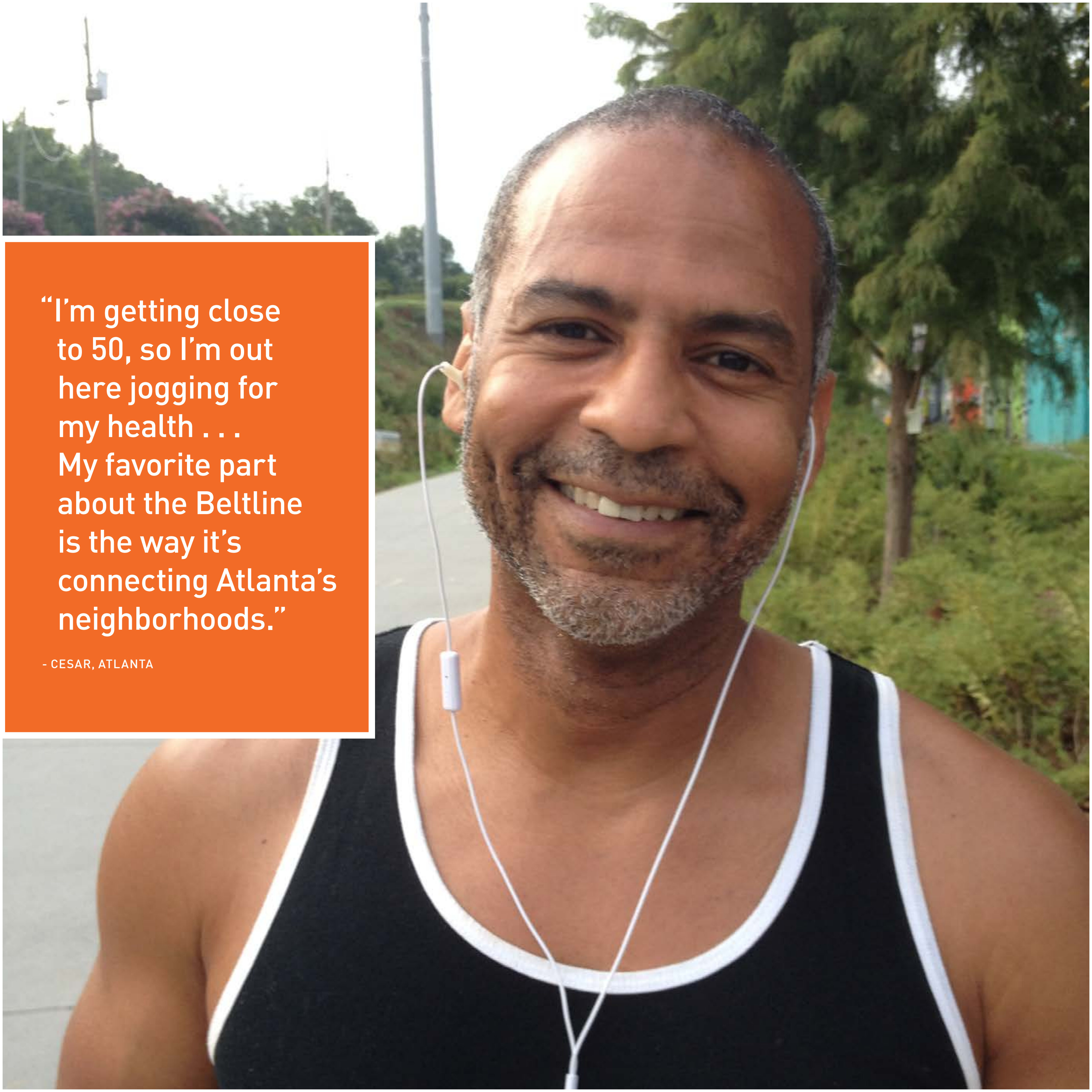
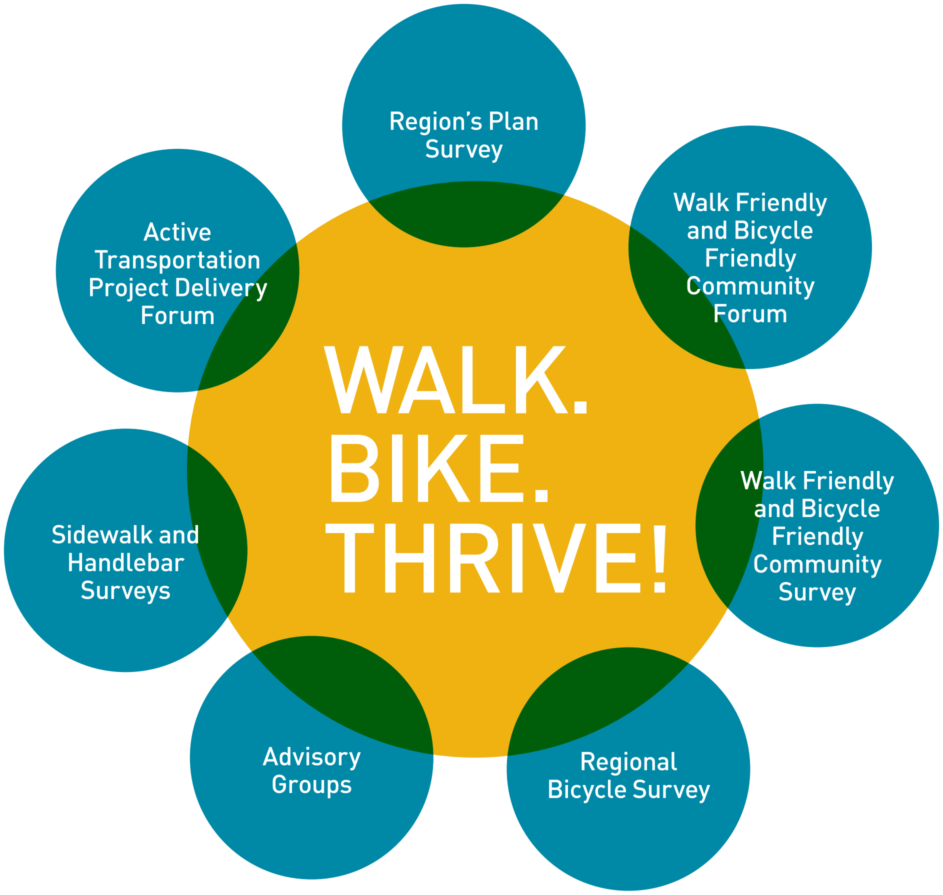


> “I’m getting close to 50, so I’m out here jogging for my health . . . My favorite part about the Beltline is the way it’s connecting Atlanta’s neighborhoods.”
>
> - CESAR, ATLANTA


Region's Plan Survey
Walk Friendly and Bicycle Friendly Community Forum
Active Transportation Project Delivery Forum
WALK. BIKE. THRIVE!
Walk Friendly and Bicycle Friendly Community Survey
Sidewalk and Handlebar Surveys
Advisory Groups
Regional Bicycle Survey

EXECUTIVE SUMMARY

Public involvement for Walk. Bike. Thrive! ranged from regional surveys about goals and policy to first person interviews on streets, at transit stops, and trails around the region. Outreach and input was also collected at two regional forums and with existing advisory groups.

The findings from research and outreach provide a composite understanding of regional needs and priorities related to walking and biking in the region, and they were used to shape the recommendations for this plan. The sections that follow summarize the findings from the surveys and meetings used to develop this plan.

KEY FINDINGS FROM THE PUBLIC INVOLVEMENT PROCESS INCLUDE:

Investing in a more balanced multi-modal transportation system is a top priority for the residents of the Atlanta Region.

The Atlanta Region's Plan survey revealed that expanded regional transit service and improved walkability are critical elements of a shared vision for the future. 86% of respondents believe that connections with a regional transit network are essential for existing/future job centers to grow and be successful in the future. The need for connected networks of walkways and bikeways was also a prominent topic spanning multiple public involvement activities during the development of *Walk. Bike. Thrive!* This plan provides a suite of recommendations that are intended to increase travel options and assist with multi-modal decision making at multiple geographic scales.

Vibrant walkable downtowns and main streets are some of the most cherished places in the region.

Attendees of the Walk- and Bike-Friendly Communities Forum stated a clear preference for town squares, parks, and other public spaces that are well connected by a balanced transportation system. Walkable and vibrant neighborhoods came out as the second-highest priority in the Region's Plan survey. During conversations with people walking and biking, people said they like places like Canton Street in Roswell or Peachtree Street in Midtown because there are lots of destination within close proximity of one another and there is a culture of respect for people on foot or bike. The recommendations in this plan advance a "20-minute neighborhood" concept intended to increase the number of people who have convenient access to these types of environments.

A lack of attention to the details that make walking and biking safe and comfortable has resulted in a transportation system that doesn't always encourage people to use active modes.

There is strong interest in walking and bicycling for transportation and recreation, but many people surveyed and interviewed expressed that current conditions discourage them from doing so. Common barriers include roads not designed to accommodate people walking or biking, high-speed traffic, and a lack of end-of-trip facilities such as bike parking. Intercept survey respondents commonly mentioned that their trips were uncomfortably hot due to a lack of street trees. Safety concerns and a lack of connectivity were the two issues that were raised most frequently across public involvement activities. *Walk. Bike. Thrive!* includes planning and design recommendations that can make walking and biking safe, comfortable, and convenient for people of all ages and abilities.

Opportunities to walk, bike, and thrive are not equitably distributed.

Conversations during the Walk Friendly Bike Friendly Forum, sidewalk and handlebar interviews, advisory committee meetings, and project delivery forum made it clear that not everyone has convenient access to high quality walking and biking infrastructure. This plan recommends using ARCs Equitable Target Areas to prioritize investments, and includes information on how local governments can talk about and begin to address equity issues in their communities.

ARC is uniquely equipped to facilitate regional collaboration, provide regional technical assistance, and lead the development of the regional trail system.

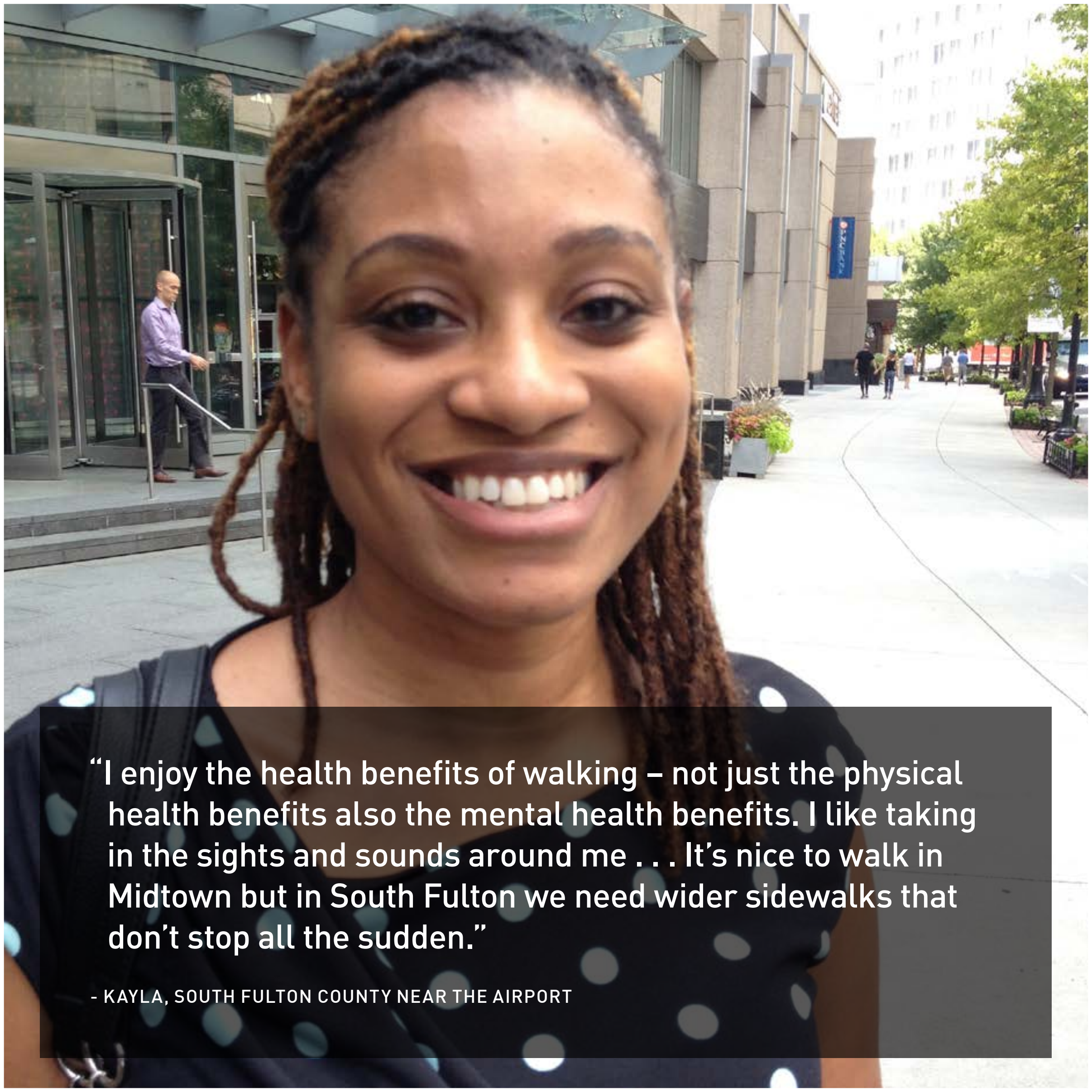
Stakeholders present for the Walk Friendly Bike Friendly Forum, Project Delivery Forum, and advisory committee meetings expressed a desire for ARC to serve as a regional convener to facilitate peer exchange, provide technical assistance oriented toward walk friendly and bike friendly communities, and play an active leadership role in implementing a regional trail vision. This plan recommends that ARC establish a Walk Friendly and Bike Friendly Communities resource center and technical assistance program, convene an annual Walk and Bike Friendly forum, provide evaluation and measuring assistance, and offer regional trail coordination assistance.

Local commitment to and capacity for improving the “5Es” of walkability and bikeability varies considerably throughout the region.

The results of the Walk Friendly and Bike Friendly Community surveys completed by cities and counties indicates that many cities and counties are taking active steps to improve the experience of walking and biking. However, not every community has the resources to address the barriers to walking and biking in a comprehensive way. The Walk Friendly and Bike Friendly Communities resource center, technical assistance program, and annual forum recommended in this plan should help cities and counties achieve the level of walk and bike friendliness that they desire.

"I love being able to bike my five- and eight-year old to school every morning."

- KATIE, CANDLER PARK



"I enjoy the health benefits of walking – not just the physical health benefits also the mental health benefits. I like taking in the sights and sounds around me . . . It's nice to walk in Midtown but in South Fulton we need wider sidewalks that don't stop all the sudden."

- KAYLA, SOUTH FULTON COUNTY NEAR THE AIRPORT

"Even though I drive to work, I like to walk to get lunch because there are a lot of places to go near the office. I could imagine biking to work if the roads were friendlier."

- JACK, WEST SIDE:

PRIORITY ISSUES AND STRATEGIES AS DESCRIBED IN ARC'S REGION'S SURVEY PHASE ONE

Rank	Issue	Strategy
1	Comprehensive Transportation System	Repair and maintain our existing roads and bridges
2	Walkable/Vibrant Neighborhoods	Strengthen a sense of community through parks, events and entertainment
3	Development/Educated Workforce	Encourage start-up opportunities, local business development and expansion
4	Secure Water Supply	Clean up and restore environmentally damaged areas
5	Arts/Health/Quality of Life	Provide ways for people to be more involved with their community
6	Innovation Hub	Develop research partnerships between government, universities and the private sector

THE ATLANTA REGION'S PLAN SURVEY

ARC regularly develops a comprehensive plan to guide the many initiatives led by the agency. The latest comprehensive regional plan, the Region's Plan, was developed in 2015, with an expected adoption date of 2016.

The foundation of the Atlanta Region's Plan is community input from people throughout the region. ARC used a variety of strategies to collect input, including a three-phase online survey. The first phase focused on prioritizing big-picture regional issues such as the transportation system, the economy, water supply, health, and quality of life. Phase two collected input about transportation and emerging technology. The third phase will close in January 2016, after the completion of *Walk. Bike. Thrive!*

The first phase of the survey revealed that **transportation, walkability, and vibrant neighborhoods are the top priorities** for residents. These issues rose to the top of the rankings relative to economic development, education, secure water supply, arts, health, and quality of live.

Part two of the survey showed **regional support for equality of economic opportunity, better transit service, and a future that includes autonomous vehicles.** The following list highlights key takeaways:

The findings from the phase two survey indicate a support for mobility options, including transit and autonomous vehicles. As more people choose these travel options, in part due to advances in mobile phone technology, people in the region could find themselves increasingly beginning or ending their trip by walking or biking. Focusing on **walking and biking at the local level can help accommodate access to these transport modes** and help with regional mobility needs and demand.

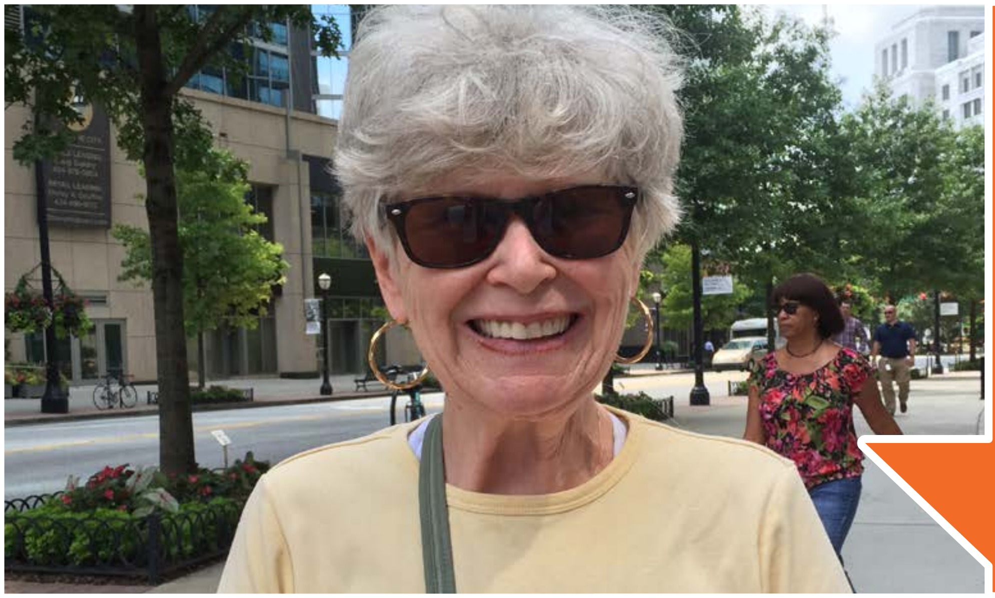
86% BELIEVE CONNECTIONS WITH A REGIONAL TRANSIT NETWORK ARE ESSENTIAL FOR EXISTING/FUTURE JOB CENTERS TO GROW AND BE SUCCESSFUL IN THE FUTURE

69% THINK IT IS IMPORTANT OR VERY IMPORTANT FOR THE REGION TO PROMOTE A VARIETY OF HOUSING OPTIONS THAT ARE CONNECTED TO EXISTING AND FUTURE JOB CENTERS VIA TRANSIT

55% HAVE MADE A CHOICE REGARDING EMPLOYMENT, EDUCATION OR HOUSING BASED ON ACCESS TO TRANSIT

69% THINK IT IS IMPORTANT OR VERY IMPORTANT TO HAVE A PUBLIC TRANSIT OPTION AVAILABLE WHERE THEY LIVE IN THE ATLANTA REGION RIGHT NOW

75% SAY DRIVERLESS CARS ARE A VIABLE OPTION FOR PEOPLE WHO CANNOT DRIVE THEMSELVES



"I moved to Midtown to be able to walk and bike more. The availability of shopping and dining options, access to transit, shuttle to Atlantic Station, and BeltLine make walking in Midtown a wonderful experience. My goal is to use my car as little as possible. Biking is still uncomfortable, but I'd feel safer if there were bike lanes along Peachtree St."

- CHERYL, MIDTOWN

"I walk to work every day because it's nice to be outside, get exercise, and feel a part of the community."

- KATIE, MIDTOWN

"I usually drive, but I wrecked my car so I'm using transit for a while. It's convenient because I catch the bus right outside of my apartment complex, and I often have seating and shelter at different bus stops I need to go to. If my car was working, I'd still drive because it takes over twice as long to take the bus, and that's with the app telling me when the bus will come."

- NIKKI, SOUTHWEST ATLANTA

"Biking is the fastest and most convenient way for me to get from home to the business school. I love going home after class because it's all downhill, very relaxing. Sometimes it can be uncomfortable when drivers behave badly and honk."

- ROHAN, GEORGIA TECH

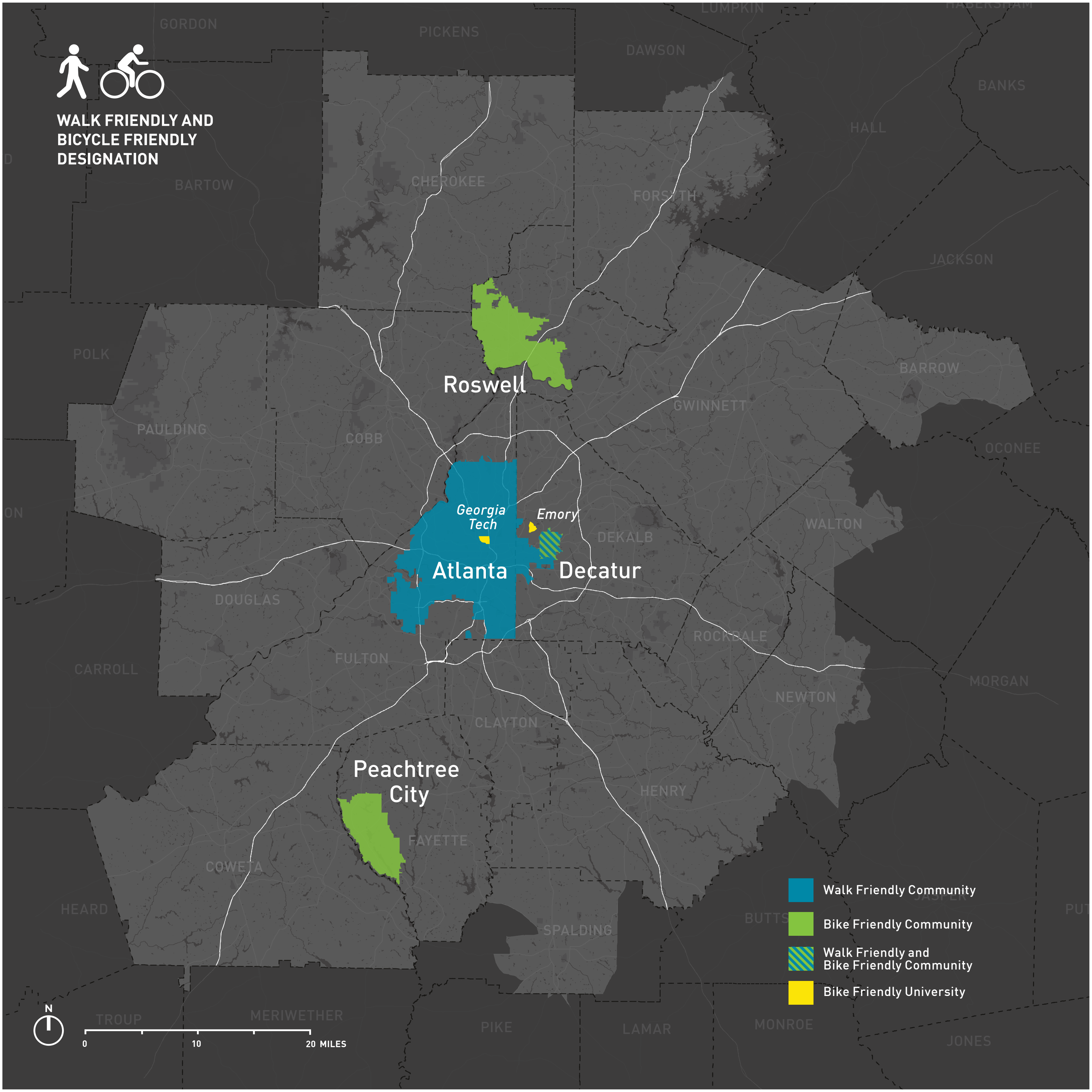
WALK- AND BIKE-FRIENDLY COMMUNITY SURVEY

Walk. Bike. Thrive! is designed to be used by ARC as well as local jurisdictions within the region. A Walk- and Bike-Friendly Community Survey was distributed to local and county governments throughout the region to collect data on infrastructure, policy, and programs related to walking and biking. Because the survey was done at the community-level, the results provide a snapshot of how local and county governments are addressing walking and biking.

Walk Friendly Community (WFC) and Bicycle Friendly Community (BFC) designations are awarded by the University of North Carolina Highway Safety Research Center's Pedestrian and Bicycle Information Center and the League of American Bicyclists respectively to recognize leading communities and help others improve their walking and biking conditions. Businesses and universities can also apply for Bicycle Friendly status. All programs offer bronze, silver, gold and platinum award levels, plus a diamond level for BFCs. These designations help communities gain national recognition for progress and innovation in an area that is of growing interest to residents and businesses.

The WFC and BFC programs focus on the "5Es" - education, encouragement, engineering, enforcement, and evaluation - as a multi-pronged approach to improving bike and pedestrian conditions. The process of applying for these designations can also help communities identify areas of need and next steps to improve walking and biking activity. After reviewing applications, the organization will inform the community what level designation, if any, will be given, with customized recommendations for next steps.

The 5Es framework was used to survey local jurisdictions and provide a quick scan of local policy, program, and infrastructure status and need. Below is a summary of the walk-friendly and bicycle-friendly designated communities, universities, and businesses as well as the results from the WFC and BFC survey conducted with MPO member jurisdictions.


WALK FRIENDLY AND BICYCLE FRIENDLY DESIGNATION

Walk Friendly and Bicycle Friendly Designations in the Atlanta Region

The currently designated communities are all places that are well respected for their walking and biking networks, though it is important to note that each has developed its own path toward walkability and bikeability based on its unique context.

Two communities in the Atlanta region have received a Walk Friendly Community (WFC) designation: Decatur and Atlanta. Decatur, a silver WFC since 2011, supports pedestrians with a robust crossing guards program for students, innovative evaluation tools to understand latent demand for walking, frequent public events that promote walking, and promotion of walkable downtown development thanks to innovative zoning and building codes. The other WFC is Atlanta, which received bronze level recognition in 2013. Atlanta has shown its commitment to pedestrians through events like Atlanta Streets Alive, projects like the BeltLine, road diets, and a wayfinding and signage program designed for pedestrians in Midtown and Downtown.

Decatur, Peachtree City, and Roswell currently hold bronze-level Bicycle Friendly Community (BFC) designations. Alpharetta received honorable mention in 2014. Decatur offers bicycling education programs in over 90% of its elementary and middle schools. Peachtree City has an extensive network of off-street paths that allow cyclists to avoid the suburban roads. In Roswell, over half of arterial streets have dedicated bicycle facilities. The region is also home to three bicycle friendly businesses (BFBs): the Atlanta Regional Commission, the Atlanta Bicycle Coalition, and Atlanta Trek Peachtree City; and two bicycle friendly universities (BFUs): Emory University and Georgia Institute of Technology.

Attendees at the Walk Friendly and Bicycle Friendly Forum shared their thoughts and ideas about how region can become more walk and bike friendly.

WALK FRIENDLY COMMUNITIES + BICYCLE FRIENDLY COMMUNITIES DESIGNATIONS

Walk Friendly Communities

Community	Designation Year	Designation Level
Decatur, GA	2011	Silver
Atlanta, GA	2013	Bronze

Bicycle Friendly Communities

Community	Designation Year	Designation Level
Roswell, GA	2006	Bronze
Decatur, GA	2012	Bronze
Peachtree City, GA	2014	Bronze

Bicycle Friendly Universities

University	Designation Year	Designation Level
Emory University	2011	Bronze
Georgia Institute of Technology	2012	Silver

Bicycle Friendly Businesses

Business	Designation Year	Designation Level
Atlanta Regional Commission		Bronze
Atlanta Bicycle Coalition		Silver
Atlanta Trek Peachtree City		Silver

Atlanta Region Walk Friendly and Bicycle Friendly Survey Results

To assess the region's existing conditions and policy landscape at the community level, a Walk Friendly and Bicycle Friendly survey was distributed to each jurisdiction in the region. The survey included many of the questions that appear on the WFC and BFC applications, which ask about the status of elements that help support biking and walking activity, such as sidewalks, community events, pedestrian and bike safety action plans, and training for municipal staff and public safety officials. The survey is organized by the 5Es: Engineering, Education, Encouragement, Enforcement, and Evaluation. Representatives from 44 communities responded to the survey, including 10 counties.

Based on the results, **engineering is the strongest of the five Es for the region.** For example, 80% of responding jurisdictions require walking and biking infrastructure to be constructed or upgraded with all or most of new development. However there is certainly room for improvement, as evidenced by the fact that only 20% of respondents claim to have a comprehensive, connected, and well-maintained bicycle network.

The **weakest area for regional communities is education,** based on survey responses. Only 20% of communities have bicycle education courses available for adults, and just 13% have implemented education or training programs related to pedestrian and bicycle education, safety, or design for municipal staff.

ENGINEERING

The engineering strengths of those communities that responded include the provision of crosswalks at most intersections and requiring walking and biking infrastructure to be built with new development. Areas for improvement include:

- developing connected walkway and bikeway networks
- strengthening local policy around design standards and requirements for walking and biking infrastructure
- expanding access and policy for bicycle parking

ENGINEERING WFC + BFC SURVEY RESULTS

Yes	Question
80%	Are formal crosswalks provided at most street intersections and at areas with high demand for pedestrian traffic?
80%	Does your community require walking and biking infrastructure, such as sidewalks, on-street bikeways or trails, to be constructed or upgraded with all (or the majority of) new private development?
63%	Does your community have a sidewalk condition and curb ramp inventory process?
50%	Does your community have a comprehensive, connected, and well-maintained pedestrian network?
48%	Does your community have adopted guidelines or standards for pedestrian and bicycle facility design?
46%	Does your community have a complete streets policy or other policy that requires the accommodation consideration of pedestrians or cyclists in all new road construction and reconstruction projects?
44%	Do you have a connected network of trails or multi-use paths in your community?
33%	Are all bridges accessible to pedestrians and bicyclists?
28%	Is bike parking readily available throughout the community?
28%	Does your community require bike parking to be constructed or upgraded with all (or the majority of) new private development?
26%	Do you provide regular training for staff engineers and planners regarding pedestrian and bicycle facility design?
20%	Does your community have a comprehensive, connected, and well-maintained bicycling network?

EDUCATION

All of the questions related to Education scored less than 50%. The topic with the most focus within the Education category is participation in the Safe Routes to School program. Areas for improvement include:

- Expansion of schools participating in SRTS programs
- Expansion of education programs about walking and biking for all roadway users
- Training for municipal staff specifically focused on walking and biking infrastructure design

EDUCATION WFC + BFC SURVEY RESULTS

Yes	Question
41%	Has your community implemented Safe Routes to School (STRS) programs in any of the local schools within the last 18 months? Does it include both bicycle and pedestrian education?
26%	Does your community educate motorists, pedestrians, and cyclists on their rights and responsibilities as road users (e.g., as part of drivers education curriculum, test manual, or bus driver training)?
20%	Are there bicycle education courses available for adults in the community?
13%	Has your community implemented any education and training programs related to pedestrian and bicycle education, safety, or design for municipal staff?

ENCOURAGEMENT

All of the questions related to Encouragement also scored less than 50%. Topics that scored highest in this category include the presence of programs that encourage people to bike more frequently and the presence of a bicycle advocacy group in the community. Areas for improvement include development of advocacy groups that address pedestrian needs and hosting events that specifically celebrate walking and biking.

ENCOURAGEMENT WFC + BFC SURVEY RESULTS

Yes	Question
39%	Does your community celebrate bicycling with community events such as organized rides, Georgia Commute Options Bike Challenge, Bike to Work Day, National Bike Month or other media outreach?
39%	Is there an active bicycle advocacy group in the community?
37%	Does your community offer walking or biking route maps, guides, or self-guided tours for residents and visitors?
26%	Does your community host any events that promote walking or biking, such as car-free streets like ciclovias or Atlanta Streets Alive?
26%	Is there an active pedestrian advocacy group in the community?

ENFORCEMENT

Like Encouragement and Education, all of the questions related to Enforcement scored less than 50%. Topics that scored highest in this category include the presence of walking and biking patrols by law enforcement and local ordinances that specifically address walking and biking safety and accessibility. The area with the most need for improvement is targeted enforcement efforts for motorists and other roadway users.

ENFORCEMENT WFC + BFC SURVEY RESULTS

Yes	Question
44%	Does your community have law enforcement or other public safety officers on bikes or foot patrols?
41%	Do local ordinances and laws address walking and biking safety and accessibility?
41%	Do police work regularly with traffic engineers and planners to review sites in need of safety improvements, such as areas with frequent bicycle or pedestrian-involved crashes?
37%	Does your community provide specific training on bicycle and pedestrian traffic laws for public safety officials, such as whether it is legal to ride a bike on a sidewalk or when motor vehicles drivers are responsible for yielding to pedestrians?
17%	Does your community use targeted enforcement programs to promote pedestrian safety in crosswalks (such as a "crosswalk sting", media campaign regarding pedestrian-related laws, progressive ticketing, etc.

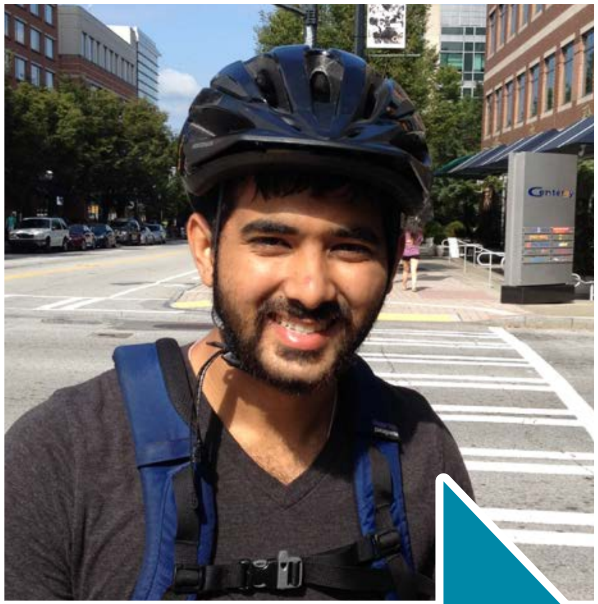
EVALUATION AND PLANNING

The evaluation and planning strengths of those that responded include the availability of public transportation as well as the adoption of trails master plans and policies to guide decision-making about walking and biking infrastructure. Key opportunities for improvement in this category include:

- establishment of bicycle and pedestrian advisory committees
- development of safety plans that respond to walking and biking crashes in the community
- development of regular bicycle and pedestrian count programs

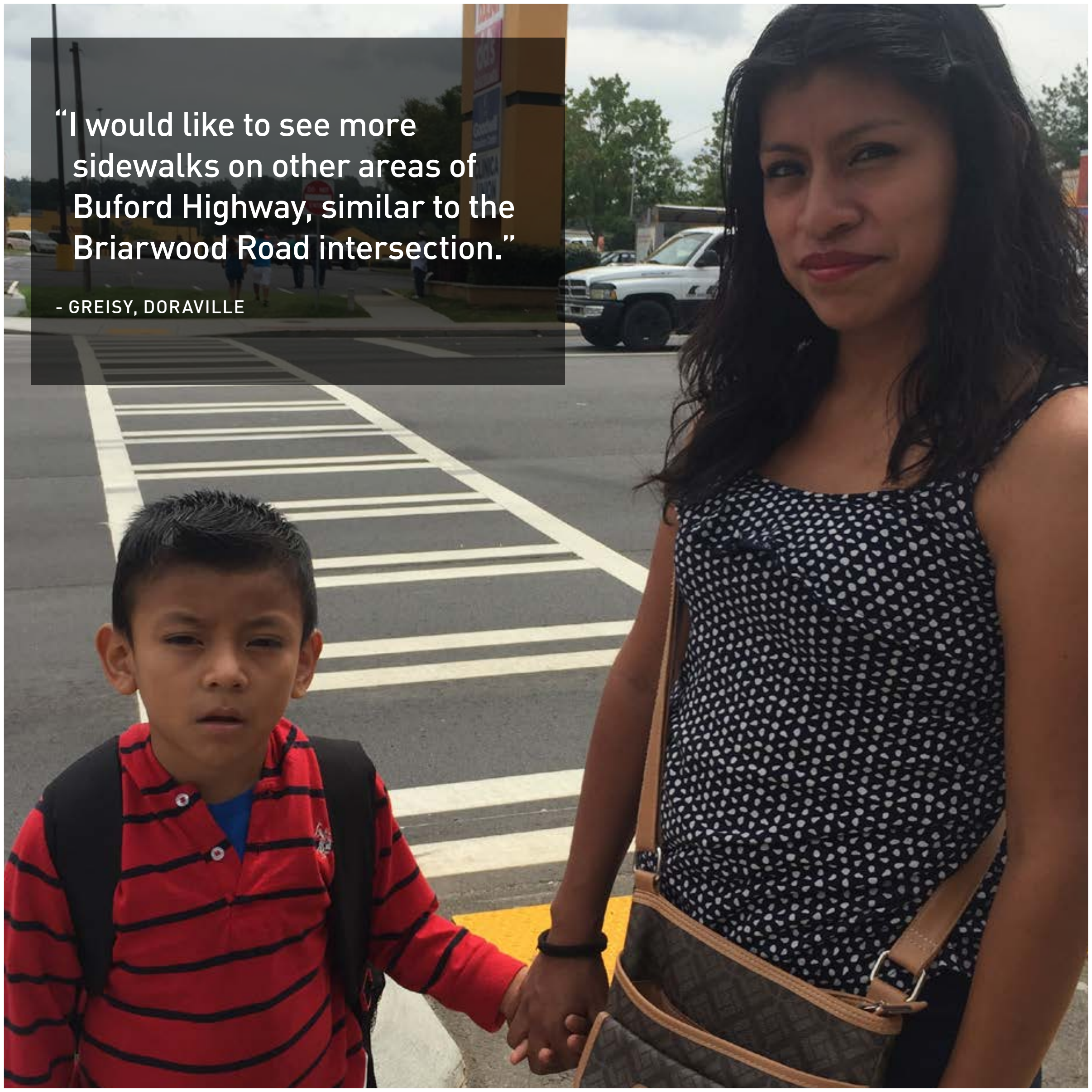
EVALUATION AND PLANNING WFC+BFC SURVEY RESULTS

Yes	Question
70%	Is your community served by public transportation in the Atlanta metropolitan area, such as local service within your community or regional rail or bus service stops in your community?
67%	Does your community have a trails master plan?
57%	Does your community have a policy requiring sidewalks on both sides of major streets?
54%	Has your community adopted an ADA Transition Plan for the public right of way?
52%	Has your community established a connectivity policy, pedestrian-friendly block length standards and connectivity standards for new developments, or convenient pedestrian access requirements for new developments?
44%	Does your community collect data related to pedestrian/bicycle-vehicle crashes on existing or future corridor improvement projects?
44%	Does your community have a pedestrian master plan or pedestrian safety action plan?
41%	Does your community have a bicycle master plan?
26%	Do you have a Pedestrian Coordinator or staff person responsible for pedestrian-related issues?
26%	Does your community have a Bicycle Coordinator or staff person responsible for bicycle-related issues?
15%	Does your community have a Bicycle and Pedestrian Advisory Committee, or similar committee that works to address the needs of those walking and biking which meets regularly?
11%	Is there a specific plan or program in your community to reduce cyclist/pedestrian and motor vehicle crashes?
9%	Does your community have an ongoing pedestrian/bicycle counting or survey program that allows for long-term analysis of walking and bicycling trends?



> “I bike because I’m still learning to drive, although I’ve had my learner’s permit for three years now and I’m really not in a rush to get my license. I don’t really like cars and feel safer on a bike.”

- DANIEL, OLD FOURTH WARD



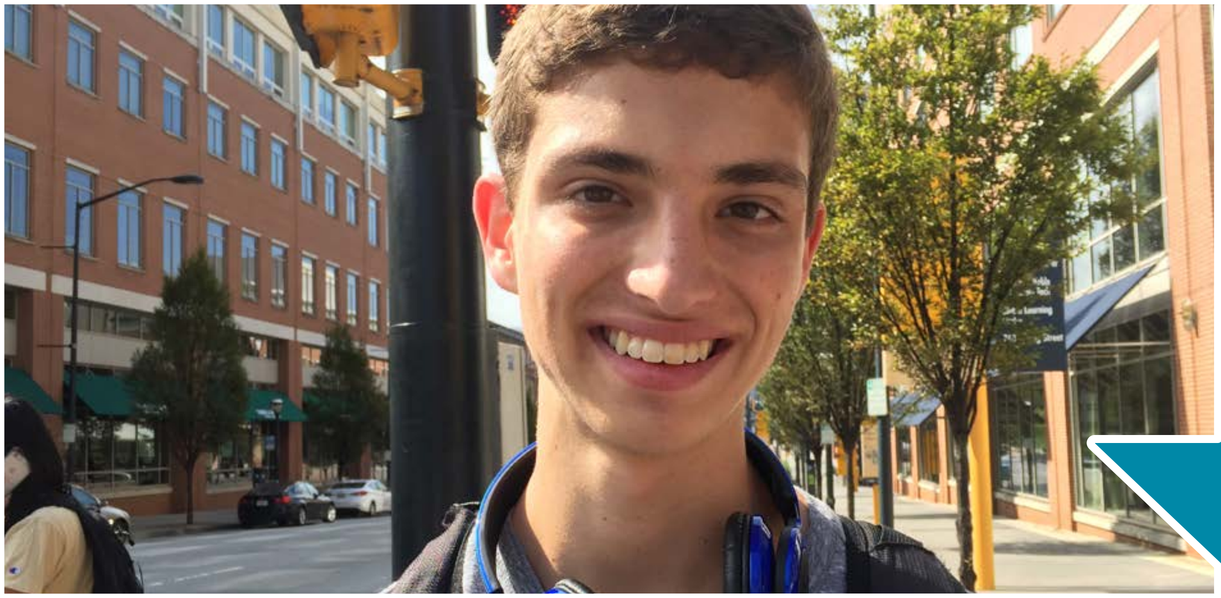
> “I would like to see more sidewalks on other areas of Buford Highway, similar to the Briarwood Road intersection.”

- GREISY, DORAVILLE

OPEN
Storewide Summer Sale In Progress!
LAMPS – ART – GIFTS – JEWELRY – HOME DECOR
GALLERY

> “This is my version of coming into the city. Walking around on Canton St is nice because there a lot of crossings with signs telling drivers to stop.”

- PAT



"It's not worth maintaining a car on campus. Walking gives me a chance to listen to music and clear my head. It's relaxing and helps me think. I'd prefer better timing for pedestrian signals at intersections."

- CHRISTIAN, GEORGIA TECH

"I would bike as much as 5 miles to get to work, but I have to drive 50 miles on average. I would bike to the shopping center too if it were within 5 miles, unless I had to get something big. I wish there were more bike lanes, I don't like to bike on the street."

- STAN, CLARKSVILLE

"I ride a bike because I can get exercise while I run errands. I really like getting around using human power — no fossil fuels required."

- SUSAN, GRANT PARK

"Sometimes the speeding cars don't care to stop when it is the pedestrian's time to cross the street."

- MAYRA, ATLANTA

WALK- AND BIKE-FRIENDLY COMMUNITY FORUM

On Friday May 29, 2015 over 100 individuals from the Atlanta area gathered for the Walk-Friendly Community and Bike-Friendly Community Forum in the R. Charles Loudermilk Center to learn about the benefits of active transportation and provide input to inform the regional bicycle and pedestrian plan update. Attendees included elected officials, state and regional agency staff, local jurisdiction staff, non-profit representatives, advocates, and interested citizens.

Doug Hooker, Executive Director for the Atlanta Regional Commission (ARC), welcomed attendees and provided an introduction to the Pedestrian and Bike Plan update. Presentations from national and local leaders then set the stage for more interactive discussions. Mia Birk, CEO of Alta Planning and Design, presented national trends in walking and biking; Byron Rushing, Bicycle and Pedestrian Planner for ARC, then followed with Atlanta's current successes and challenges; and finally Brad Davis, Atlanta office manager for Alta Planning + Design, discussed the potential strategies to improve and support walking and biking in the Atlanta region.

Attendees shared their thoughts about regional priorities, needs, and issues in small group discussions and with interactive comment boards. What follows is a summary of the input collected during the small group discussion and on the comment boards.

Small group discussions

Attendees had an opportunity to share their concerns and priorities for walking and biking in small groups organized by general geographic location, allowing discussions to focus on the issues and opportunities unique to their area of interest in the region. The groups focused on answering five questions: their current perception of walking and biking; the places they like best in their communities; priority issues and needs; what ARC and local communities can do to become a Walk-Friendly Community (WFC) or Bike-Friendly Community (BFC);, and opportunities for new trails and greenways.

QUESTION 1

Could you imagine walking and biking to work one day a week? What about to the grocery store or to a park? Why or why not?

Participants communicated a strong interest in walking or bicycling to work, retail and parks, but are concerned about safety and comfort. In the right environment, many would like to start walking or biking in place of driving. Barriers common to all parts of the region include roads designed for high-speed traffic, lack of end-of-trip facilities, and topography. Representatives from the northern area also emphasized the flexibility and convenience a personal vehicle affords and the need for back roads that are well suited for biking and walking. In the east, proximity of origins and destinations to the Stone Mountain Trail or one of the other trails in the area is a major factor in whether or not people bike or walk. In the south, a major barrier is the length of the average commute, though some road diets could go a long way in making it easier to walk or bike to transit or other destinations. For the western region, physical barriers such as major highways and railroads interfere with walking and biking connectivity. The group representing central Atlanta had the highest prevalence of people who already bike and walk frequently, but even that cohort views safety as a major barrier.

Roads designed for high-speed traffic were identified as barriers to walking and biking by forum participants.

QUESTION 2

What's the best place in your city/town?

Forum attendees stated a clear preference for town squares, parks, and other public spaces that are well connected by a balanced transportation system. Participants tend to prefer mixed-use or civic spaces that are designed at a human scale. Popular places are town centers throughout the region like the Kirkwood neighborhood commercial center, neighborhood parks like Riverside Park, and trails like the Atlanta BeltLine. The following list describes the results in greater detail:

NORTH

- Dresden area around the MARTA station
- Duluth's town green
- Canton Street in Roswell
- Riverside Park
- Downtown Atlanta
- The newly mixed-use areas in Perimeter Center
- Vickery Development
- Downtown Woodstock

SOUTH

- Downtown McDonough
- Natural features in Peachtree City

EAST

- Downtown Decatur
- Olmsted Park
- Downtown Kirkwood
- Stone Mountain Trail
- Tucker's Main Street
- Downtown Norcross
- Lavista Par
- Emory Village

WEST

- BeltLine
- Smyrna Village Green / City Hall area
- Downtown Douglasville
- PATH foundation trails
- Broad St. Marietta to Peachtree
- Neighborhood parks
- Town centers throughout the region

CENTRAL

- Virginia Highlands
- Old Fourth Ward
- Freedom Park Trail
- Downtown - Georgia State
- Poncey Highland Area
- Kirkwood Neighborhood
- Blackburn Park
- John's Creek
- Piedmont Park
- Decatur
- BeltLine
- West End
- Path 400
- Inman Park

QUESTION 3

What are the priority issues and needs in your area of the region?

Priority issues and needs are similar throughout the Atlanta region, with some key differences for specific areas. Two chief concerns amongst participants are **safety and connectivity**. Gaps in the walkway and bikeway network need to be closed, and the network should be made more robust with new infrastructure like bike lanes, bike boxes, and bike parking. At the same time, discussion focused on the need to engage all road users to educate them about rules and responsibilities.

Several of the discussions touched on the topic of **collaboration**. Specifically, participants expressed a desire for better coordination across jurisdictional boundaries so walkway and bikeway networks will be more complete and communities can grow stronger by unifying their vision and resources.

In areas where transit is available, **last- and first-mile connectivity** is also an important concern. All transit stops, including bus stops, should have safe road crossings.

In the less urban areas of the Atlanta region, **distance between origins and destinations** is also a big issue. Participants want jurisdictions to have a more diverse mix of land uses in close proximity to one another and encourage development that brings destinations closer to the people who will visit them.

Gaps in the sidewalk network create safety and connectivity issues.

The following list is a more detailed account of the issues and needs by geographic areas of the region:

NORTH

- Growth: Forsyth County currently having to widen roads, add parks, and add other services
- Woodstock is transitioning from bedroom communities to livable working communities
- Need transit between suburbs, not just from suburbs to downtown
- Need amenities to encourage bicycling
- Opposition from residents to bike lanes, need vision (Dunwoody)
- In Tucker, Highway 29 & North Lane Parkway are very dangerous roads for biking and walking; sidewalk is poorly maintained and narrow.
- Last mile connections in Perimeter Center. Need bike share and/or shuttle
- Marietta currently trying to connect neighborhoods to trails by marking shared roads with 20 mph speed limits. Need more champions and leadership in the communities.
- Sprawl is an issue: concentrate new development in areas that already have some and preserve green space
- Congestion in Brookhaven is mostly through traffic. Brookhaven needs more connectivity within the city and mobility options. Need weather-sensitive design (i.e. trees for shade)

SOUTH

- Construction and coordination of basic bike infrastructure
- Collaboration across counties to combine resources and align pedestrian or bike routes across jurisdictional lines.
- More of the type of capacity, funding, and leadership brought by CIDs to other regions in Atlanta

EAST

- Connectivity and safety: sometimes even designated bike routes don't have any bike markings
- Education regarding rules and responsibilities for drivers, bikers and walkers
- Affordability and gentrification
- Equitable distribution of sidewalk infrastructure in low-income neighborhoods
- Strict requirements for removing a lane in favor of a multi-use path.
- Lowering traffic reduction as a transportation planning priority
- Bike lanes on DeKalb Avenue
- Safe street crossings at all bus stops

WEST

- Connectivity and lack of shoulders on main roads
- Not-in-my-backyard attitudes toward sidewalks
- Political support
- Prioritize quieter streets and alternative routes for other modes.
- Distance
- Regional coordination amongst land use, parking, transit, and transportation planning

CENTRAL

- Prioritize infrastructure in employment and activity centers
- Repair broken sidewalks
- Intersections that accommodate pedestrians and cyclists
- Castleberry Hill neighborhood needs bike infrastructure
- More respect for pedestrians
- Equity – build pedestrian infrastructure in dangerous places like Buford Highway, where people walk only because they don't have another option
- Connecting multi-use trail network
- Educating kids about their responsibilities as a walker or biker
- First- and last-mile connectivity
- Mix land uses to better reflect human scale
- Bring challenges of vulnerable communities to forefront (e.g. single-parent households, crime, health)
- Institutional barriers: funding parity between vehicle and pedestrian/ bike infrastructure; quicker process; vehicle LOS study required, but no similar requirement for bike/ pedestrian service analysis
- More top-down leadership (Governor's office, Georgia Chamber of Commerce)

QUESTION 4

What can ARC do to help you become a WFC or BFC community? What can you do to become a WFC or BFC community?

The small groups also shared thoughts about how ARC can help more communities achieve WFC and BFC designation. Again, participants emphasized **collaboration and peer exchange**, both within and beyond the MPO region, as an important step in helping communities achieve WFC or BFC designation. Local communities want ARC to support them by providing **training** for planners, engineers and maintenance staff on best practices for bicycle and pedestrian infrastructure design and policy. This is particularly important for newer, smaller cities and towns that have less capacity. Georgia Bikes, a statewide bike advocacy group, has done complete streets workshops in some places (including Decatur and Rome), but there need to be more events like this in other areas. In particular, the southern part of the region has not seen training workshops like this. ARC could also help local communities by **connecting staff** from public works, school districts, maintenance, engineering, and other departments to individuals in their field who have been successful in other jurisdictions in the Atlanta region.

Another area of emphasis was **overcoming the political and administrative barriers** for bicycle and pedestrian investments. ARC could do this by taking the transportation focus off of travel time savings and vehicle level of service, and moving toward other indicators that measure mobility more holistically. ARC could support implementation by **creating requirements or incentive for federally-funded projects** that improve active transportation options. In general, local communities are looking for **streamlined processes** for receive funding, or helping communities streamline the process of receiving state or federal funding for active transportation projects, which tend to be less complicated and smaller in scale than many roadway projects.

QUESTION 5

What would make a great regional trail in your area of the region? What would it provide? What would it connect to?

Finally, the groups discussed priorities for trails. A major theme throughout all discussions was the need to connect new trails to existing trails and parks. Participants in the central group also emphasized connections between origins and destinations, such as schools, downtowns and hospitals. The group representing the southern region highlighted their current lack of a major trail like Path 400 or the Silver Comet Trail, so that would be a major priority for them. The southern group also raised the idea of connecting trails to transit. Several participants mentioned ways ARC could assist in identifying potential trails and greenways, such as compiling regional sanitary sewer maps, utility right-of-way maps, going door-to-door to engage residents and engaging children to identify trails that will be useful and fun for them. Specific trail suggestions are listed below:

NORTH

- Noonday Creek trail is partially built. There is a four mile gap that needs to be closed. Working with Cherokee County on a comprehensive transportation plan that would have a similar mixed use trail; would create a density of mixed use trails in the area.
- Trail design also needs to account for Atlanta/southern climate and provide good shade as well as comfort amenities (water fountains, rest locations, etc.)

SOUTH

- Along streams and/or Chattahoochee
- Connect to Fayetteville's expanding multiuse paths
- Connecting to transit

EAST

- Near stormwater management facilities
- Along utility right-of-ways
- Along CSX train lines
- Places where we can maintain wildlife corridors along the multi-use trails

WEST

- Kennesaw Mountain to the BeltLine
- BeltLine to everything
- Following the waterways – connecting to green spaces
- Chattahoochee NOW

CENTRAL

- Dekalb Avenue from the heart of downtown Atlanta to Decatur, as a bicycle/pedestrian super highway
- Boulevard/Old Fourth Ward to Grady Hospital area
- Continue Stone Mountain Trail from Piedmont into downtown as a multi-use trail
- Bicycle facility along Ralph McGill from downtown to Freedom Park
- Connectivity to Emory University trails development
- Links between downtown Atlanta and suburban areas like Norcross, Alpharetta, and Johns Creek
- Network of trails to schools and universities

The most frequently listed "best places" were walkable downtowns, main streets, and mixed-use centers.

Individual Feedback and Interactive Comment Boards

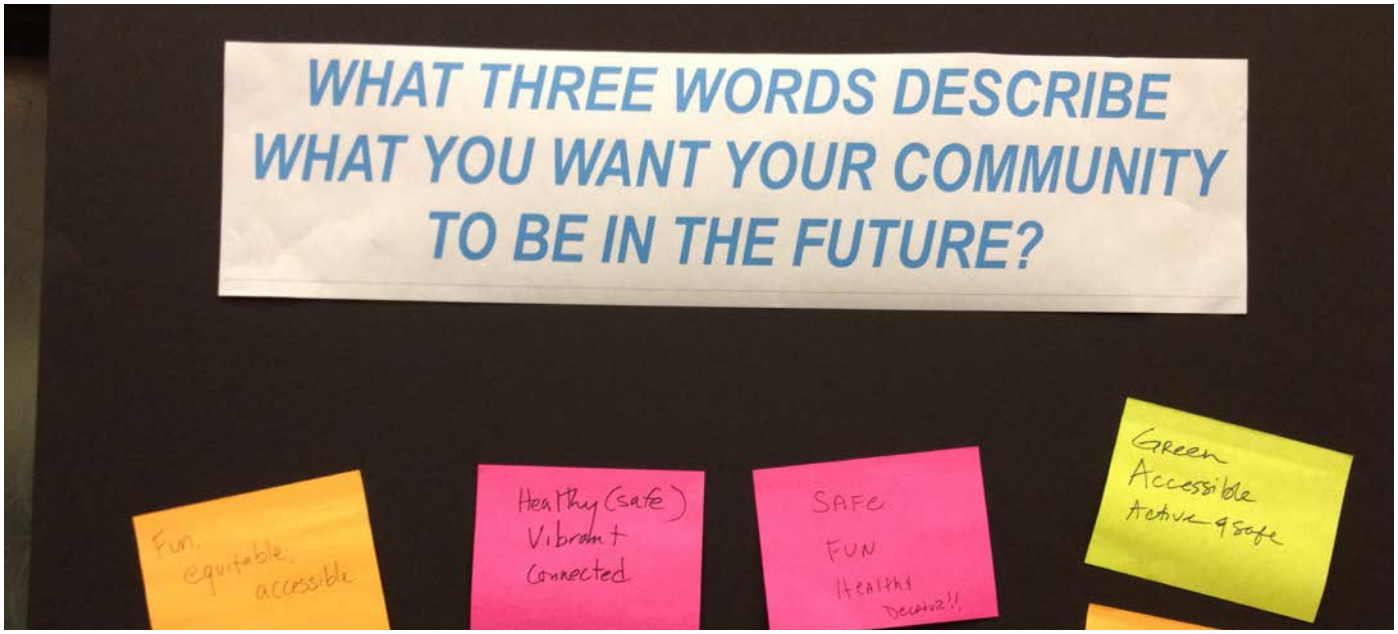
The forum also included an opportunity for individual feedback, where participants responded to five questions by writing their responses and posting them on boards throughout the room. Questions asked about what places already work well, current perception of walking and biking in Atlanta, Atlanta's personality as a region, and visions for the future. Several themes emerged in response to these questions.

What's the best place in your city/town?

Residents stated a clear preference for areas designed for **human scale** with a built form that supports and reflects those who live, work, or play there. Some of the more frequently listed places were downtown Decatur, Midtown Atlanta, and Avondale Estates. Other responses include Roswell's Canton Street, downtown Douglasville, Dresden Drive by the Brookhaven MARTA Station, Inman Park, and downtown Woodstock. Overall, the favorite places were spread throughout the region, but the vast majority of the places were downtowns, main streets, and mixed-use centers.

What's the best trail or park in your city/town?

The most popular trails and parks amongst participants were the **Atlanta BeltLine, Piedmont Park and Stone Mountain**. These are three very different parks, but serve as recreation and transportation assets to the people who live near them as well as those throughout the region who travel there to take advantage of them. Some of the other places participants listed were the Freedom Parkway Trail, Hidden Cove Park, Kennesaw Mountain National Park, Blackburn Park and Trail, Nancy Creek Park, Springvale Park, Ponce Parks, Noonday Creek, Big Creek Greenway, Medlock Park, Peachtree Creek Trail, Glenlake Park, Mill Trail and Arabia Mountain Park.


WHAT THREE WORDS DESCRIBE WHAT YOU WANT YOUR COMMUNITY TO BE IN THE FUTURE?
Fun, equitable, accessible
Healthy (safe) Vibrant Connected
SAFE FUN Healthy Decatur!!
Green Accessible Active & safe

Accessible, connected, healthy, fun, equitable, and safe were some of the most frequently appearing words people used to describe the future they hoped for.

When you think of walking and biking in your community, what are the first words, phrases or images that come to mind?

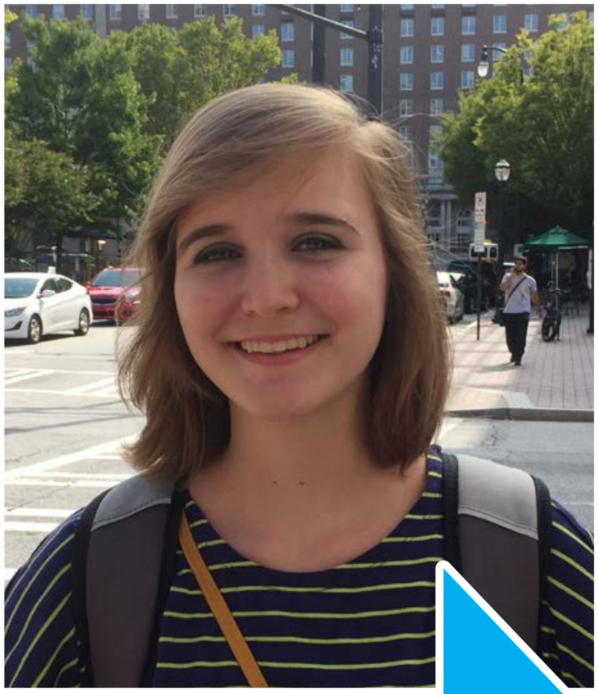
Participants have mixed feelings about walking and biking in their communities. The responses demonstrate a clear interest in biking, with terms like, "Fun," "Relaxing," and "Healthy." However, responses like, "Traffic," "Dangerous," and "Safety," show that **perception of walking and biking is still negatively impacted by safety concerns.** One participant's comment summarized the general feelings in saying, "(Potentially) Friendly, smiling, healthy, children (but not yet)." Participants' concerns were mainly about continuity of sidewalks, maintenance issues, and disrespect from drivers.

If the Atlanta region were a person, how would you describe him/her?

There were a wide range of responses describing Atlanta as a person, but most of them support the perception of Atlanta as a place that is **torn between its past, present and future**. One respondent wrote, "Stubborn, but has potential," while another wrote, "In a constant feud with its outdated grandfather." These descriptions would suggest Atlanta is at a crossroads and trying to figure out how to honor its past while serving the needs of its current residents and setting itself up to support the needs of the future.

What three words describe what you want your community to be in the future?

The strongest themes were **accessibility/ connectivity, health, fun, equity and safety**. These goals should be prioritized when imagining what Atlanta could be in the future. A second-tier set of words respondents used often were **green, vibrant, diverse and active/energetic**. Other descriptors include **walkable/ bikeable, cultural, livable, unique, car-optional and self-sustaining**.



“The Tech Trolley isn’t convenient from where I live, and there are nice sidewalks so walking is the best option for me to get around campus.”

- SUZANNE, GEORGIA TECH

“I would like for drivers to slow down.”

- DORIS, SHALLOWFORD ROAD

“Commuting by bike is less expensive than driving and more convenient than taking transit ... I’d like to see better education and awareness for drivers and pedestrians so that we’re all on the same page about everybody’s rights and responsibilities.”

- ARTHUR, DOWNTOWN

"I live near parks, a cemetery, houses, and good sidewalks so there are lots of diverse people walking and running. I love seeing all the people and activity."

- PATRICIA, COLLEGE PARK

"We have marked bike routes in Roswell where you can ride on calm residential streets, but we need bike lanes or paths on the major roads. I would ride more often if it was easy and comfortable."

- BARRETT, ROSWELL

"I bike because it's faster than walking, and I haven't figured out the Trolley routes yet. I love biking to save time. I'm comfortable riding on campus because there are bike lanes and plenty of space. There are also plenty of bike shops and places I can get maintenance done."

- BOBBY, GEORGIA TECH

> “Recently, I’ve been cycling every morning before work. It makes me feel healthier and more awake when I get to work.”
>
> \- MARVIN, STONE MOUNTAIN

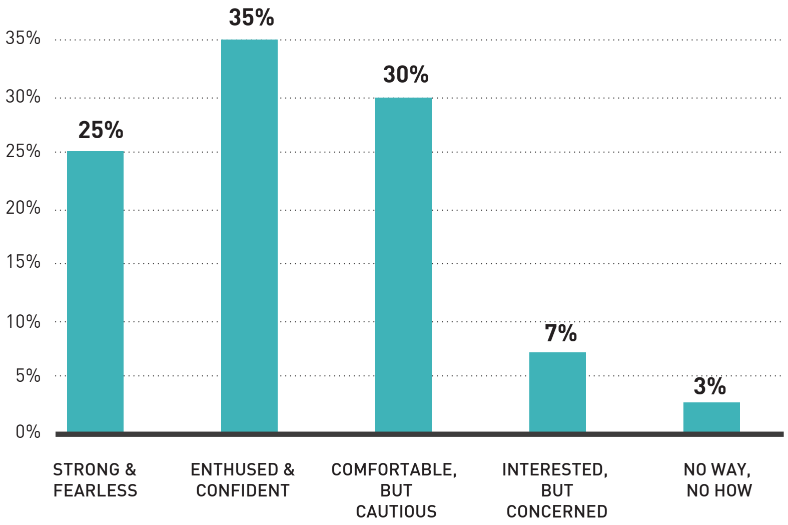
REGIONAL BICYCLE USER SURVEY

The purpose of the survey was to better understand the region's current bicycling population, including demographic factors, geographic distribution, typical trip types and lengths, and significant barriers to travel. Data limitations associated with the survey include a lack of geographic and demographic diversity as well as access limitations associated with digital distribution.

The survey findings highlight that many people ride their bike in the region, but most people don't ride every day or for most trips. Some of the reasons are real or perceived impracticality of trips, long trip distances, absence of dedicated infrastructure for bicycles, high levels of traffic stress, and safety concerns. Survey respondents reported that they would ride more frequently if bike lanes, trails, and safer traffic conditions existed, destinations were in closer proximity, and factors that contribute to traffic stress, such as large intersections, high-speed traffic, and heavy traffic volumes, were addressed.

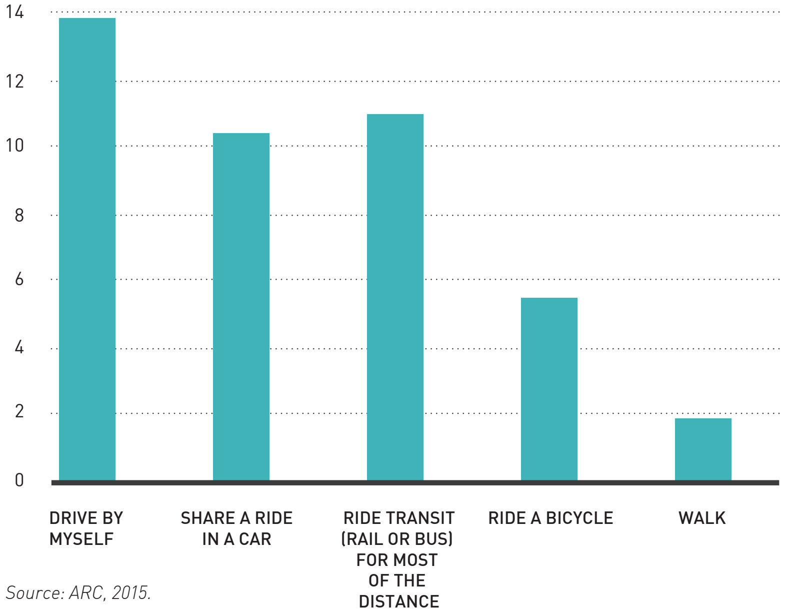
The Atlanta Regional Commission's Regional Bicycle User Survey was a web-based survey conducted between October to November 2013. The questions were intended to better understand the region's current bicycling population, including demographic factors such as age, gender, and self-defined confidence level as well as geographic distribution, typical trip types and lengths, and significant barriers to travel. The survey was developed and distributed through Survey Monkey to known ARC stakeholders including the region's Bicycle & Pedestrian Taskforce and Transportation Coordinating Committee, as well as bicycle rider clubs, social media groups, and other web-based distribution lists. The survey generated 1324 responses with a 78.5% completion rate. Potential faults with the survey are a lack of geographic (and thus demographic) diversity as well as digital distribution and technology access limitations to responses.

BIKE SURVEY - CONFIDENCE
IN TERMS OF YOUR LEVEL OF COMFORT AND CONFIDENCE AS A BICYCLIST, HOW WOULD YOU CATEGORIZE YOURSELF?



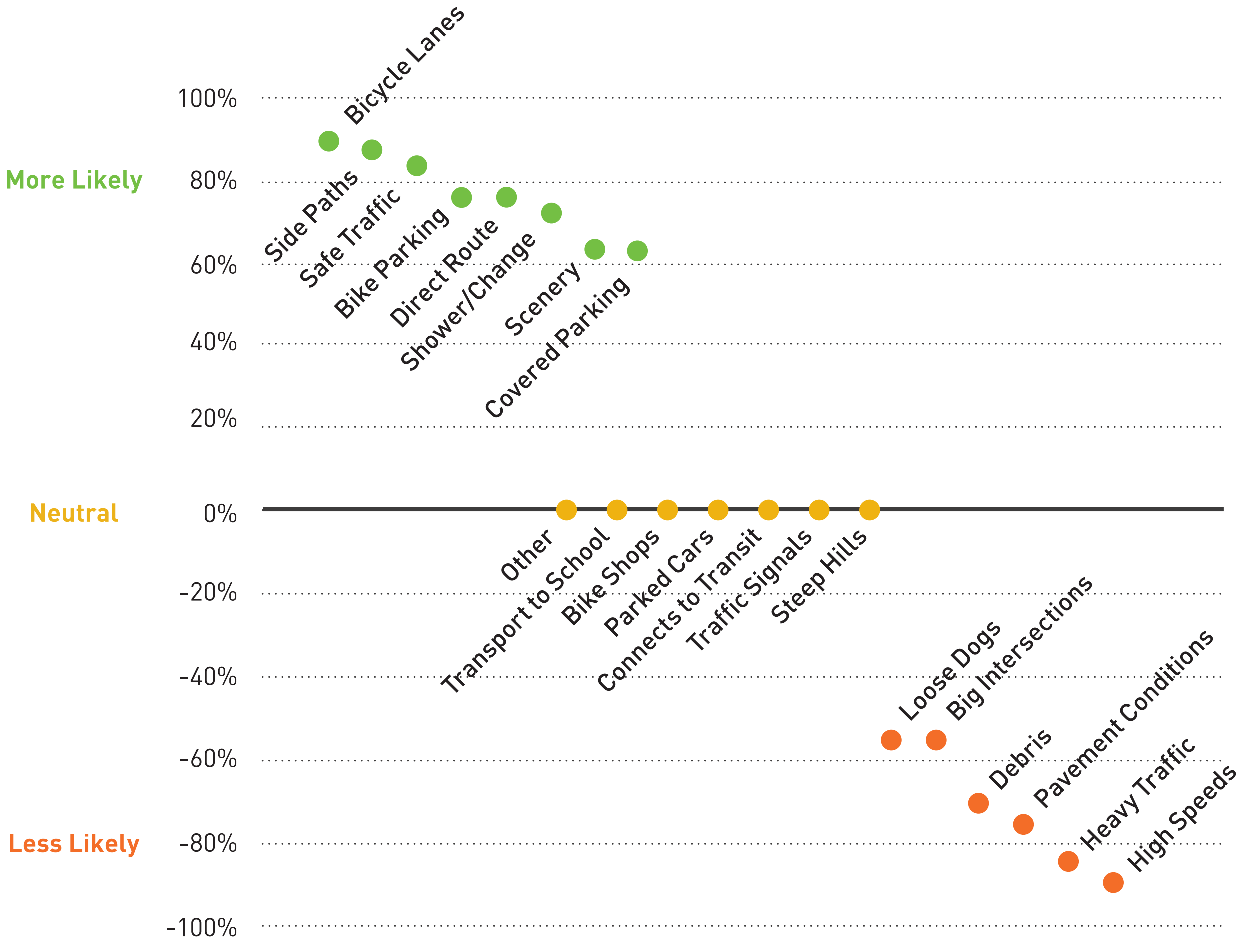
Source: ARC, 2015

BIKE SURVEY - COMMUTES
AVERAGE COMMUTE DISTANCE (MI) BY MODE

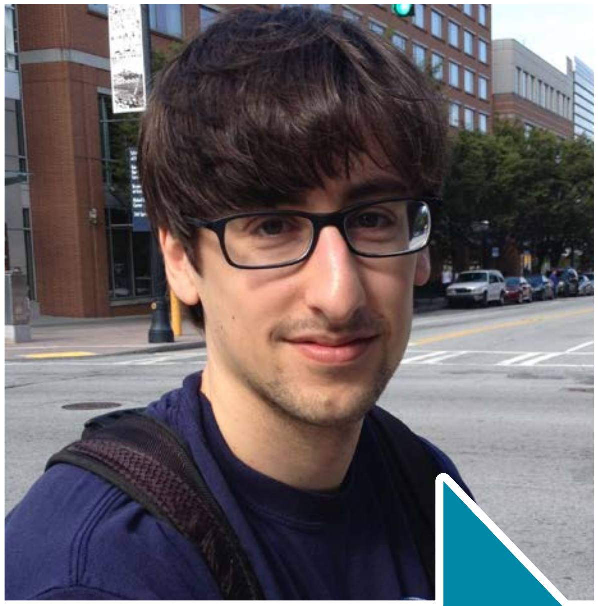


Source: ARC, 2015.

BIKE SURVEY - FACTORS
FACTORS MORE OR LESS LIKELY TO INCREASE BICYCLING FREQUENCY



Source: ARC, 2015.



> "I have a car but I don't drive to campus. Parking is too expensive and you can't park a car right next to building entrances like you can a bike at Georgia Tech. It ends up being slightly quicker to bike, door to door."

- MATT, OLD FOURTH WARD

> "I like walking when it's not too hot, but sometimes it can be exhausting."

- ROSIE, COLLEGE PARKL

> "The sidewalks are fragmented so sometimes I have to walk on the wet grass. You can tell people walk through the grass a lot because of the grass growth. We made our own walking paths."

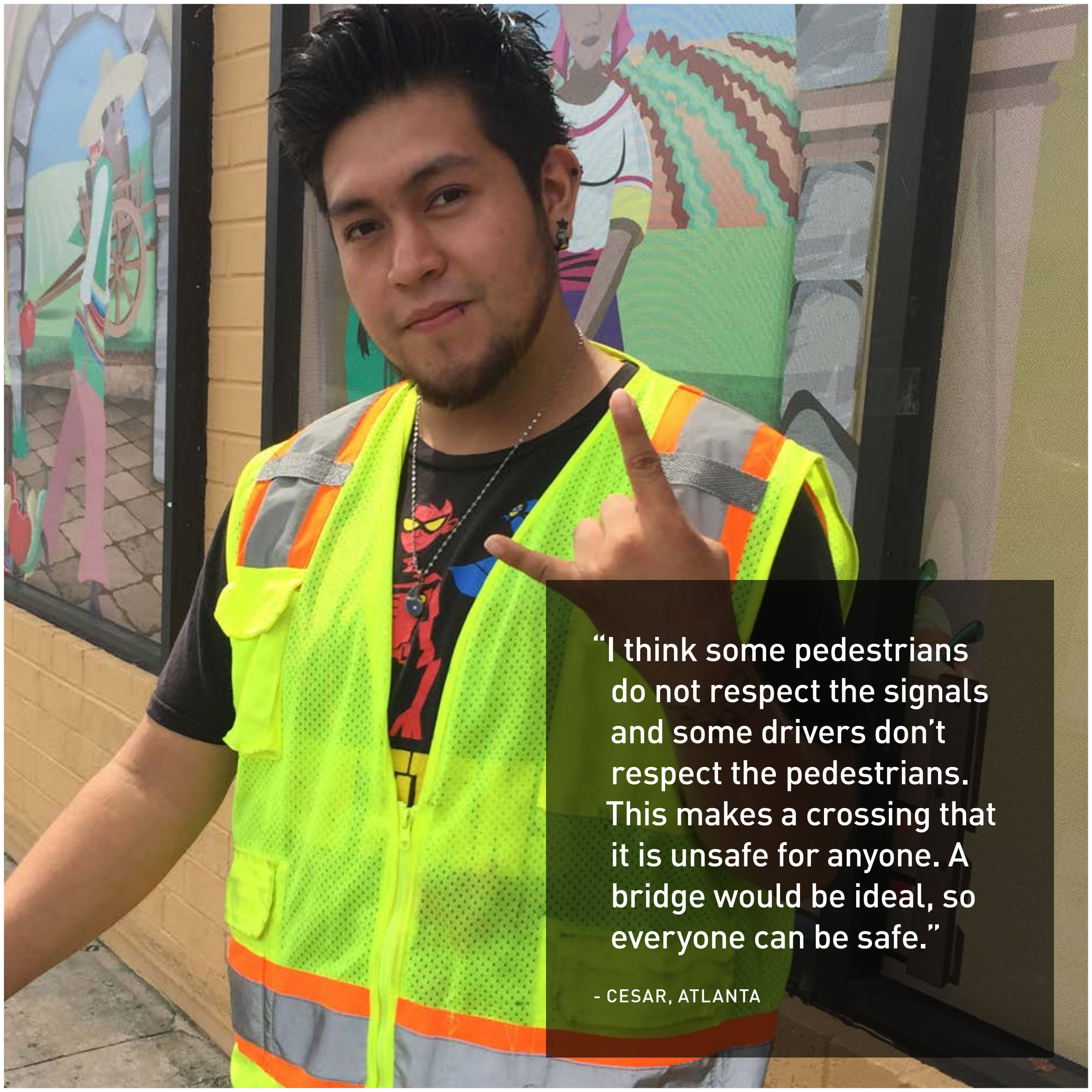
- WILLIAM, DORAVILLE

"My car broke down so I'm taking transit today. I've been riding buses and trains since I was 12 and I never minded it. It's a good way to get some exercise."

- JASPER, COLLEGE PARK

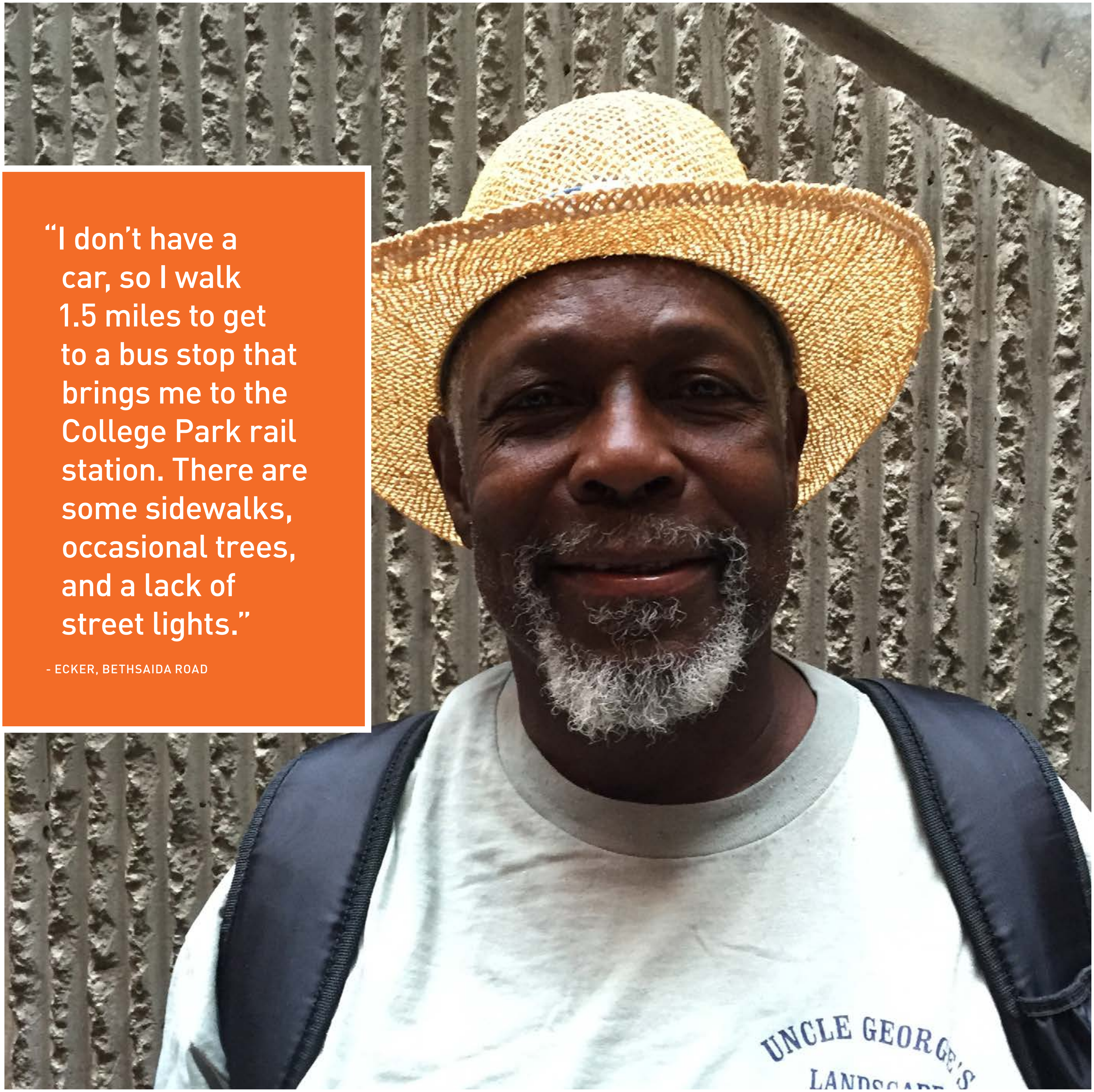
"The commuter bus has nice big seats – you can just sit back and relax. Oh – and I get a discount on my car insurance because I don't drive that many miles."

- LYDIA, JONESBORO



"I think some pedestrians do not respect the signals and some drivers don't respect the pedestrians. This makes a crossing that it is unsafe for anyone. A bridge would be ideal, so everyone can be safe."

- CESAR, ATLANTA



> “I don’t have a car, so I walk 1.5 miles to get to a bus stop that brings me to the College Park rail station. There are some sidewalks, occasional trees, and a lack of street lights.”

- ECKER, BETHSAIDA ROAD

ADVISORY GROUPS

Throughout the project, the project team met with several advisory groups including the ARC Equity Advisory Committee and the ARC Bicycle and Pedestrian Task Force. These groups provided additional input related to priorities and needs related to bicycle and pedestrian projects, policy, and programs.

Equity Advisory Committee

The Equity Advisory Committee convened on July 29th to discuss how this plan should address equitable attribution of improvements and services. Twenty-one people attended, representing a wide variety of organizations, including Georgia Stand Up; PEDS; We Love Buford; Livable Lee Street; Civil Bikes; Atlanta Bicycle Coalition; the Partnership for Southern Equity; Athena's Warehouse; Red, Bike, and Green (RBG); and the Center for Pan Asian Community Services. Other organizations who were invited could not attend and meeting materials were distributed to all invitees for comment afterwards. The meeting began with a presentation on the equity findings from Part 2: Regional Travel Pattern Assessment and then transitioned to an open discussion about the presentation and how this plan can best serve the most vulnerable populations in the region.

The following list summarizes some of the key discussion topics:

- **Equitable distribution is not the same as equal distribution.** The terms "equity" and "equality" are sometimes used interchangeably, which can lead to confusion. Equity involves trying to understand and give people what they need to enjoy full, healthy lives. Equality, in contrast, aims to ensure that everyone gets the same things in order to enjoy full, healthy lives. Leveling the playing field means that active transportation funding will need to be prioritized in areas with greater needs, rather than distributed equally based on geography.
- **Say what you mean, mean what you say: avoid putting all "minority" populations into the same bucket.** Different types of minority communities have different characteristics and needs. For example, the various immigrant communities along Buford Highway have different priorities than the African-American communities in southern Atlanta.
- **It is important to focus on better connections to job centers.** South of I-20, job centers are few and far between. In addition, many of the lower-skill jobs are moving toward the suburbs, away from transit access. Focus on adding job centers south of I-20 and make it easy to walk, bike and access transit to and from those centers.
- **Community engagement and solicitation of feedback is a sensitive subject.** Potential issues include increasing reliance on smartphone apps and mobile data, a lack of follow through, tapping into on-the-ground knowledge without follow-up or compensation, and barriers to informing agencies about problems.

Bike and Pedestrian Task Force

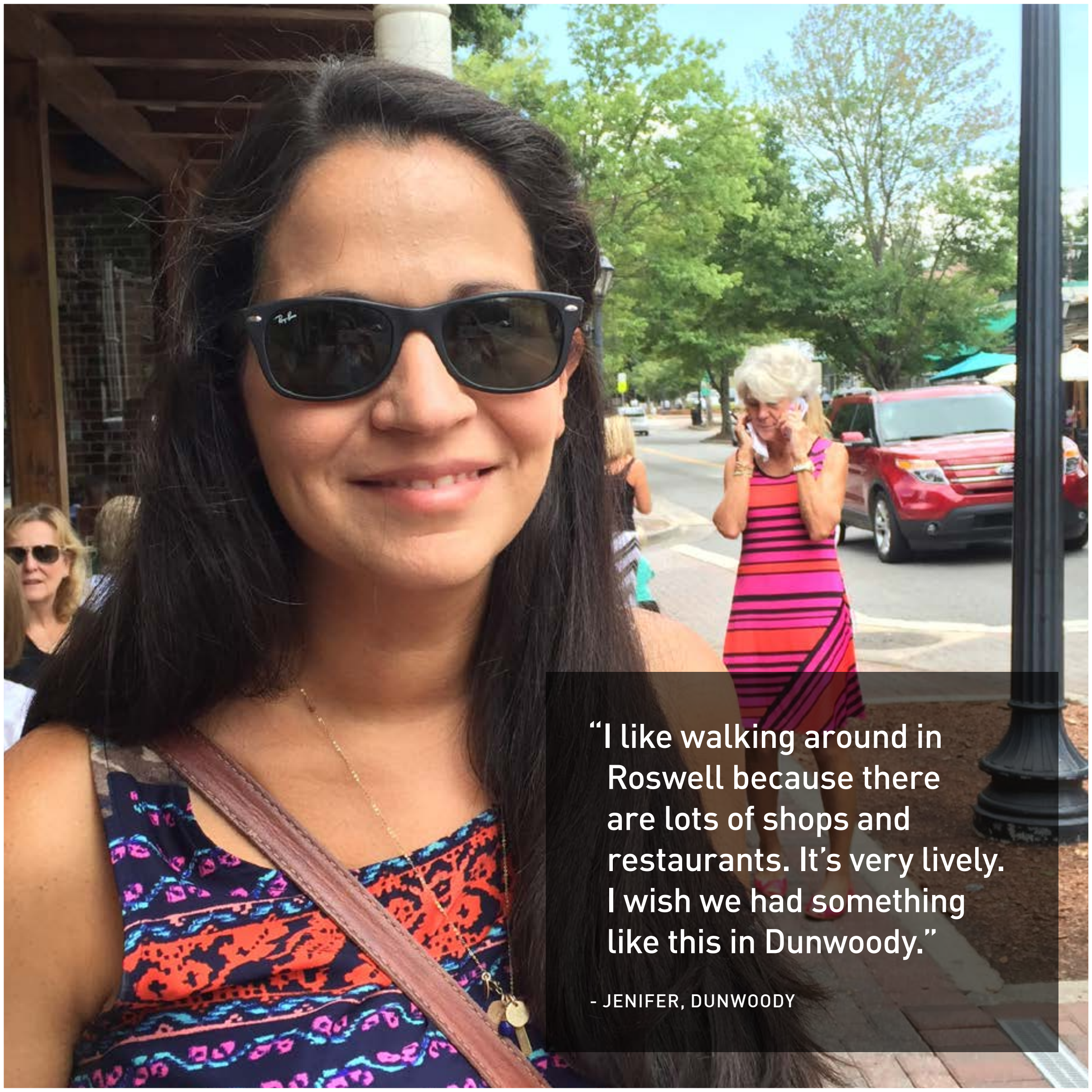
The Bike and Pedestrian Task Force is an open group that meets monthly to advise ARC. The group met on August 12 to review and provide directional guidance on the regional assessment. Roughly 22 people attended, representing government agencies, community improvement districts, advocates, and private sector consultants who work on transportation. Following a presentation of findings from Part 2: Regional Travel Pattern Assessment, the group discussed how the plan can help create local access and regional trips on trails and transit.

The following list highlights important points in the discussion:

- **The role of ARC should focus on bringing agencies together, especially when it comes to investments in transit and regional projects.** ARC should also participate in project delivery to ensure inclusion of walking and biking considerations and quality of infrastructure.
- **Focus on more sidewalks of basic quality**, not everything has to be a huge investment to be transformative.
- **The lack of inventory data on where sidewalks are makes it trickier to analyze where investments need to be.** Georgia Tech has done some research on sidewalk inventorying for the City of Atlanta and in Cobb County, but a more regional perspective would help build a more complete picture of where sidewalk gaps exist.
- **There are many corridors in the region that are served and maintained by multiple jurisdictions, agencies, transit providers, and sometimes community improvement districts**. Because of overlap or limitations of jurisdictions and resources, some corridors are in poor condition and have significant safety issues for those walking, biking, and taking transit. ARC can help facilitate coordination along these priority corridors and their stakeholders to improve safety and general walking and biking conditions.

"I rode over here to meet a friend and get some exercise in the process. I enjoy being outside. . . It would be great to see more trails and better connections between the trails we have."

- GLENN, ROSWELL



"I like walking around in Roswell because there are lots of shops and restaurants. It's very lively. I wish we had something like this in Dunwoody."

- JENIFER, DUNWOODY

"I ride to class because it's faster, and I get to skip 'leg day' at the gym."

- AASHAL, ATLANTA

> “Cycling makes you feel younger, like at Arabia Mountain when you are riding down through the middle of the woods. Rockdale County does a good job with maintenance, but the stretches of trail through other counties could use better maintenance.”

- RICHARD & DEBBIE, LILBURN

ACTIVE TRANSPORTATION PROJECT DELIVERY FORUM

The Active Transportation Project Delivery Forum was held on Thursday September 17 from 9 am to 12 pm. Over 39 people attended the forum including local government staff, CID representatives, advocates, as well as interested citizens.

Goals for the forum included:

- Sharing national trends in active transportation project delivery, including funding sources, project partners, and infrastructure types
- Providing a review of project delivery procedures at ARC for active transportation projects
- Providing an open forum for discussion to identify what is working, what could be improved, and how ARC can continue to enhance active transportation project delivery for the region
- Using input from the forum to develop a framework to fund and deliver active transportation projects more quickly and effectively with consistent and creative project delivery strategies

The forum started with a presentation by Jeff Olson, national bicycle and pedestrian expert and author of the book *The Third Mode*. Jeff shared his experience working in communities around the US on public-private partnerships and innovative implementation strategies for active transportation projects.

Jeff was followed by Kofi Wakhisi and Amy Goodwin, both with ARC. They provided an overview and update about work done by the ARC Project Delivery Task Force, which is an ARC committee working to improve project delivery of projects receiving federal funds for implementation through ARC.

After the presentations, the remainder of the forum included a facilitated, open discussion with attendees about needs and opportunities related to active transportation project delivery and implementation.

Attendees at the Active Transportation Project Delivery Forum learn discussed ways to build more and better projects that support walking and biking.

Key themes that emerged during discussion included:

- **There is a need for diversified funding strategies.** Local funds and federal funds do not cover the full need for active transportation. Opportunities exist the leverage private funds to accelerate project delivery and meet local needs.
- **There is a need to deliver projects faster.** Simple sidewalk projects can take several years to deliver when using federal funds. At the forum, there was a shared interest in continuing to use federal funds for priority active transportation projects and to be able to deliver them faster and more easily.
- **There is a need to reduce bureaucracy to deliver smaller projects, such as walking and biking projects.** Active transportation projects are typically smaller and retrofits to existing infrastructure. Requiring the same level of documentation and review process as a major roadway project can diminish already limited funds and stretch project implementation timelines longer than is necessary.
- With fewer staff and technical resources, smaller jurisdictions often struggle to delivery projects through the federally funded project process. **To manage federally-aid funded projects, GDOT requires local jurisdictions to be certified as Local Public Agencies (LPA) for Local Administered Projects (LAP).** Without sufficient professional staff to be certified, local jurisdictions much rely on GDOT to manage and deliver projects. This reliance often adds additional time and cost to projects, or in some cases has led to local jurisdictions passing on the use of federal funds for transportation projects in their community.
- **There is a desire for more public-private partnerships.** Increasingly, foundations and private businesses are seeing the value and opportunity associated with active transportation projects and their positive impact on quality of life in their community. Private funding can also help fill gaps in funding for projects or help local jurisdictions stretch their dollars further. Many in the Atlanta region are already leveraging private funds to accelerate project implementation. There was agreement at the forum that those tasked with project delivery in the region should continue to work with the business community to build active transportation projects.
- **There is a need for big regional projects.** For projects that cross jurisdictions and provide important connections that can fill network gaps, such as gaps between regional trails, there is a need for coordination with all partners and agencies. ARC can provide technical resources and coordination support to help deliver these larger, more complex projects.
- **Scoping assistance can help identify project delivery issues early in the federally funded project delivery process.** Currently, delays in project funding through ARC are often attributed to scoping issues. Additionally technical support with project scoping and scheduling, particularly for smaller jurisdictions, can help projects be delivered with fewer scope-related delays.

"I walk along Main St. to get to the station, which is pleasant because there are lots of trees and lights at night."

- ANN, COLLEGE PARK

"Atlanta needs more pedestrian-friendly areas, and should promote the benefits of pedestrian-friendly areas."

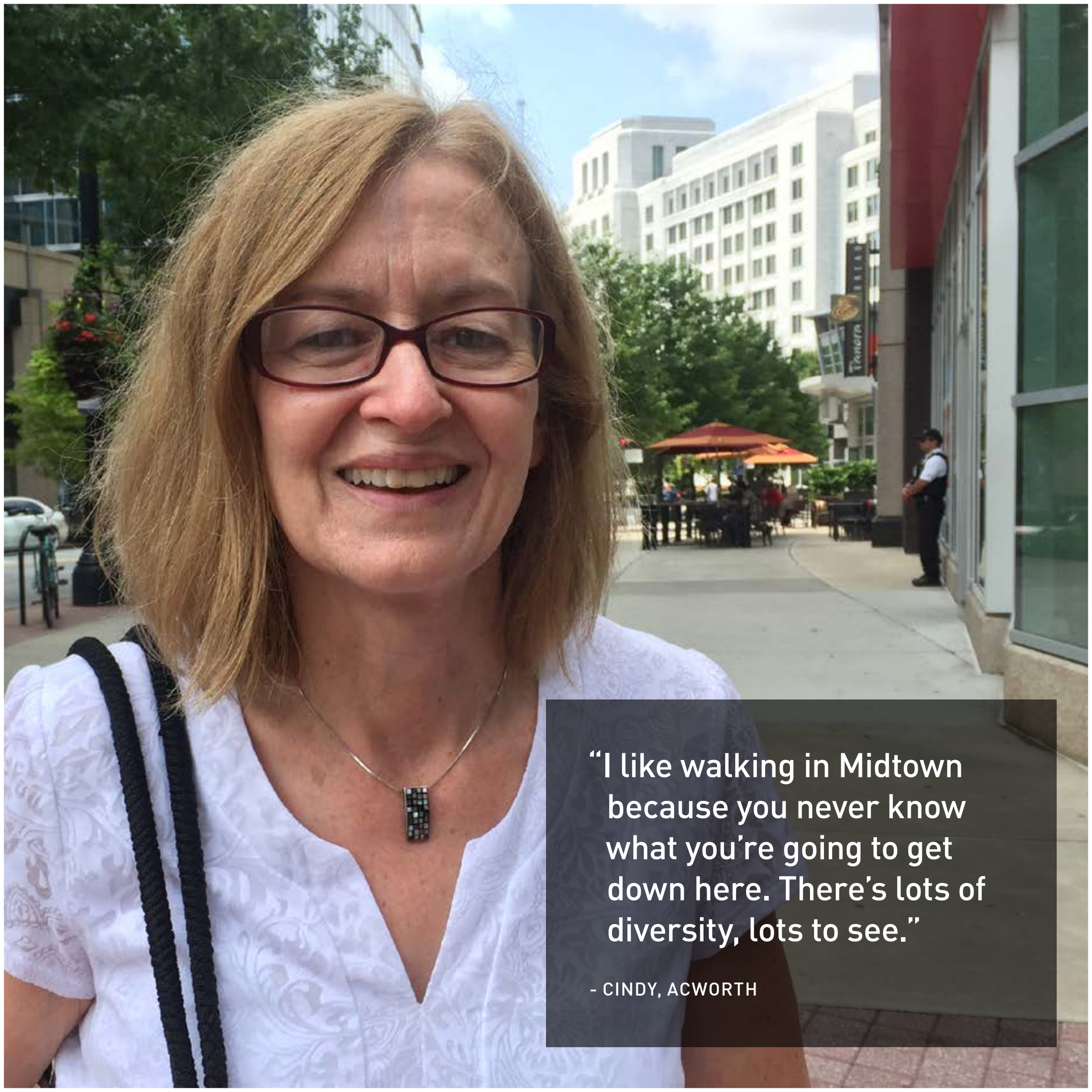
- COURTNEY, EAST ATLANTA

"I bike because it's faster than walking or driving — it's just efficient."

- ANDREW, ATLANTA

"I like walking around at my lunch hour because everything is very accessible, there are lots of people, I feel healthier, and it's quick. I'd like to see more casual street vendors along Peachtree St during the lunch hour, like King of Pop or hot dog stands."

- BLAIR, LILBURN



"I like walking in Midtown because you never know what you're going to get down here. There's lots of diversity, lots to see."

- CINDY, ACWORTH

"Taking the commuter bus is actually faster than driving because we're in the HOV lane. Plus I can read on the bus."

- ANTHONY, GWINNETT COUNTY

SIDEWALK AND HANDLEBAR INTERVIEWS

To connect regional policy and local needs to personal experience, intercept surveys were conducted at several locations around the region. Members from the planning team conducted the interviews at the following locations, which represent a variety of place typologies found throughout the region:

- Urban Trail: Eastside BeltLine Trail at 10th Street
- MARTA Rail Station: College Park MARTA Rail Station
- Commuter Bus Stop: MLK Drive and Peachtree Street
- Regional Corridor: Buford Highway
- Small Town Main Street: Canton Street, Roswell
- Suburban Activity Center: Gwinnett Place Mall
- University District: Tech Square
- Midtown Atlanta: 12th Street and Peachtree Street
- Trail of Regional Significance: Arabia Mountain Trail, by the Nature Center

The surveys focused on documenting first-person perspectives on walking and biking in the region. Overall, the project team encountered strong interest and support for improving walking and biking conditions in the region. Survey sites were selected by developing a list of areas with different walking and biking trip types. Time of day and duration for each location was selected to visit each site at the peak time to interview people walking and biking at each site.

Photos and quotes used throughout Part 3 were collected as part of the Sidewalk and Handlebar Interviews.

Eastside BeltLine Trail at 10th Street

The BeltLine interviews took place on a weekday morning between 8:30 and 9:30 am. The interviewees were either commuting or out for recreational purposes. Most lived in one of the neighborhoods adjacent to the BeltLine, but a few had driven from more distant neighborhoods. Health was a popular motivation for biking and walking, as was the BeltLine as an attraction. Respondents also indicated that they would feel more comfortable biking and walking and do it more often once the Beltline is extended. People on bikes also indicated a preference for more on-street bike lanes and protected bike lanes. People walking would like more water fountains to help deal with the summer heat. On the BeltLine specifically, several respondents noted that increasing the width of the BeltLine and/or separating fast-moving bicyclists from people walking would make the experience better.

Cesar, Buckhead: "I'm getting close to 50, so I'm out here jogging for my health . . . My favorite part about the Beltline is the way it's connecting Atlanta's neighborhoods."

Susan, Grant Park: "I ride a bike because I can get exercise while I run errands. I really like getting around using human power – no fossil fuels required."

Courtney, Inman Park: "Walking gives me energy and relieves stress – it's a great way to start the day. I enjoy the fresh air, the Magnolias, and the public art along the BeltLine."

Lindsay, Ryder, and Parker; Virginia Highland: "We love living in a walkable neighborhood because it means we don't have to get in the car anytime we leave the house."

Steve, Virginia Highland: "I enjoy the sights: nature, dogs, and smiles."

David, Old Fourth Ward: "I enjoy the freedom to go all around the city on my bike."

Genti, Midtown: "I bike to get outside and feel the fresh air"

Jerry, Piedmont Heights: "Riding to work wakes me up and when I get there, my head is clear and ready for the day."

Katie, Candler Park: "I love being able to bike my five- and eight-year old to school every morning."

Amy, Virginia Highlands: "I'd like to see more bike lanes"

Belinda, Stone Mountain: "I like seeing activity and all different types of people when I'm walking around."

College Park MARTA Rail Station

The project team talked to people who were waiting for the train at the College Park MARTA station on a weekday from 10:00 am to 11:30 am. Many of those interviewed had begun their trip by walking to a bus stop. Many of the people who walked to the bus or train stop commented that the route they took lacked sidewalks or that the stops lacked seating. In the heat of the summer, many people commented on how the lack of shade trees led to an uncomfortably hot walk.

Matose, College Park "Transit is the only way I have to get to work."

Jasper, College Park: "My car broke down so I'm taking transit today. I've been riding buses and trains since I was 12 and I never minded it. It's a good way to get some exercise."

Shaquile, College Park: "I take MARTA to work, but it's not enjoyable – too hot."

Roman, Bankhead: "The engine in my car blew up, so until I can get a new one I'm taking the train . . . It's hot out here – wish there was more shade."

Russel, College Park: "I take MARTA because it's cheaper than driving, and I like the exercise. It works for me."

Jakam, Riverdale: "The bus stop is too far from where I stay to walk or bike there, so I drive."

Kristy, East Point: "It's not a horrible walk to the bus stop – in fact it's pretty convenient. But a car would make it easier to get where I need to go."

Onela, Atlanta: "I don't enjoy walking and taking transit. Getting a car would make my experience better."

Gabriel, Timbertop Drive: "My trip consists of driving, riding the bus, riding rail, and walking."

Rosie, College Park: "I like walking when it's not too hot, but sometimes it can be exhausting."

Eric, College Park: "I like to see happy faces and good energy when I'm walking around."

Ann, College Park: "I walk along Main St. to get to the station, which is pleasant because there are lots of trees and lights at night."

Ecker, Bethsaida Road: "I don't have a car, so I walk 1.5 miles to get to a bus stop that brings me to the College Park rail station. There are some sidewalks, occasional trees, and a lack of street lights."

John, College Park: "Sidewalks make my walk to the bus stop enjoyable."

Danielle, College Park: "My walk is peaceful, but long. If there were bike lanes I would bike to make the trip quicker."

Patricia, College Park: "I live near parks, a cemetery, houses, and good sidewalks so there are lots of diverse people walking and running. I love seeing all the people and activity."

Aisha, College Park: "I'd like to see bike lanes on Old National Highway."

Commuter Bus Stop at MLK Jr. Drive and Peachtree Street

The project team spoke with people waiting for Gwinnett County Transit, Cobb County Transit, and Georgia Regional Transportation Authority commuter buses on a Wednesday between 5:00 pm and 6:00 pm. The project team asked people why they choose to take the commuter bus and asked about bicycle and pedestrian access at both ends of their trips. Almost withal respondents drove to a park-and-ride in the morning near their home and walked to the bus stop downtown. Most people said that the bus stop near their house was either too far to walk or bike or that conditions for walking or biking are dangerous. Aside from the heat and congested sidewalks downtown, most people found the walk after work to be relatively pleasant. Many respondents noted, however, that conditions at the downtown bus stop leave a lot to be desired, including shade, shelter, and comfortable seating.

Gail, Snellville (no photo): "I ride the commuter bus because it's easier – keeps my road rage under control. I drive to the bus stop near my house because it's too far to walk and there are no sidewalks."

Rodney, Douglasville: "I take the commuter bus because it saves money and I don't have to worry about traffic. We need more crosswalks between intersections downtown."

Marr, Gwinnett County: "I like the commuter bus because it saves money on parking and I can sit back and relax."

David, Gwinnett County: "I take the commuter bus because it avoids wear and tear on my car. It's less stressful, and you don't have to deal with traffic."

Fay, Snellville: "I ride the commuter bus because I hate driving and trying to park in downtown Atlanta."

Anthony, Gwinnett County: "Taking the commuter bus is actually faster than driving because we're in the HOV lane. Plus I can read on the bus."

Margaret, Snellville: "The commuter bus is cheaper than driving and I don't have to deal with traffic."

Lydia, Jonesboro: "The commuter bus has nice big seats – you can just sit back and relax. Oh – and I get a discount on my car insurance because I don't drive that many miles."

Mark, Snellville: "I take the express bus because it's relaxing and subsidized by my employer."

Hynecia, Douglas County: "The express bus is relaxing and saves gas."

Buford Highway

Buford Highway is a multi-lane arterial with very challenging pedestrian conditions. Recent safety initiatives and new infrastructure, such as sidewalks and enhanced pedestrian crossings, have helped improve walkability and safety along the corridor. The project team interviewed people walking to and waiting for the bus at two locations along Buford Highway, one of which recently had new midblock crossings installed to help those walking along the corridor cross more safely and frequently. Interviews were conducted in Spanish and English.

Michel, DeKalb County: "I take the bus because it's more convenient than driving – it takes me right to the Lindbergh MARTA station."

Jay, Brookhaven: "I walk to the market to stay fit. That way I don't have to go to the gym. The new sidewalks, medians, and crosswalks out here have made a big difference – makes it much safer and easier to get across Buford."

Maurice, Lenox Rd: "I walk and take transit because I don't own a car. My walk is nice, but it would be better if there were sidewalks along Buford Hwy and more shelters at bus stops."

Nikki, Southwest Atlanta: "I usually drive, but I wrecked my car so I'm using transit for a while. It's convenient because I catch the bus right outside of my apartment complex, and I often have seating and shelter at different bus stops I need to go to. If my car was working, I'd still drive because it takes over twice as long to take the bus, and that's with the app telling me when the bus will come."

Renee, Briarwood Rd: "Transit and walking are my only forms of transportation. It would be easier for me if there were sidewalks and crossings in my neighborhood like they've put in on Buford Highway. In my neighborhood, you have to walk in the grass or street, and jaywalk to cross."

Andre, Briarwood Rd: "I've noticed a difference in how people are driving ever since they've put the sidewalks and medians on Buford Highway. When I have my daughter with me now, we are able to cross and wait in the median for another break in the traffic."

Terrance, Briarwood Rd: "I find walking peaceful."

John, Fairburn: "My walk to the bus stop is hot, and I have to walk in a grass path."

Doris, Shallowford Road: "I would like for drivers to slow down."

Greisy, Doraville: "I would like to see more sidewalks on other areas of Buford Highway, similar to the Briarwood Road intersection."

Jacinto, Doraville: "I like that the signals are clearly marked and it is clean of debris."

Felix, Brookhaven: "I like that it is safe around this area but connecting streets to not have enough light at night. The experience is limited to this intersection only."

Mayra, Atlanta: "Sometimes the speeding cars don't care to stop when it is the pedestrian's time to cross the street."

Julian, Atlanta: "It would be better if there were sidewalks on both sides and a bus stop with a bigger shelter in case it rains."

William, Doraville: "The sidewalks are fragmented so sometimes I have to walk on the wet grass. You can tell people walk through the grass a lot because of the grass growth. We made our own walking paths."

Ismael and Mario, Doraville: "It would be nice to have more access to the mall. There is only one big 'walkable' entrance to the mall, which is in the middle of the street where cars need to turn too. Sometimes car are rushing and they don't even look to see who is walking around. They don't respect the walking signals."

Cesar, Atlanta: "I think some pedestrians do not respect the signals and some drivers don't respect the pedestrians. This makes a crossing that it is unsafe for anyone. A bridge would be ideal, so everyone can be safe."

Christina, Chamblee: "I wish there were more sidewalks so I can take transit and bring my children."

Canton Street, Roswell

Canton Street is well known throughout the region for its friendly streets and lively, family-oriented atmosphere. For these reasons, among others, Canton Street generates lots of walking activity throughout the week. Of the people interviewed, all were walking and several said they ride bikes often. Interviews were done around the lunch hour on a Thursday, so there were many people coming to dine at one of the area's many restaurants. People said they like to come to Canton Street because there are lots of shopping and dining options within close proximity of one another, so you only have to get in and out of your car once. Mature street trees provide cover and shade during the hot summer. Also, there's a strong walking culture so drivers are respectful of people crossing the street.

Glenn, Roswell: "I rode over here to meet a friend and get some exercise in the process. I enjoy being outside . . . It would be great to see more trails and better connections between the trails we have."

Britt, East Cobb: "I like walking around in this area. I like the independent restaurants and local businesses. Unfortunately, we live far enough away that we have to drive over here to walk around, so more parking would make it more convenient."

Kristen, Alpharetta: "I love walking around in the historic part of Roswell - it reminds me of my home town . . . It would be great if there were more bike lanes – I mostly ride on the sidewalk because I don't feel safe riding on the street."

Barrett, Roswell: "We have marked bike routes in Roswell where you can ride on calm residential streets, but we need bike lanes or paths on the major roads. I would ride more often if it was easy and comfortable."

Jack, Smyrna: "I wish there were more places like the Silver Comet Trail for me and my two boys to ride. I'd walk and bike more if there was better transit in Cobb County."

Pat: "This is my version of coming into the city. Walking around on Canton St is nice because there a lot of crossings with signs telling drivers to stop.

Sunni, Alpharetta: "I just moved here from Bedford, Texas. This place is such a treasure; we had some areas like this in Texas, but they were all far away."

Dana & Diane, East Cobb & Kennesaw: "We come here for the shops and restaurants, and the liveliness on the weekends."

Haley & Patsy, Marietta: "We like coming to shop here because you have access to a bunch of stores without having to get back in your car. We'd like to see more separation between cars and the sidewalk, and more parking options."

Jenifer, Dunwoody: "I like walking around in Roswell because there are lots of shops and restaurants. It's very lively. I wish we had something like this in Dunwoody."

Brian, Woodstock: "Suburbanites are moving more toward developing these walkable downtowns. The 'burbs are starting to create these little 'pop-up main streets.' They are kitschy and a little overpriced, but they add a much needed splash of livability."

Laury, Roswell: "People think I'm crazy, but I love cycling. I like the off-street paths and trails, but I also bike on the arterials roads, like Atlanta St and Rt. 120, if I have to. I wish those roads had larger shoulders. The drivers in Roswell are friendlier to cyclists than where I lived before, in Cumming. There should be more driver awareness campaigns about cycling."

Gwinnett Place Mall

The Gwinnett Place Mall is at the heart of the Gwinnett Place Community Improvement District. Gwinnett Place Mall is in a very auto-oriented area and surrounded by a large parking lot. The mall is served by transit, with a bus station on the edge of the parking lot. There is very little in the way of walking and biking infrastructure around the mall. In some communities without a downtown, the mall can provide an atmosphere that shares many qualities of a downtown, such as proximity to many destinations and pleasant walking environment. On a Thursday afternoon, members of the project team spoke with several different mall visitors who were there for activities such as shopping, recreational walking, and participating in a seminar. Some specifically visit the mall to walk for exercise because it offers a safe and comfortable place to do so. Others interviewed said they are interested in walking, biking, and taking transit more often, but cited lack of walking and biking infrastructure, stressful roadway conditions, long distances between destinations, and lack of frequent transit service as major barriers.

Ron, Buckhead: "I like walking around in this mall because it's quiet and relaxing. I've never thought about walking to the mall because it's designed around cars – if I walked I'd have to go through a bunch of boring, ugly parking lots. I like to walk where it's scenic or where there are interesting things to look at."

Shanay, Norcross: "I can't think of anything that would make me want to walk or bike. I don't like to walk."

Bo, Duluth: "I would think about walking or biking if the roads were set up for it – like in Amsterdam they have huge wide bike paths that thousands of people use at all times of the day. But here the roads are made for cars."

Chris, Duluth: "I might bike if other people here did. The culture here doesn't really support biking for transportation like in some other places."

Paul, Norcross: "I would take the bus to the mall if the bus came more often. But when a trip takes 10 minutes driving but two hours on transit with transfers why would I take the bus? Doesn't make any sense."

Anna, Lawrenceville: "If there were sidewalks everywhere I would probably walk most of the time, but there are no sidewalks where I live."

James, Dunwoody: "I would think about walking to the mall if it were closer . . . we need more sidewalks in Dunwoody."

Alexander: "I walk to Kroger because it's close to my house, but there are no sidewalks on the main road. I would walk to more shops if they were within walking distance."

Usha, Duluth: "I come to Gwinnett Place Mall and Perimeter Mall to walk for exercise. It's pleasant: cool, open, few disturbances. I don't like to walk on the street because it's hot, noisy, and there's a lot of traffic. Plus, I don't see anyone else walking."

Stan, Clarksville: "I would bike as much as 5 miles to get to work, but I have to drive 50 miles on average. I would bike to the shopping center too if it were within 5 miles, unless I had to get something big. I wish there were more bike lanes, I don't like to bike on the street."

Tech Square

Tech Square, as the gateway between Georgia Tech's campus and Midtown, is regularly busy with students, campus faculty and staff, and professionals working in the area. The project team interviewed people walking and biking on a Friday morning. Lots of people interviewed here said they bike because it is the fastest, easiest, or most efficient way to get around.

Aashal, Atlanta: "I ride to class because it's faster, and I get to skip 'leg day' at the gym."

Andrew, Atlanta: "I bike because it's faster than walking or driving – it's just efficient."

Matt, Old Fourth Ward: "I have a car but I don't drive to campus. Parking is too expensive and you can't park a car right next to building entrances like you can a bike at Georgia Tech. It ends up being slightly quicker to bike, door to door."

Daniel, Old Fourth Ward: "I bike because I'm still learning to drive, although I've had my learner's permit for three years now and I'm really not in a rush to get my license. I don't really like cars and feel safer on a bike."

Ryan, Midtown: "Atlanta's come a long way in a relatively short period of time in terms of bike access, but it still has a long way to go. We need better bike lane design that gets people in bike lanes out of the door zone of parked cars and works better with buses. People also need to stop parking in the bike lanes."

Mike, Midtown: "I like riding a bike because I feel more connected to my neighborhood – it's hard to be unhappy on a bike."

Arthur, Midtown: "I bike because it saves time – I get where I need to go while getting exercise."

Arthur, Downtown: "Commuting by bike is less expensive than driving and more convenient than taking transit. . . I'd like to see better education and awareness for drivers and pedestrians so that we're all on the same page about everybody's rights and responsibilities."

Rohan, Georgia Tech: "Biking is the fastest and most convenient way for me to get from home to the business school. I love going home after class because it's all downhill, very relaxing. Sometimes it can be uncomfortable when drivers behave badly and honk."

Suzanne, Georgia Tech: "The Tech Trolley isn't convenient from where I live, and there are nice sidewalks so walking is the best option for me to get around campus."

Ben, Home Park: "Walking is my only option. I don't have a bike, though I am interested in getting one. The streets seem busy but you never forget how to ride a bike so I'll give it a try. Some of the intersections, like at 5th St and Williams St, have too many cars. There should be a pedestrian overpass or something there."

Samee, Home Park: "My trip from home to class isn't far, so walking isn't a big deal. It's the fastest option; less congestion, less hassle, less expensive. Sometime construction and maintenance projects can be a disruption if they force you to take a detour."

Christian, Georgia Tech: "It's not worth maintaining a car on campus. Walking gives me a chance to listen to music and clear my head. It's relaxing and helps me think. I'd prefer better timing for pedestrian signals at intersections."

Bobby, Georgia Tech: "I bike because it's faster than walking, and I haven't figured out the Trolley routes yet. I love biking to save time. I'm comfortable riding on campus because there are bike lanes and plenty of space. There are also plenty of bike shops and places I can get maintenance done."

Germain, West End: "For me, biking is the easiest option. Plus, it's free! I like to bike on the slower, quieter streets. If I could change one thing, it'd be the potholes in the West End."

Katie, Roswell: "Wide sidewalks make walking on campus feel safe."

Midtown Atlanta–12th Street and Peachtree Street

Midtown is a major employment, residential, and entertainment district in the region. Peachtree Street is the premier destination corridor through Midtown and is also surrounded by plentiful housing, which creates a good mix of users walking and biking. During lunch hour on a Friday, the project team spoke with several people walking and biking, most of whom were people who work in the area and were walking to get lunch or some exercise during their break. People said they like the close proximity of many shops and restaurants and the wide sidewalks make it convenient to walk to get lunch, or just for a breath of fresh air to break up the work day.

Katie, Midtown: "I walk to work every day because it's nice to be outside, get exercise, and feel a part of the community."

Adam, Atlanta: "I just like biking – it's freeing. . . Atlanta needs more bike lanes – and not half-ass bike lanes that suddenly drop without warning. We also need better education and awareness because lots of drivers here seem to think people aren't allowed to bike on the road when it's actually the opposite: it's illegal to ride a bike on the sidewalk."

Sarah, Virginia Highland: "I walk and bike because it's an opportunity to be outside breathing fresh air, it's practical transportation, and it's good exercise . . . Atlanta needs more bike lanes and also needs to keep the ones we have free of debris . . . [the] 10th Street [2-way protected bike lane] is great – we need more streets like that."

Chris, Brookhaven: "Being able to walk across the street and grab lunch without getting in my car is really convenient."

George, McDonough: "I just like being outside."

Michelle, Lithonia: "I like to run. I enjoy being free, outside."

Kayla, South Fulton County near the airport: "I enjoy the health benefits of walking – not just the physical health benefits also the mental health benefits. I like taking in the sights and sounds around me . . . It's nice to walk in Midtown but in South Fulton we need wider sidewalks that don't stop all the sudden."

Ty, Inman Park: "I like to walk because it's a way to get to know my neighbors . . . Walking in Atlanta would be more enjoyable if there were fewer parking lots and more people on the streets. If public transit was better I would go for fewer strolls but more purposeful walks to destinations."

Courtney, East Atlanta: "Atlanta needs more pedestrian-friendly areas, and should promote the benefits of pedestrian-friendly areas."

Johnathan, Tucker: "I like to get out of the office and walk around the block. I like the fresh air."

Will, Vinings: "I like walking to lunch because it's a chance to stretch my legs."

Delilah, Buckhead: "Walking is therapeutic, and it's much better than going to the gym . . . Atlanta could use more trails and more bike paths on major streets."

Matthew, Downtown Atlanta: "I'm a currier and love getting paid to ride my bike. During the day, I like to use the one way roads through town when there's less traffic, but at rush hour, those drivers getting on and off the highway are more aggressive. During rush hour, Peachtree St is better for biking, but during the day it's tough because of all the idling delivery vehicles."

Cindy, Acworth: "I like walking in Midtown because you never know what you're going to get down here. There's lots of diversity, lots to see."

Anonymous, Buckhead: "I like that I don't have to get back in my car to get lunch; I can easily walk to all of the shops and restaurants. I would be more comfortable biking if there were bike lanes; that's probably what everyone says."

Blair, Lilburn: "I like walking around at my lunch hour because everything is very accessible, there are lots of people, I feel healthier, and it's quick. I'd like to see more casual street vendors along Peachtree St during the lunch hour, like King of Pop or hot dog stands."

Jack, West Side: "Even though I drive to work, I like to walk to get lunch because there are a lot of places to go near the office. I could imagine biking to work if the roads were friendlier. I'm just too lazy."

Cheryl, Midtown: "I moved to Midtown to be able to walk and bike more. The availability of shopping and dining options, access to transit, shuttle to Atlantic Station, and BeltLine make walking in Midtown a wonderful experience. My goal is to use my car as little as possible. Biking is still uncomfortable, but I'd feel safer if there were bike lanes along Peachtree St."

Joanne, Marietta: "I like to be able to get out and walk around at lunch instead of sitting all day. Midtown is good for that because there are wide sidewalks and more restaurant options than other areas I've worked."

Dale & Ashley, Midtown: "We live here, and walk around because we feel healthier, it's safe, and it's easy to get around on foot. The BeltLine is great, but we'd like to have more bars and restaurants along it."

Lauren, Decatur: "I walk from my office to get lunch when I need to because it's quicker than driving. There are good crosswalks which makes it safer."

Arabia Mountain Trail (at the Davidson-Arabia Mountain Nature Center)

The Arabia Mountain Trail is located in southeast DeKalb County and is a part of the growing network of trails of regional significance in the region. The project team visited the Davidson-Arabia Mountain Nature Center Trailhead along Klondike Road, which has a large parking lot, a nature center, and a picnic table area. On a Saturday morning, the trail was busy with weekend recreational users finishing up their workout for the day. Interviewees were generally happy with the trail, but called for better maintenance of restroom debris. Walkers and bikers said they visit the trail to enjoy the peace of nature and be healthy.

Jim, Conyers: "The County should put more effort into keeping the trail clear of debris after storms."

Gwen, Woodstock: "I bike every weekend, mostly on the Arabia Mountain Trail, to maintain an active lifestyle and stay young."

John, McDonough: "I cycle everyone weekend for exercise and recreation, on trails like the Arabia Mountain Trail and the Silver Comet Trail. I like the Arabia Mountain Trail because it's a nice, paved trail that has a decent amount of elevation changes."

John, DeKalb County: "We had planned on going to the Mall at Stonecrest, but when we saw that it was closed we came here instead since it is so close. My kids loved seeing the wildlife."

Marilyn, Covington: "I drive further to get to this entrance because there are lots of people, which makes me feel safer."

Barb, Emory: "I like coming out to bike on trails, but I wouldn't bike around where I live because of the traffic and high speeds."

Laquoya & Krystalline, Stone Mountain: "The trail is a peaceful place to get healthy."

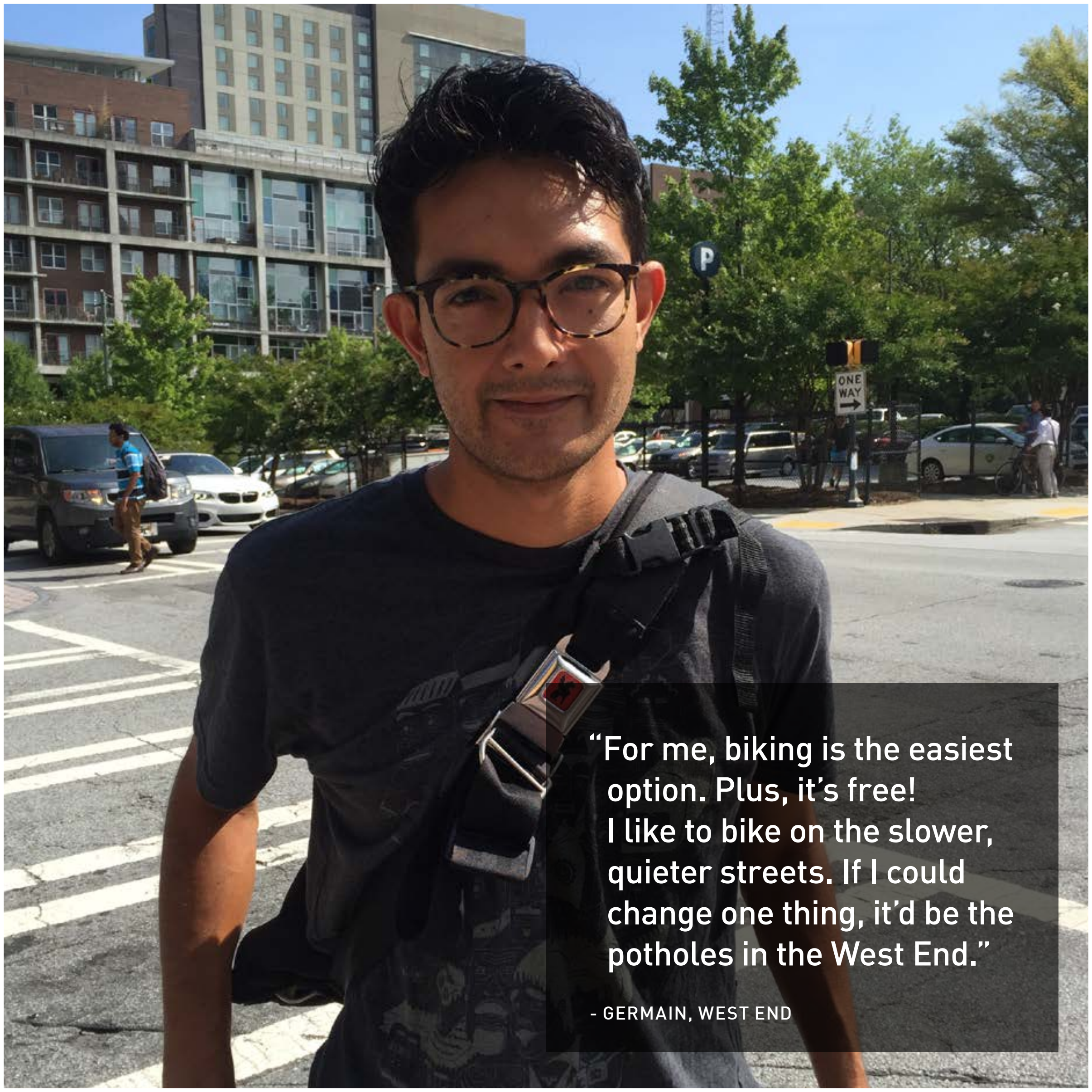
Sheldon, Lithonia: "I'm motivated to come here to bike because it's close to where I live, plus it's nice to see the scenery and nature."

Tommy, Covington: "The Arabia Mountain Trail is great because I am in nature and away from car traffic. I'd like to see it extended, maybe back toward Conyers."

Richard & Debbie, Lilburn: "Cycling makes you feel younger, like at Arabia Mountain when you are riding down through the middle of the woods. Rockdale County does a good job with maintenance, but the stretches of trail through other counties could use better maintenance."

Marvin, Stone Mountain: "Recently, I've been cycling every morning before work. It makes me feel healthier and more awake when I get to work."

> “My walk is peaceful, but long. If there were bike lanes I would bike to make the trip quicker.”
>
> - DANIELLE, COLLEGE PARK



> “For me, biking is the easiest option. Plus, it’s free! I like to bike on the slower, quieter streets. If I could change one thing, it’d be the potholes in the West End.”
>
> - GERMAIN, WEST END

> “I enjoy the sights: nature, dogs, and smiles.”
>
> - STEVE, VIRGINIA HIGHLAND

ATLANTA REGIONAL COMMISSION

40 COURTLAND STREET, NE | ATLANTA, GA 30303
404.463.3100
ATLANTAREGIONAL.COM

A SUPPLEMENT TO *WALK.BIKE.THRIVE!*

BIKE TO RIDE:

AN IDEA BOOK OF REGIONAL STRATEGIES FOR IMPROVING BICYCLING ACCESS TO TRANSIT

ATLANTA REGIONAL COMMISSION

PRODUCED BY:
alta
PLANNING + DESIGN
WITH SUPPORT FROM:
URBANTRANS
NORTH AMERICA

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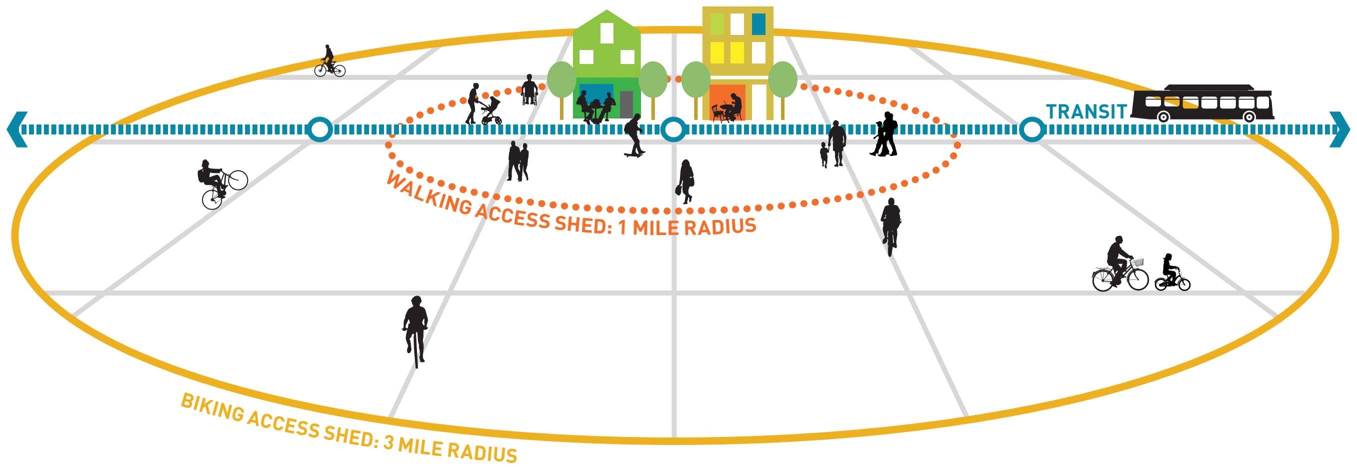
Metropolitan Atlanta Transit Authority North Ave Station, Atlanta, GA

INTRODUCTION

Making it easier for people to combine bicycling and transit can improve access to jobs, contribute to healthier lifestyles, reduce personal and household transportation costs, and increase transportation choice.

This document is a collection of bike-to-transit access and parking solutions that respond to common challenges experienced by transit providers and local jurisdictions in the Atlanta Region.

TRAVEL SHEDS:
AN ORGANIZING PRINCIPLE


TRANSIT
WALKING ACCESS SHED: 1 MILE RADIUS
BIKING ACCESS SHED: 3 MILE RADIUS

Now and in the future, transit serves as the "spine" of the regional active transportation system for trips outside walking and biking access sheds.

INTRODUCTION

BIke to Ride: An idea book of regional strategies for improving bicycling access to transit advances one of 5 key strategies outlined in *Walk.Bike. Thrive!* to increase the share of trips made on foot or by bike:

"Work closely with transit providers to a) **improve access to transit stops** and b) improve the quality and quantity of transit service between mode shift opportunity zones **so walking and bicycling can be easily combined with transit for longer regional trips.**"

This document strives toward the following four goals as a means to advancing this vision:

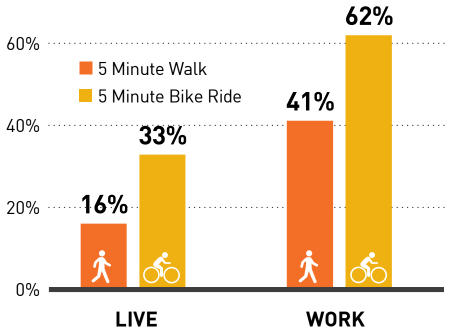
- **Improve roadways around transit** stops and stations
- **Improve access to transit** system at stops and stations
- **Mitigate transit and bikeway conflicts**
- **Improve bike parking at transit** stops and stations

In 2016, the Atlanta Regional Commission adopted a comprehensive regional vision for improving walking and bicycling titled *Walk. Bike. Thrive!* The plan envisions a future where the region is comprised of a series of walkable and bikeable neighborhoods connected by regional transit service.

The Conceptual Regional Walking and Biking System described in the plan acknowledges the critical role of transit in extending the range of bike trips and serving as the "spine" of the regional system for longer trips. The concept is rooted in an understanding of how people make mode choice decisions and observed trip distances for walking, bicycling, and transit trips in the region.

This study builds on *Walk.Bike. Thrive!*'s first organizing principle: a focus on short trips will allow the region to maximize the benefits associated with more walking and biking. At the regional scale, leveraging the benefits associated with higher walking and bicycling mode share means 1) prioritizing active transportation investments in parts of the region where land use and transportation networks naturally support options for short trips; and 2) ensuring that the regional system facilitates seamless transitions between active transportation and other modes, such as transit and driving, which are better suited to longer trips.

REGIONAL POPULATION AND EMPLOYMENT PROXIMITY TO TRANSIT



Source: 2010 US Census and ARC

REGIONAL ACCESS TO TRANSIT BY MODE

Mode of Access to Transit	To Transit	From Transit
Walked	72.4%	80.6%
Dropped off	14.0%	8.6%
Drove alone	10.6%	8.6%
Rode in vehicle then walked or biked	1.8%	1.1%
Carpool or vanpool	0.9%	0.9%
Bicycle	0.3%	0.3%

Source: Regional On-Board Transit Survey Final Report (2010)

CURRENTLY,

33%

OF THE REGION'S POPULATION LIVES WITHIN A 5 MINUTE BIKE RIDE OF A TRANSIT STOP

BUT ONLY

0.3%

OF PEOPLE ACCESS TRANSIT BY BIKE

PROBLEM STATEMENT

Walk.Bike.Thrive! documented that while a full third of Atlanta region residents live within a 5 minute bike ride of a transit stop, only 0.3% of people ride their bikes to or from transit stops. This finding highlights the fact that there are tremendous opportunities, as well as serious challenges, associated with increasing rates of bike-to-transit trips.

Rates of biking to and from transit stops are low in large part due to **challenging conditions for bicycling along many of the major corridors that connect to transit**, and a **lack of adequate bike parking at transit stops.** There are also a **psychological barriers:**

- MODE SWITCH LOGISTICS
  In a similar way that having to make a transfer may deter people from choosing transit for a given trip, having to switch from biking to a bus or train partway through a trip—including the mechanics associated with having to lock up one's bike and/or bring it with them on a transit vehicle — are likely to be unfamiliar and may feel overly complex.
- ANNOYANCE THRESHOLDS
  In addition to traffic stress tolerance, people also have a threshold for the cumulative amount of discomfort and inconvenience they encounter when attempting to combine a bike trip with a transit trip. This includes seemingly minor details such as a lack of shade trees on a hot summer day, short sections of a route where pavement quality is poor, vehicles parked in bike lanes, a lack of curb ramps leading up to a bus stop or rail station, or bike parking placement that makes locking up one's bike cumbersome.
- TRAVEL TIME BUDGETS
  Depending on the trip distance, trip type, and travel time relative to driving, combining a bike trip with a transit trip may exceed the amount of time they are willing to spend traveling to arrive at a given destination.

Encouraging multi-modal trip chaining, and in particular the combination of biking and transit, is challenging in light of these barriers. Moreover, it's unlikely that many people would consider combining a bike trip with a transit trip the "ideal" way to get anywhere.

WHO ARE WE PLANNING/DESIGNING FOR?

Potential user group	Barriers to selecting preferred mode	Priority Need
People who prefer transit	- Transit stop is not in walking distance	Low-stress bicycling facilities that connect to transit stop
People who prefer biking	- Desired trip is too long/hilly - Weather is not conducive to bicycling - A link in the trip exceeds user comfort level	Long-term, secure bicycle parking at transit stop and Low-stress bicycling facilities that connect to transit stop
People who prefer driving	- Under 16 years old - Driving is too expensive	Safe bicycling facilities that minimize delay to/from transit stop

Most people that are willing to consider riding a bike to the bus or a train likely fall into three categories:

1. People who would ideally prefer to make a short walking trip to transit, but their origin/destination is too far from the stop for this to be practical. A significant portion of these potential users are likely "Interested but Concerned" about biking and require a low stress bikeway to the transit stop – I.e. not just bike lanes on a busy street.

2. People who would ideally prefer to bike for the full duration of their trip, but their trip is too long, too hilly, or the weather isn't conducive to bicycling on that day. Many of these potential users may be enthusiastic and confident or interested but concerned bicyclists that demand secure long-term bike parking to protect their bike.

3. People who would ideally prefer to drive, but rely on transit to access the places they need to go on a daily basis. Neither transit nor bicycling may be this group's first choice, but they may ride a bike to a transit stop because walking distances are unreasonably long, because they are too young to drive, or because car ownership is not economically viable or efficient for them. The focus for these users should be on ensuring safe access with minimal delay.

PROPOSED SOLUTIONS

Making biking to transit an attractive alternative to driving requires overcoming a significant set of physical and psychological barriers. To make biking to transit a competitive option to driving, facilities that connect to transit and allow people to store their bicycles at transit stops must be held to a higher standard than is currently typical in the Atlanta region.

This means focusing on providing a truly world-class user experience, with **direct, low-stress bikeways** that minimize delay while meeting the needs of all ages and abilities. It also means providing **convenient, secure bike parking** at high-ridership bus stops, park and ride lots, and rail stations.

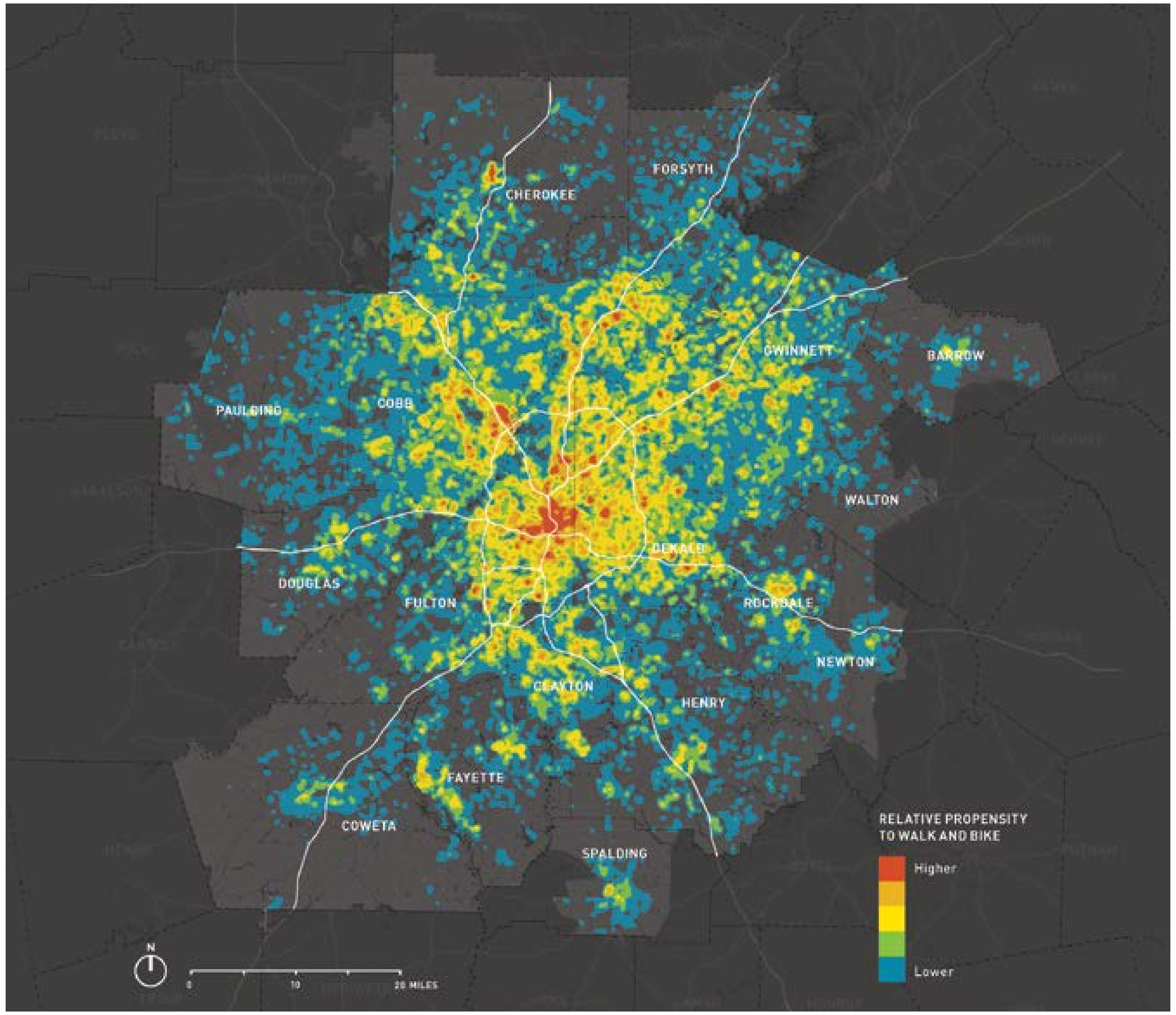
The guidance and solutions contained in this idea book, therefore, are intended to set a high standard for bike-to-transit access and bike parking solutions in the Atlanta region.

HOW TO USE THIS DOCUMENT: ACCESS TO TRANSIT

The application guidance associated with each bike access to transit idea is meant to inspire action, give general design and application guidance, and provide links to additional information from trusted sources. It is not intended to be a comprehensive facility design guide.

ROADWAY TYPE

The collection of roadways and multimodal facilities in a community creates a network that connects people bicycling to transit. There are varying levels of comfort associated with different roadway types, ranging from local, primarily residential streets to commercial arterial roadways. The quiet neighborhood streets are often most comfortable for people on bicycles. However, bus service, rail stations and park and ride lots are generally located on the major multi-lane collectors and arterials that are more challenging for bicyclists. Successful networks include bikeways that provide appropriate separation between bicyclists and vehicle traffic, with equitable access regardless of income level.



Walking and Biking Propensity (Walk.Bike.Thrive! Part 2 pg 24-25) is one of the factors to consider when selecting the appropriate bikeway type.

SPEED AND VOLUME

Motor vehicle operating speeds and the volumes on a roadway are key considerations in selecting the most appropriate bicycle and pedestrian facilities along a particular roadway. Generally speaking, the greater the speed and volume of motor vehicle traffic, the greater the amount of separation is desired for comfortable biking and walking facilities. Where streets have low volumes and low speeds, the need for separation is less critical, and mixing modes may be appropriate.

The speed and volume chart summarizes how speed and volume affect possible facility options.

- **Preferred Application Range:** identifies roadway conditions where a facility functions particularly well. This range is intended to set a high bar for facility application.
- **Potential Application Range:** refers to conditions where the facility type has also been shown to function and may be provide an appropriate context for using the facility.

WALKING & BIKING PROPENSITY

Walking and biking propensity describes the estimated relative demand for walking and biking, as documented in *Walk.Bike.Thrive!* (opposite page). This analysis was based on population density, employment density, trails, parks, transit service, schools, and retail. Generally speaking, the higher the demand for walking and biking, the more the area should invest in creating a great walking and biking network.

IMPLEMENTATION DIFFICULTY

Implementation costs considered include planning, design, construction, and maintenance.

ROADWAY TYPE
On which part of a roadway network is the facility type likely to be applicable?

SPEED AND VOLUME
Where is the facility type most appropriate, based on typical speed and volume of motor vehicles?

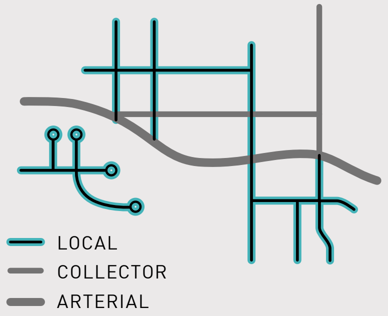
WALKING & BIKING PROPENSITY
At what level of demand for walking and biking infrastructure is this facility or concept applicable?

IMPLEMENTATION DIFFICULTY
How difficult is it to implement and maintain this type of facility or idea?

Example Application

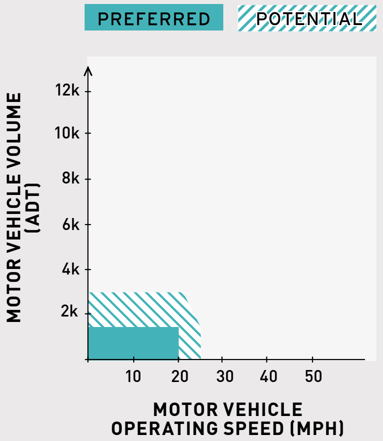
ROADWAY TYPE

Local residential streets that connect to transit stops. Not appropriate for high-frequency bus routes.



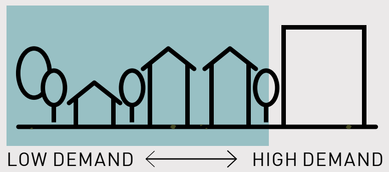
SPEED AND VOLUME

For use on roads with low vehicle speeds and volumes.



WALKING & BIKING PROPENSITY

For use in built-up parts of the region with at least some potential for bicycling. Not appropriate in rural or undeveloped contexts.



IMPLEMENTATION DIFFICULTY

Requires a small investment for planning, design, and construction.

HOW TO USE THIS DOCUMENT: BIKE PARKING AT TRANSIT

The application guidance associated with each bike parking at transit idea is meant to inspire action, give general design and application guidance, and provide links to additional information from trusted sources. It is not intended to be a comprehensive facility design guide.

TRANSIT SERVICE TYPE

Transit in the Atlanta region comes in several different forms. Characteristics of the transit service and its stops or stations correlate loosely with which type of bike parking is most appropriate. For example, local bus routes usually have stops that are relatively close together, so demand is more diffuse. Relative to MARTA rail service, overall demand for bike parking at bus stops is likely to be lower. Where stations or stops are further apart and there is more space for bike parking, like with MARTA rail and regional express commuter buses, there may be more concentrated demand or demand for more secure, long term options.

The transit service types highlighted in the application bar are for general guidance purposes only. In some cases there may be exceptions where special circumstances, like popular intersecting bus routes that merit installing bike parking that is more secure and suitable for longer-term storage.

SPACE REQUIREMENTS

Available space at a stop or station can dramatically impact the bike parking options. Many of the treatments in this document are modular and can come in a variety of sizes. For the purposes of understanding what is feasible, the application bar provides a "minimum" and a "potential" size.

- **Minimum Size Requirements:** identifies the minimum amount of space required to install a single unit of the treatment. For the secure, long-term parking options, a single unit generally includes one row of parking spaces with enough circulation space to get bikes in and out of the space. For short-term parking options, one unit would be a single inverted "U" rack, which holds two bicycles.
- **Potential Size Range:** refers to the space that could potentially be occupied by the bike parking treatment where there is unusually high demand. In theory, any bike parking could be as large as the demand dictates, but the "potential" sizes provided here reflect a reasonably high level of demand that may be found in the Atlanta region's transit stops and stations now or in the foreseeable future.

TIME

Short-term bike parking provides a convenient place to lock a bike with only basic protection from theft and limited to no protection from environmental elements beyond the owner's lock. Short term parking is appropriate where most users are not expected to leave their bikes for more than two hours or where spacial limitations make long term parking unfeasible.

Long-term bike parking, or Bike Secure Parking Areas (SPAs) provide additional security with an enclosed structure and managed access. It is a good option where users are expected to store their bikes for more than two hours, and especially for a full day or longer. Long-term parking is more expensive and requires more space, but it can offer a return on investment if the operator charges users a fee, as is customary with many secure bike parking systems.

In some cases, users may treat short-term parking like long-term parking if they do not desire the added security or if the membership/fee requirement is a barrier. While uncommon, users may also use long-term secure bike parking for shorter periods of time if they require the added security.

IMPLEMENTATION DIFFICULTY

Implementation costs considered include planning, design, construction, and maintenance. With many types of bike parking, there may be opportunities to partner with other organizations or adjacent property owners to share the responsibility of providing bike parking.

TRANSIT SERVICE TYPE
For which transit stop types is this parking type most appropriate?

SPACE REQUIREMENTS
What is the minimum amount of space required for this parking type? How much space could potentially be used for high demand locations?

TIME
Is this parking type most appropriate for short-term or long-term storage?

IMPLEMENTATION DIFFICULTY
How difficult is it to implement and maintain this type of facility or idea?

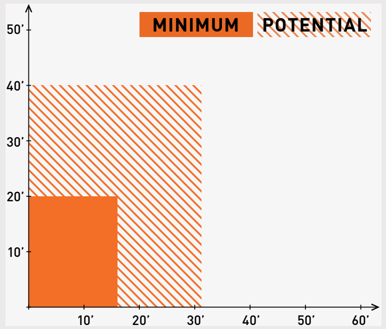
Example Application

TRANSIT SERVICE TYPE

Regional commuter express bus, and heavy rail rapid transit. Also useful at major transit centers regardless of transit vehicle type. Potentially suitable for local bus stops with high ridership

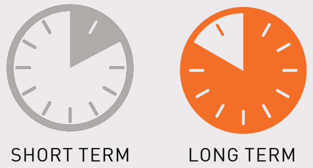
SPACE REQUIREMENTS

At least 16' x 20' to accommodate one row of inverted "U" or double-stacked racks, a 5' access aisle, and one row of vertical hanging racks. 31'x20' for freestanding indoor bike room with two rows of bikes and access hallway.



TIME

Most useful in locations where bikes are expected to be parked for two hours or longer.



IMPLEMENTATION DIFFICULTY

Moderate investment required for the purchase, site planning, and installation of pre-fabricated structures.

NETWORK PLANNING + PROJECT PRIORITIZATION

Identifying appropriate bike routes and bicycling treatments along roadways that connect to transit stops requires an understanding of existing conditions as well as a vision for how the transportation system will function in the future. Transit access should be a factor in prioritizing proposed bikeway projects.

Portland, OR

Network Planning + Project Prioritization

BIKE NETWORKS

Bikeways come in multiple forms, including on-street bike lanes and bicycle boulevards in addition to off-street facilities such as trails and greenways. Bikeways should form a logical hierarchy of facility types that serve different functions (i.e. higher speed commuter routes vs. low stress family-friendly routes) and appeal to the full range of users. Bikeways should be safe, connected, convenient, comfortable and inclusive.

KEY FACTORS TO CONSIDER DURING BIKE NETWORK PLANNING

- Biking propensity (see *Walk.Bike.Thrive!* Part 2 pg 24-25)
- Equitable Target Area designation (see *Walk.Bike.Thrive!* Part 2 pg 44 and 62-63)
- Bicycling Crash Risk (see *Walk.Bike.Thrive!* pg 26-27, 39, 43-44)
- Activity Center designation (see *Walk.Bike.Thrive!* Part 2 pg 66)
- Level of Traffic Stress for bicycling along corridor
- Opportunities and constraints for accommodating biking along corridor (right-of-way, existing and projected traffic volumes, posted speed limits, lane widths)
- Route directness and legibility
- Existing and planned bike share station locations
- Freight and emergency routes

PRIORITIZING INVESTMENT

During the planning process for *Walk.Bike.Thrive!*, the Atlanta Regional Commission developed a location-based score card. This tool is now being used to prioritize investments in active transportation and align spending with ARC's stated policy goals. Projects focused on making biking to transit safe and convenient should consider the factors included in the score card during the scoping phase.

Regional Active Transportation Score Card

ARC utilizes **a location-based scoring card for submitted active transportation projects** that includes the following factors:

☑ Is the project located in an area where there is high demand and propensity for walking and bicycling?

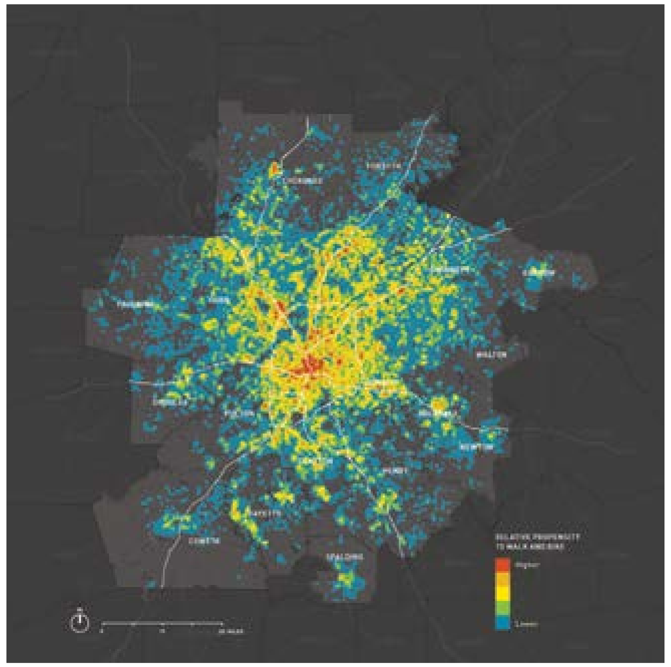
☑ Is the project located in an equitable target area? And if so, does it serve the mobility needs of the populations that rely on walking, bicycling, and transit most?

☑ Is the project located in a designated Activity Center?

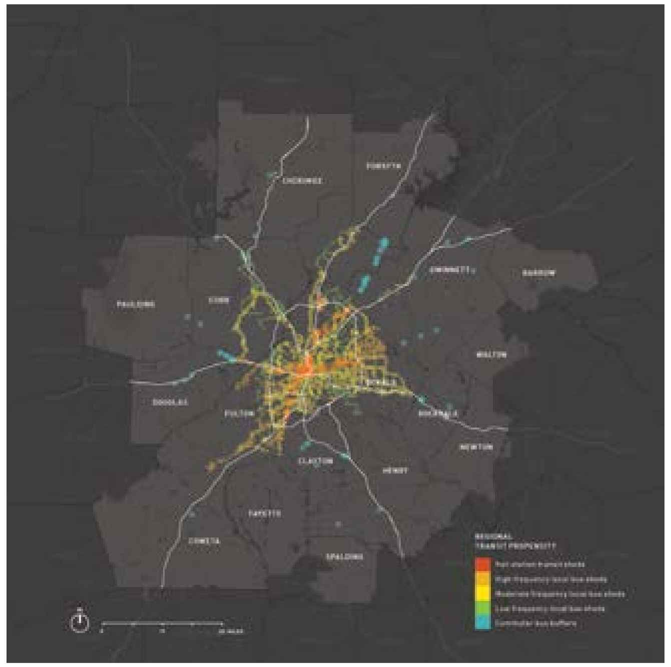
☑ Is the project located in an area with high propensity for transit use?

☑ Is the proposed project located in an established Walk Friendly Community or Bike Friendly Community with adopted local strategies for successful implementation?

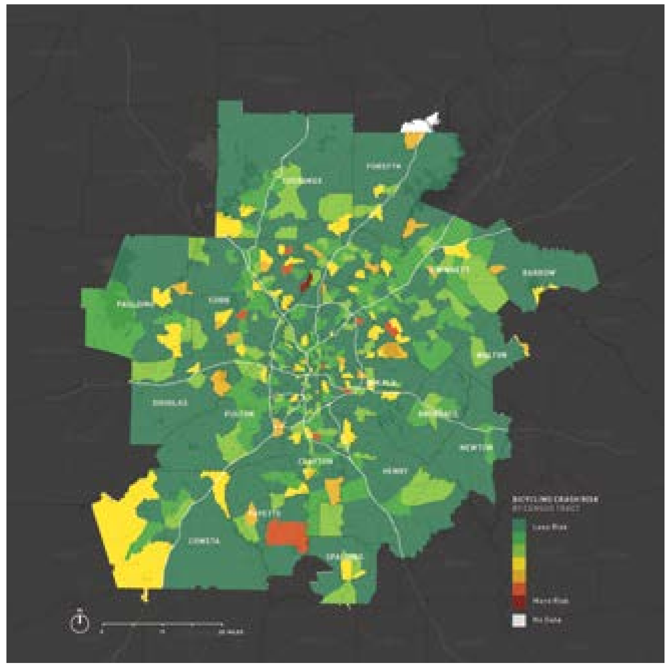
☑ Is the project located in an area with historically high crash rates for people walking and biking? If so, does the project address an identified safety issue? These areas include "hot spot areas" with concentrated walking and biking safety issues as well as systemic safety issues, such as along major commercial corridors.



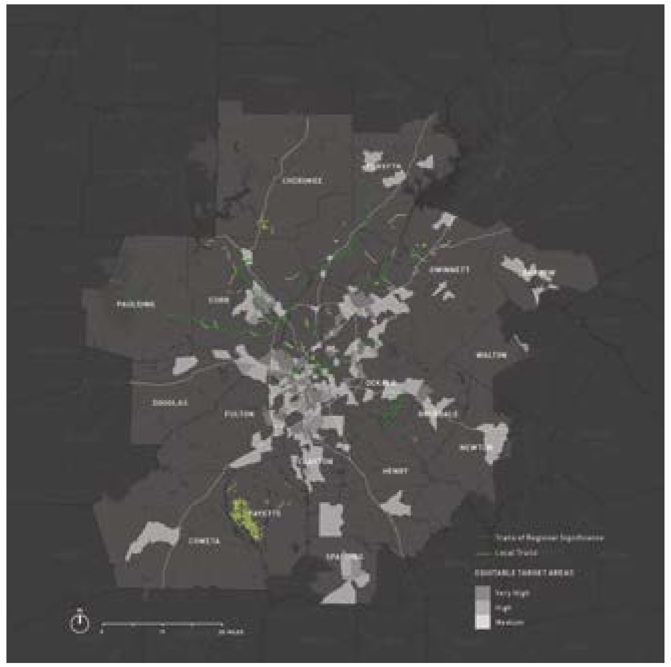
Walking and Biking Propensity
(*Walk.Bike.Thrive!* Part 2 pg 24-25)



Transit Propensity
(*Walk.Bike.Thrive!* Part 2 pg 32-34)

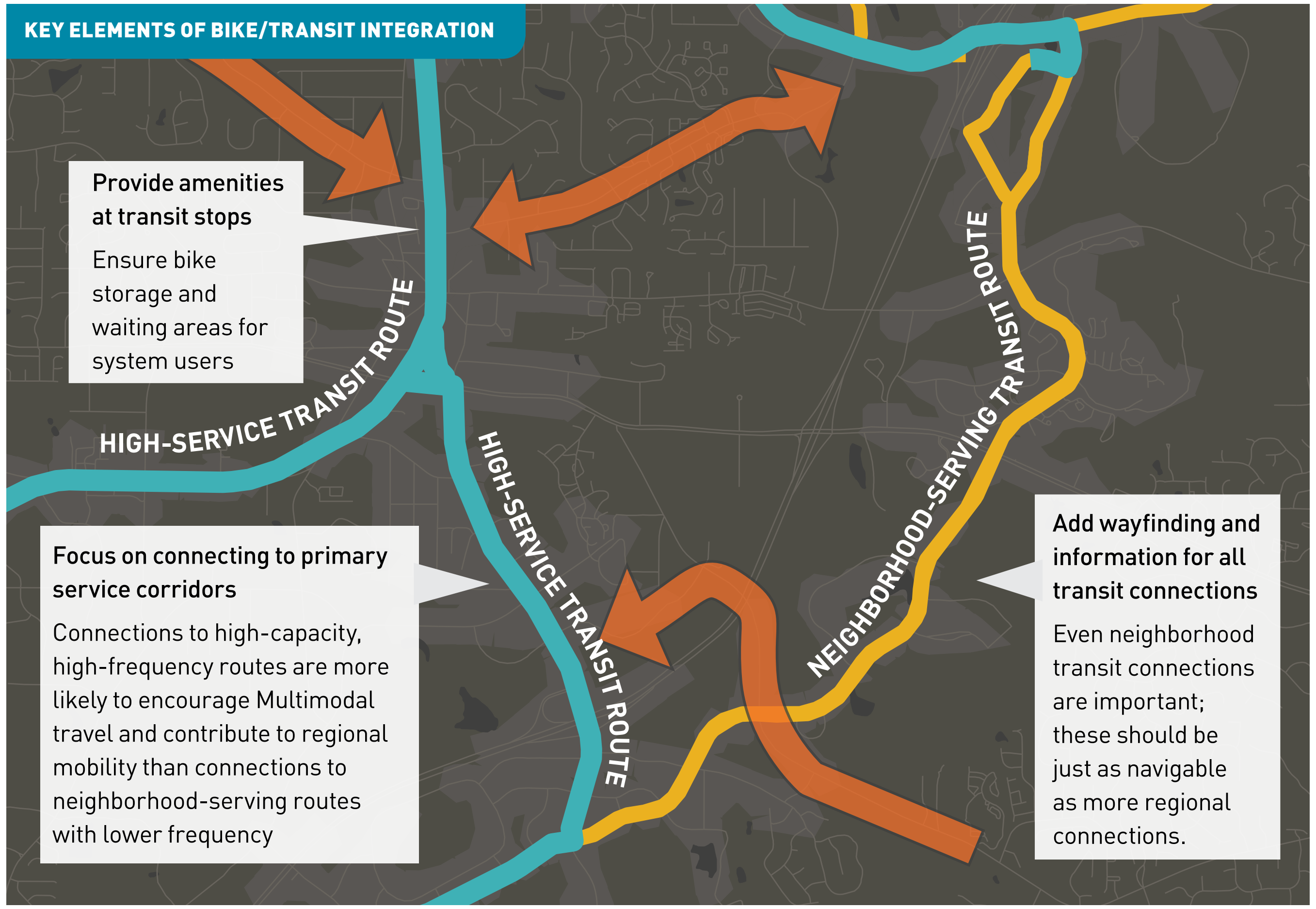


Bicycling Crash Risk
(*Walk.Bike.Thrive!* Part 2 pg 39)



Trails and Equitable Target Areas
(*Walk.Bike.Thrive!* Part 2 pg 66)

KEY ELEMENTS OF BIKE/TRANSIT INTEGRATION


HIGH-SERVICE TRANSIT ROUTE
HIGH-SERVICE TRANSIT ROUTE
NEIGHBORHOOD-SERVING TRANSIT ROUTE

Provide amenities at transit stops

Ensure bike storage and waiting areas for system users

Focus on connecting to primary service corridors

Connections to high-capacity, high-frequency routes are more likely to encourage Multimodal travel and contribute to regional mobility than connections to neighborhood-serving routes with lower frequency

Add wayfinding and information for all transit connections

Even neighborhood transit connections are important; these should be just as navigable as more regional connections.

INTEGRATING TRANSIT AND BIKE NETWORKS

Creating seamless transitions between bicycling and transit requires coordination between transit providers and the cities and counties that plan and construct local bikeway networks. Transit agencies can focus on factors like bicycle-friendly stop/station configuration, while cities and counties can focus on building bikeways that link to existing transit service.

BIKE-SPECIFIC FACTORS FOR TRANSIT PLANNING

- Transit has great potential to compliment regionwide bicycling by connecting otherwise disjointed nodes of bikability.
- For new or modified routes, place stops/stations at intersections with bike routes where possible.
- Longer distances between bus stops results in fewer bus-bike conflict points. This should not drive decision-making about stop spacing, but is one factor.
- Side boarding island stops are the preferred configuration for bus or streetcar stops alongside bike lanes (see NACTO Side Boarding Island Stop)

TRANSIT-SPECIFIC FACTORS FOR BIKE PLANNING

- Transit propensity (see *Walk.Bike. Thrive!* Part 2 pg 32-34)
- Transit service frequency and capacity: coordinate with transit provider
- Transit stop spacing: coordinate with transit provider
- Transit agency plans for service expansion, relocation, or elimination
- Potential for transit routes to connect equitable target areas to regional employment areas
- Current condition of transit stops and stations

STATION/STOP AREA CHECKLISTS

This checklist is designed to help evaluate whether or not a transit stop/station and the area immediately surrounding it are bike-friendly. It can be used during planning processes led by transit agencies or cities/counties that have an interest in facilitating more combined bike + transit trips.

OUTSIDE THE STOP OR STATION

- Is there a safe way to reach the stop or station by bike?
    - Do any of the streets near the stop or station have bikeways?
    - Do you feel safe crossing the streets immediately adjacent to the stop or station on a bike?
- Is there signage leading bicyclists to the stop or station?
- Do you have to cross the path of cars or buses to enter the station on a bike?
    - If Yes, are crosswalks, green conflict markings, and appropriate signs and signals provided?
- Is there room on the sidewalks and paths leading to the stop or station for you to walk with our bike?
- Is it easy to roll a bike from the street to the sidewalk and enter the station without lifting the bike?

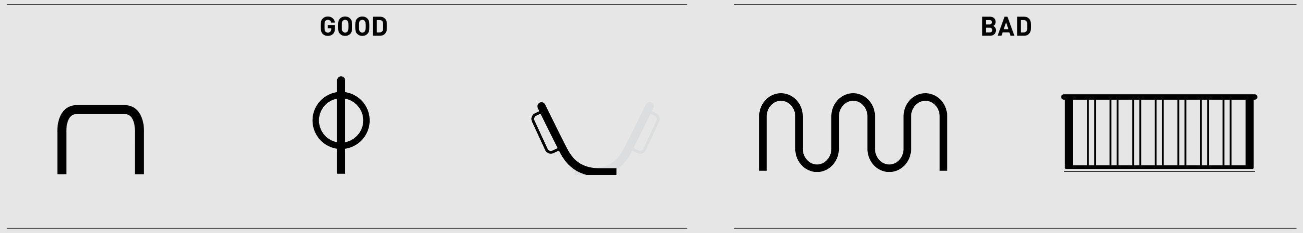
INSIDE THE STATION / AT THE STOP

- If there are multiple station levels, is it easy to roll a bike between them?
    - Is there a ramp?
    - Is there a functioning elevator?
    - Is there a wheel channel on the staircase?
- Are there visible and clear signs leading to bike parking, elevators or ramps?
- Is it easy to roll a bike through the fare gate/turnstile (for rail stations)?
- Is there a clear and level waiting area?
- Are there objects like benches or trash cans obstructing movement on the waiting area?
- Is there space at the waiting area to lean a bike so the bicyclist doesn't have to hold it?
- Does the waiting area have information about where bikes go on the transit vehicle?

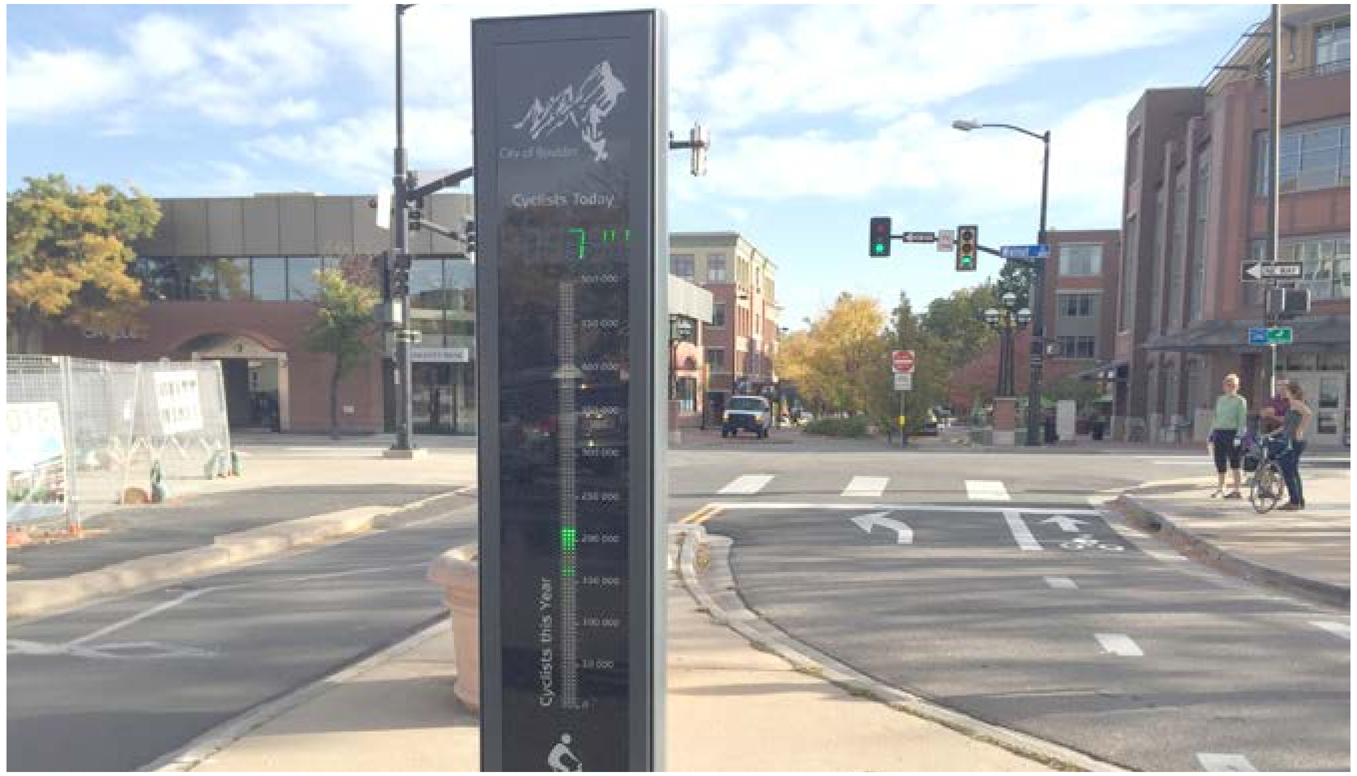
BIKE PARKING

- Is there bike parking?
    - Are there bikes locked up to objects that are not bike racks? How Many?
    - Is the parking immediately visible?
    - Is the rack designed to create at least two points of contact with a bicycle frame?
    - Is the parking one of the "good" styles shown at the bottom of this page?
    - Is the rack far enough away from walls, other bike racks, and other obstacles?
    - Is the parking protected from weather?
    - Is the parking area well lit?
    - Is bike parking offered both inside + outside the fare gate (for rail stations)?

Bike Parking Examples



Graphics courtesy Association of Pedestrian and Bicycle Professionals Essentials of Bike Parking Report (2015)



Boulder, CO has developed a program for counting bike trips, including displays that show live information with number of cyclists per year and per day.

EVALUATION

Regional Bike to Transit Performance Measures

Performance measures are critical for evaluating the long-term progress of linking bike and transit trips. Some measures should be process oriented – such as the amount of effort going to development and building – and some should be outcome oriented – such as the number of people boarding and alighting transit with bikes. Long-term data can help regional and local decision-makers understand where improvements need to be made, where investments should be prioritized, and how bike to transit trips are positively contributing to the region.

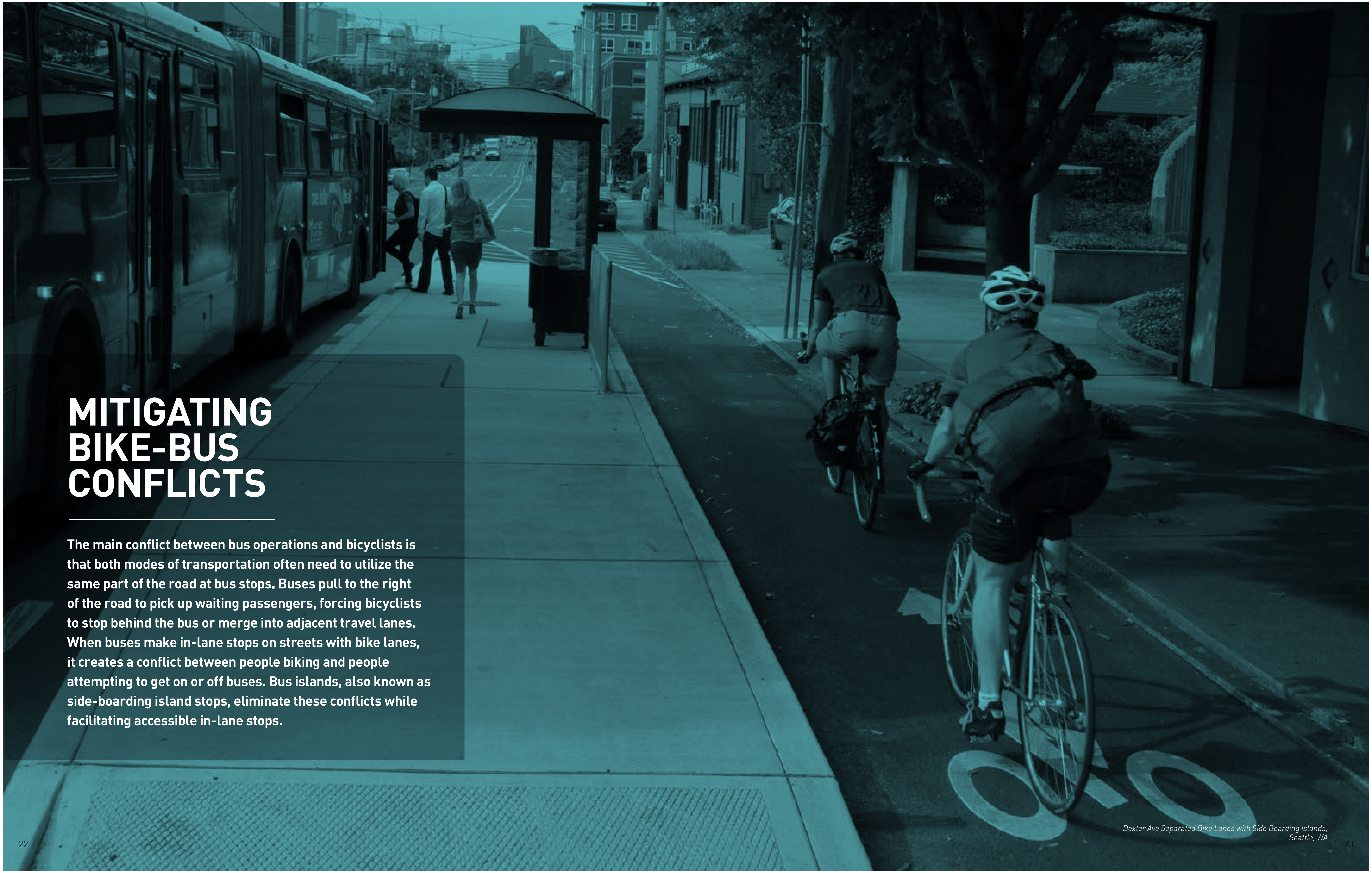
ARC encourages use the following measures to evaluate progress on regional bike to transit activity:

- Bicycle counts in vicinity of transit stop or station (focus on key access routes)
- Stop/station-level boardings/alightings
- Stop/station-level bicycle boardings/alightings
- User patterns and perceptions (via surveys)
- Bike mode share in the census tract encompassing the stop/station
- Bike share usage in vicinity of a stop/station
- Bike parking utilization (at formal parking facilities)
- Degree of informal bike parking occurring.
- Number of new sign-ups and/or renewals for secure bike parking facilities (if/where some form of registration/reservation/request is required)
- Level of spending for active transportation infrastructure in vicinity of a stop or station
- Number of visits to pertinent agency websites related to bike/transit access
- Intersection density within stop/station area (3 mi radius)
- Proportion of the roadway network with bikeways (3 mi radius around stop/station)

To Ga. World Congress Center, Philips Arena and Ga. Dome. Take Westbound Train to Dome-GWCC-Philips Arena-CNN Center Transit Station
EXIT
To Eastbound
Underground Atlanta
TREK

MITIGATING BIKE-BUS CONFLICTS

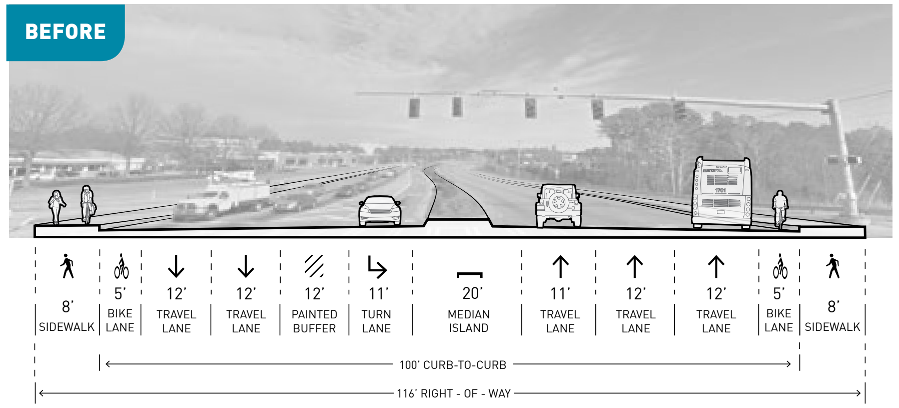
The main conflict between bus operations and bicyclists is that both modes of transportation often need to utilize the same part of the road at bus stops. Buses pull to the right of the road to pick up waiting passengers, forcing bicyclists to stop behind the bus or merge into adjacent travel lanes. When buses make in-lane stops on streets with bike lanes, it creates a conflict between people biking and people attempting to get on or off buses. Bus islands, also known as side-boarding island stops, eliminate these conflicts while facilitating accessible in-lane stops.



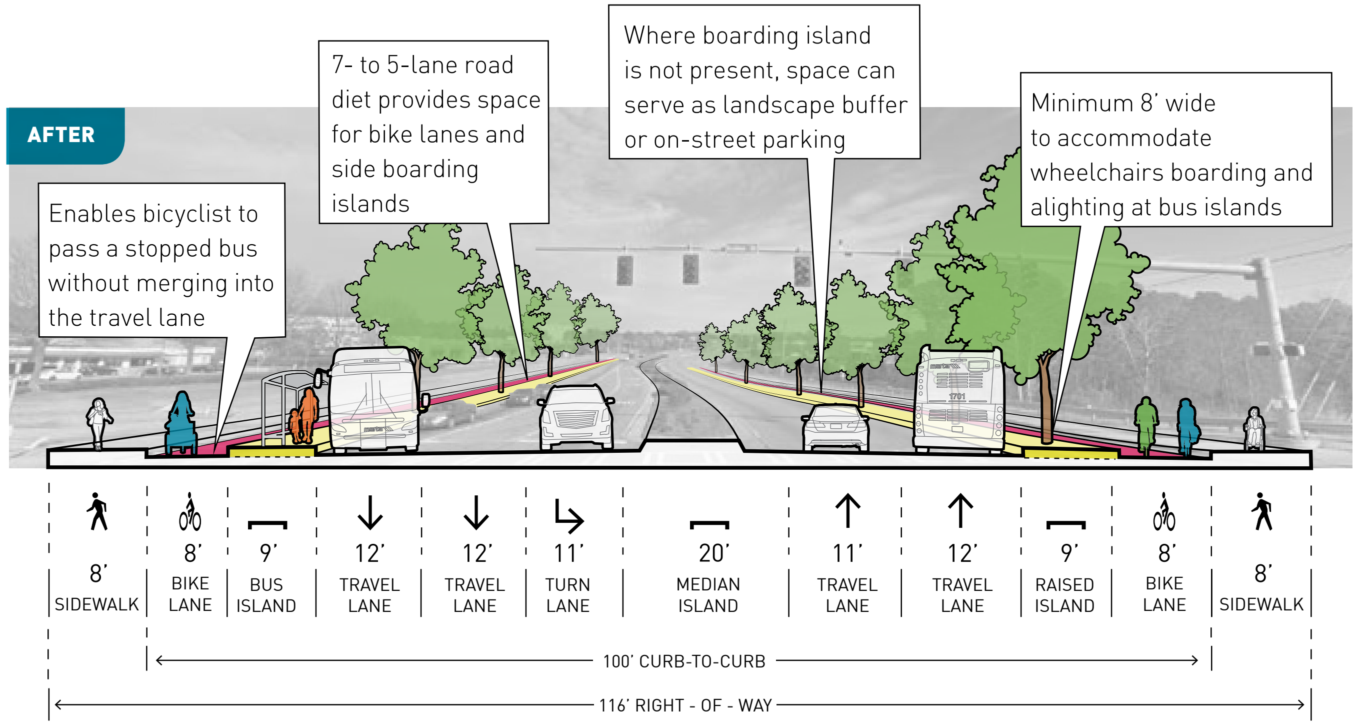
Dexter Ave Separated Bike Lanes with Side Boarding Islands, Seattle, WA

IDEA:

Separated Bike Lanes with Integrated Side Boarding Islands



Raised boarding islands, also known as side-boarding island stops, are dedicated waiting and boarding areas for transit passengers that eliminate conflicts between transit vehicles and people bicycling at bus stops. Raised boarding islands improve safety and comfort by preserving exclusive space for bicycling at bus and streetcar stops, and also improve the efficiency of transit operations by enabling accessible in-lane stops with level or near-level boarding. Boarding islands may be integrated with separated bike lane design as shown here or use a "floating" design as shown on pg 40.



Enables bicyclist to pass a stopped bus without merging into the travel lane

7- to 5-lane road diet provides space for bike lanes and side boarding islands

Where boarding island is not present, space can serve as landscape buffer or on-street parking

Minimum 8' wide to accommodate wheelchairs boarding and alighting at bus islands

Precedents

Seattle, WA

Chicago, IL

Vancouver, BC

References

NACTO *Urban Bikeway Design Guide*: Cycle Tracks

NACTO *Transit Street Design Guide*: Side Boarding Island Stop

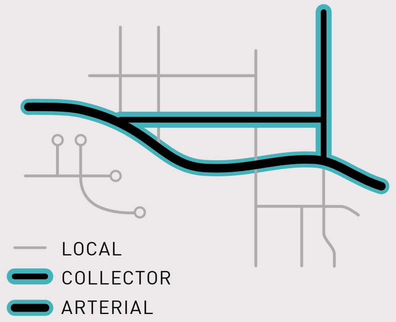
FHWA *Separated Bike Lane Planning and Design Guide*

MassDOT *Separated Bike Lane Planning & Design Guide*: Chapter 5: Curbside Activity Design

Application

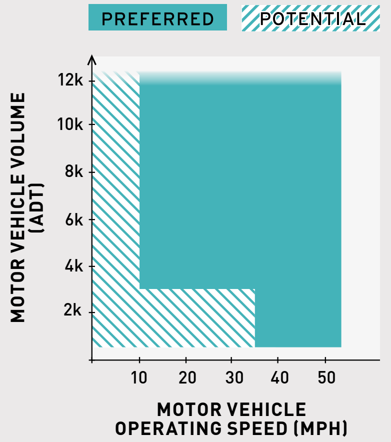
ROADWAY TYPE

Serves primary connections on high-frequency bus and streetcar routes.



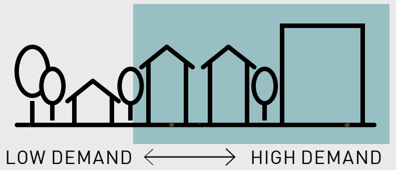
SPEED AND VOLUME

For use on roads with moderate to high vehicle speeds and volumes.



WALKING & BIKING PROPENSITY

For use in parts of the region with moderate to high walking, biking, and transit propensity.

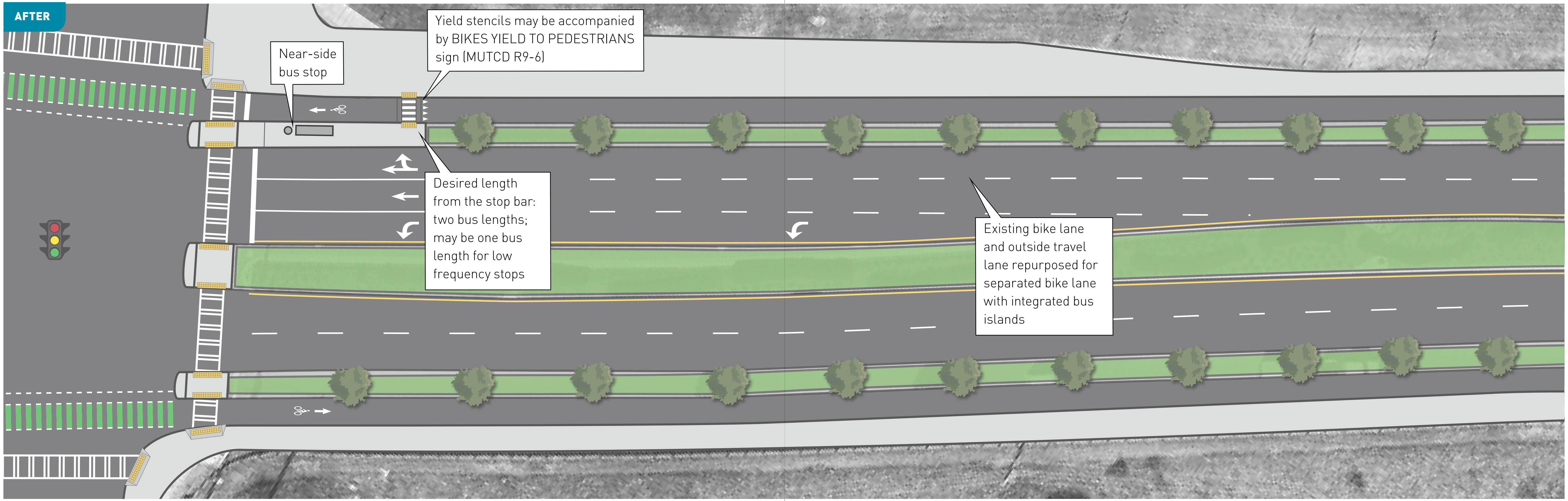


IMPLEMENTATION DIFFICULTY

Requires a significant investment for planning, design, and construction.

IDEA:

Separated Bike Lanes with Integrated Boarding Islands



Near-side bus stop

Yield stencils may be accompanied by BIKES YIELD TO PEDESTRIANS sign (MUTCD R9-6)

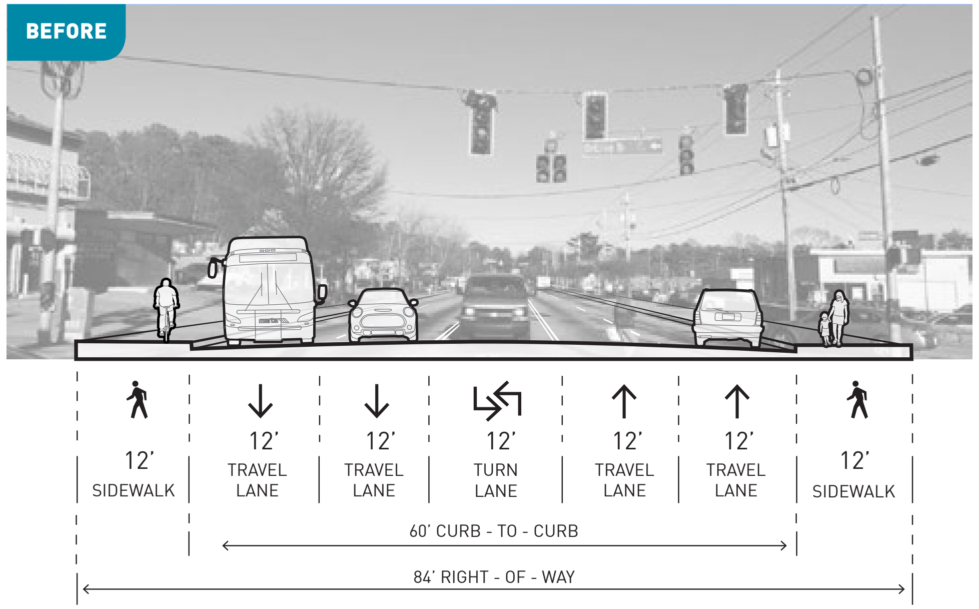
Desired length from the stop bar: two bus lengths; may be one bus length for low frequency stops

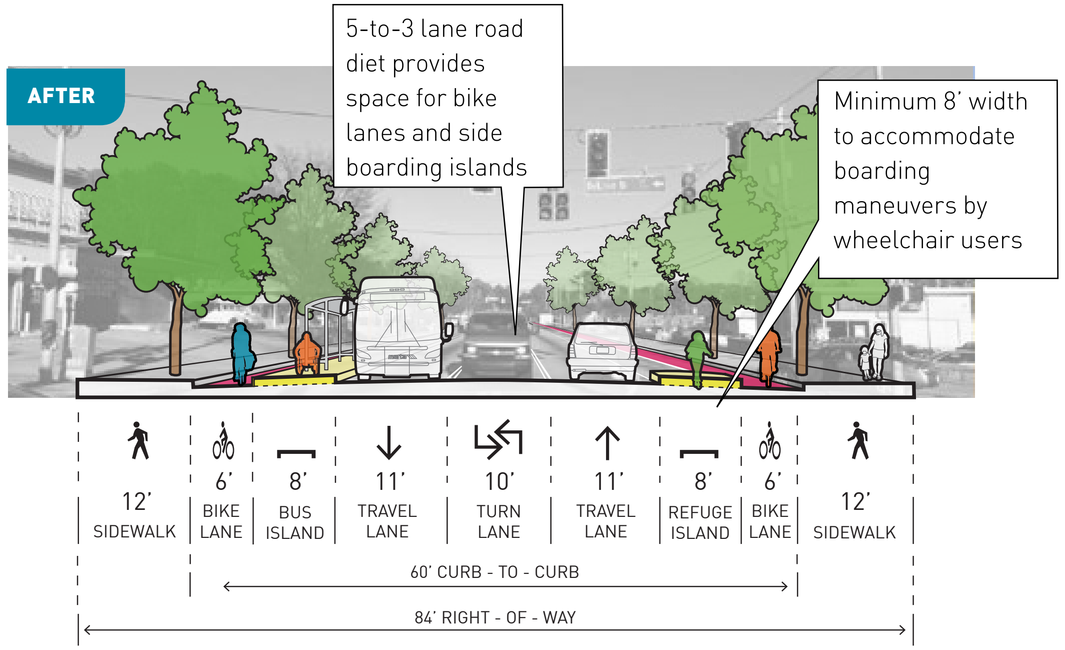
Existing bike lane and outside travel lane repurposed for separated bike lane with integrated bus islands

IDEA:

Buffered Bike Lanes with Floating Boarding Islands

Raised boarding islands are dedicated waiting and boarding areas for transit passengers that eliminate conflicts between transit vehicles and people bicycling at bus stops. Raised boarding islands improve safety and comfort by preserving exclusive space for bicycling at bus and streetcar stops, and also improve the efficiency of transit operations by enabling accessible in-lane stops with level or near-level boarding. Boarding islands may be "floating" as shown here or integrated with separated bike lane design as shown on pg 36.





5-to-3 lane road diet provides space for bike lanes and side boarding islands

Minimum 8' width to accommodate boarding maneuvers by wheelchair users

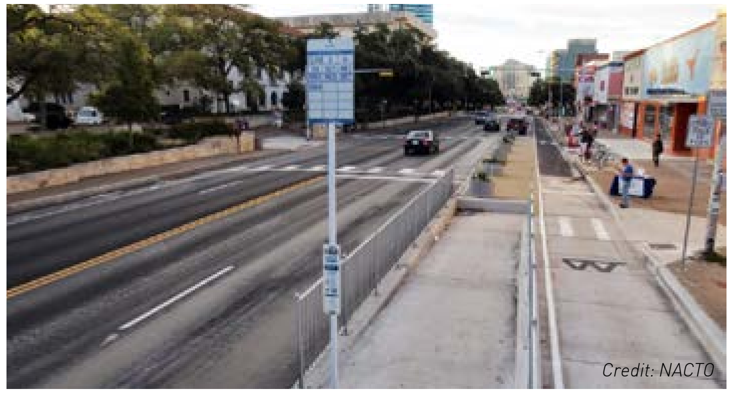
Precedents

Credit: NACTO

Seattle, WA

Credit: NACTO

Los Angeles, CA


Credit: NACTO

Austin, TX

References

NACTO *Urban Bikeway Design Guide*: Buffered Bike Lanes

NACTO *Transit Street Design Guide*: Side Boarding Island Stop

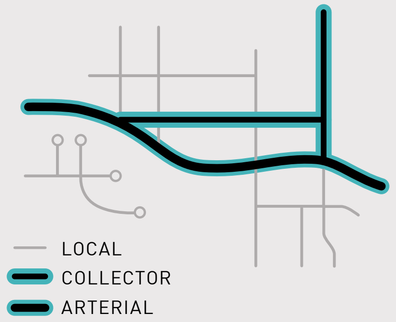
FHWA *Separated Bike Lane Planning and Design Guide*

MassDOT *Separated Bike Lane Planning & Design Guide*: Chapter 5: Curbside Activity Design

Application

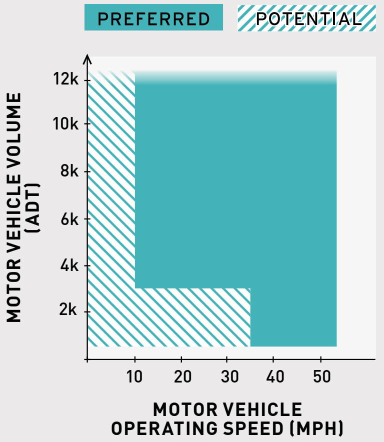
ROADWAY TYPE

Serves primary connections on high-frequency bus and streetcar routes.



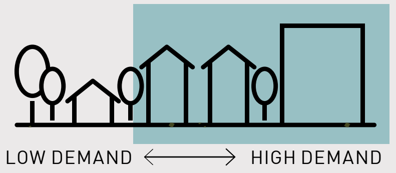
SPEED AND VOLUME

For use on roads with high motor vehicle volumes, and moderate to high speed motor vehicle traffic.



WALKING & BIKING PROPENSITY

For use in parts of the region with moderate to high walking, biking, and transit propensity.



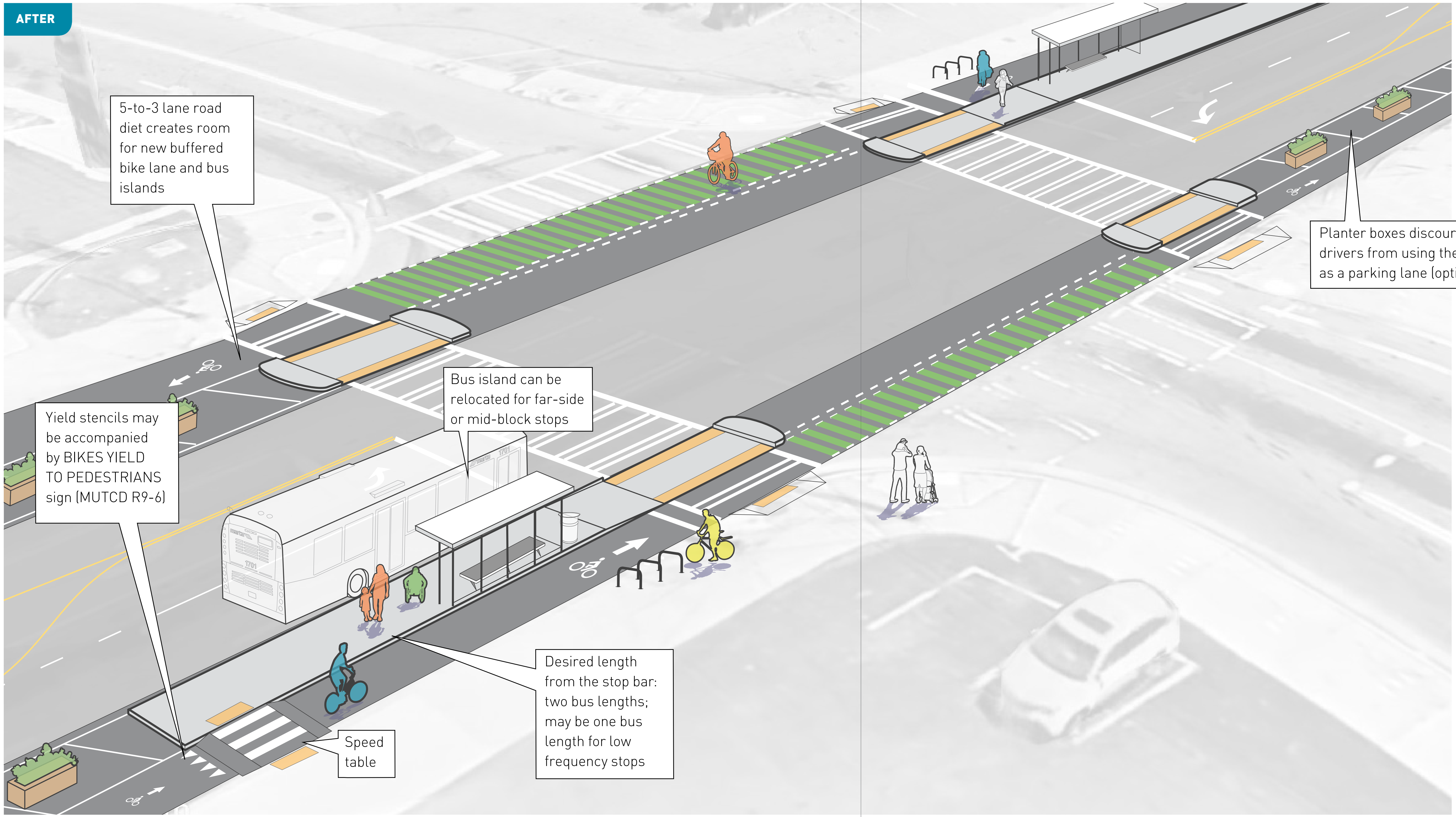
IMPLEMENTATION DIFFICULTY

Requires a significant investment for planning, design, and construction.

IDEA:

Buffered Bike Lanes with Floating Boarding Islands

AFTER



5-to-3 lane road diet creates room for new buffered bike lane and bus islands

Yield stencils may be accompanied by BIKES YIELD TO PEDESTRIANS sign (MUTCD R9-6)

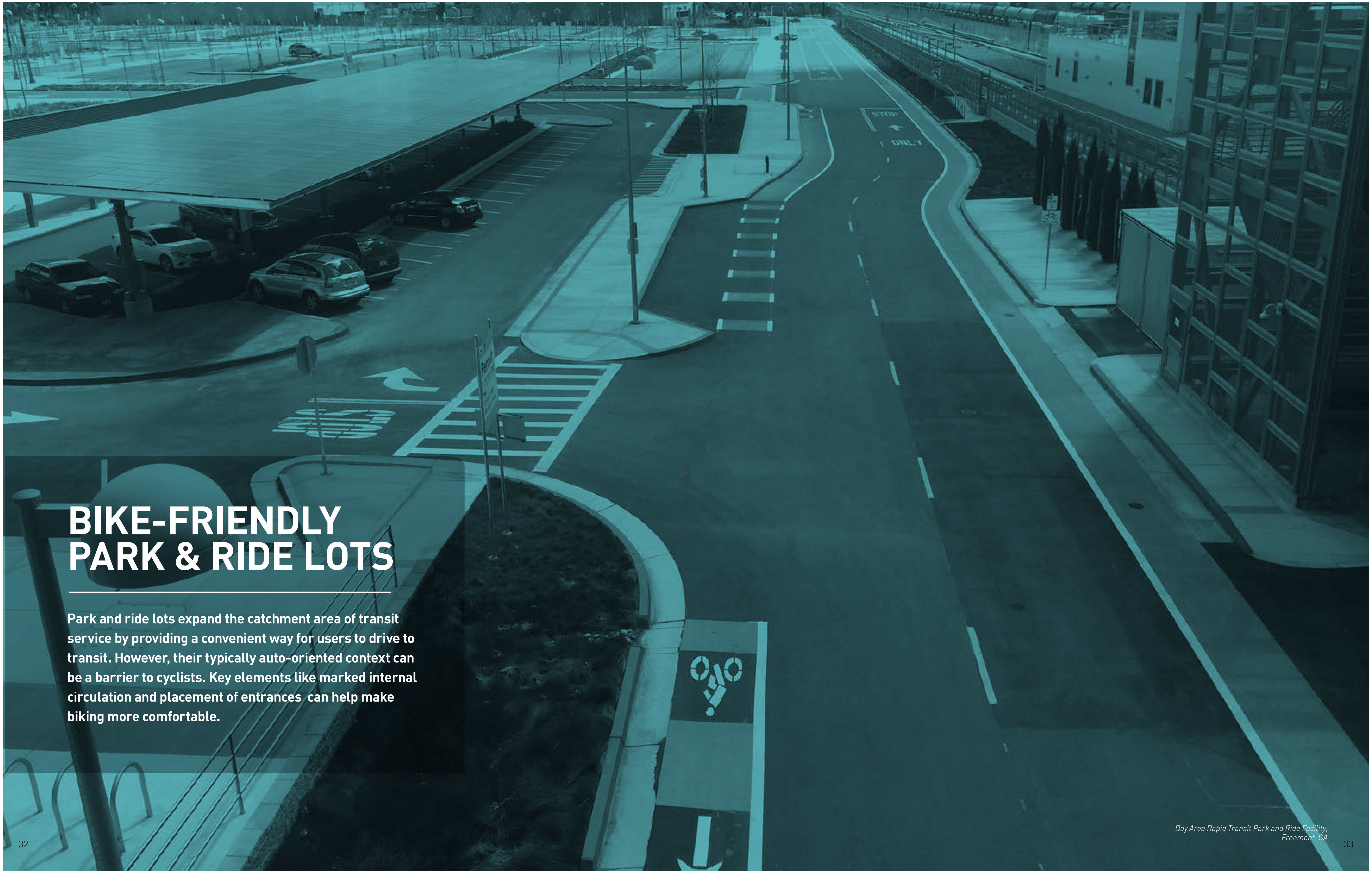
Bus island can be relocated for far-side or mid-block stops

Desired length from the stop bar: two bus lengths; may be one bus length for low frequency stops

Speed table

Planter boxes discourage drivers from using the bike lane as a parking lane (optional)

BEFORE



BIKE-FRIENDLY PARK & RIDE LOTS

Park and ride lots expand the catchment area of transit service by providing a convenient way for users to drive to transit. However, their typically auto-oriented context can be a barrier to cyclists. Key elements like marked internal circulation and placement of entrances can help make biking more comfortable.

Bay Area Rapid Transit Park and Ride Facility, Freemont, CA

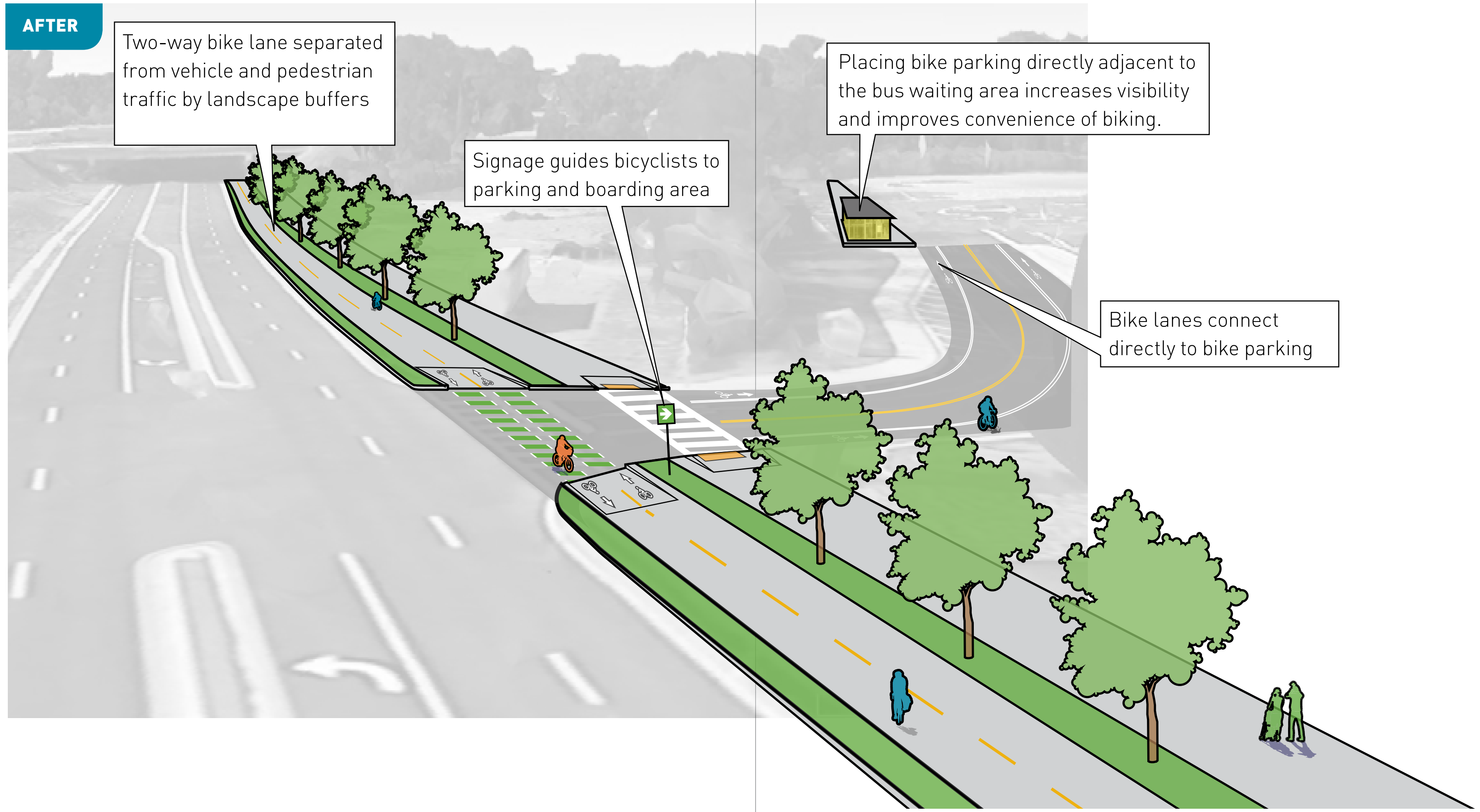
IDEA:

Bike-Friendly Park & Ride Lots

Bicycle access to park and ride lots should be considered at three scales. First, it should work at the neighborhood scale by connecting it to local bike routes. Second, park and ride lots are most often located off of major roads, so the bike infrastructure along such roads that provide access to park & ride lots should be robust enough to accommodate the widest possible range of potential users. Where the bikeway meets the entrance to the park & ride facility, signage and pavement markings should make the transition intuitive. Finally, internal bike circulation should minimize conflicts between modes, be clearly marked, and lead bicyclists directly to the bike parking and waiting area.

BEFORE

AFTER



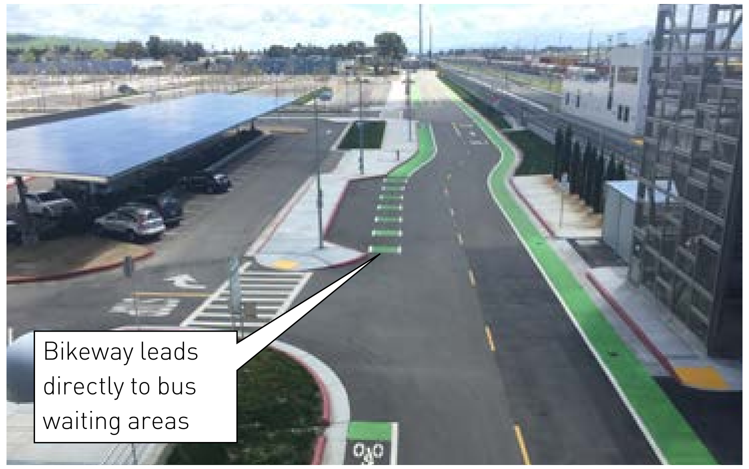
Two-way bike lane separated from vehicle and pedestrian traffic by landscape buffers

Signage guides bicyclists to parking and boarding area

Placing bike parking directly adjacent to the bus waiting area increases visibility and improves convenience of biking.

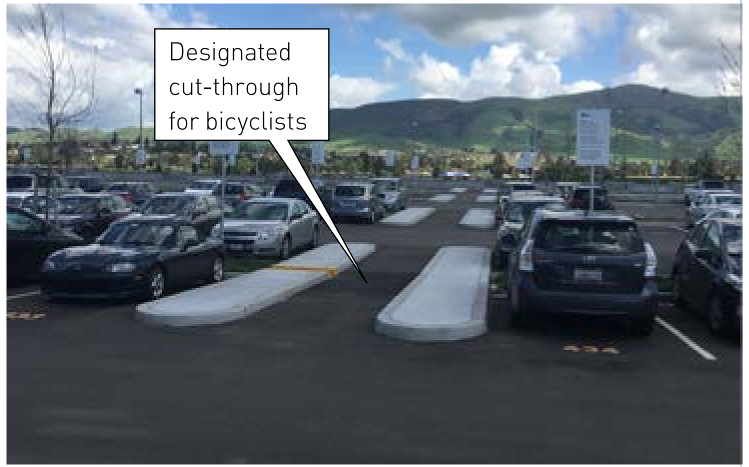
Bike lanes connect directly to bike parking

Precedents



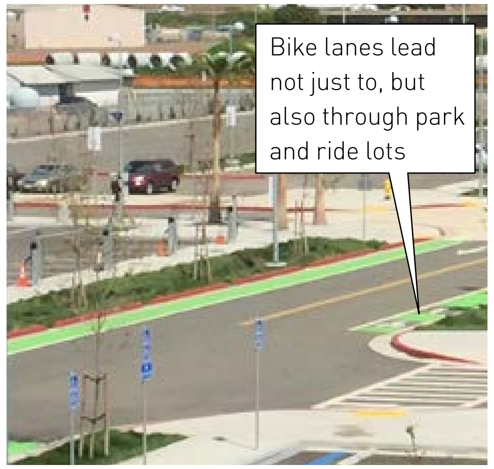
Bikeway leads directly to bus waiting areas

Freemont, CA



Designated cut-through for bicyclists

Freemont, CA



Bike lanes lead not just to, but also through park and ride lots

Freemont, CA

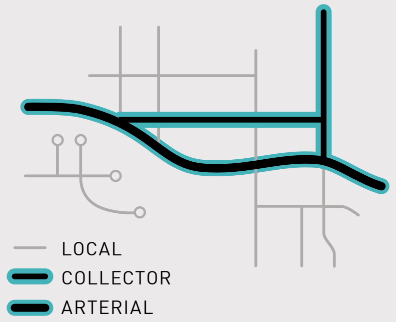
References

City of Los Angeles *Bikeable Design: A Toolkit for Bike-Friendly Development*: Wayfinding Signs (pg 17), Lighting (pg 18), Network Connections (pg 19)

Application

ROADWAY TYPE

Park and Ride lots are typically on major streets in a suburban context

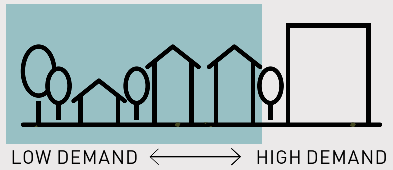


SPEED AND VOLUME

Park and Ride Lots are typically on roads with high speeds and volumes. The facility providing bike access to the lot should provide adequate separation from vehicle traffic.

WALKING & BIKING PROPENSITY

For use in parts of the region with low to moderate walking, biking, and transit propensity.

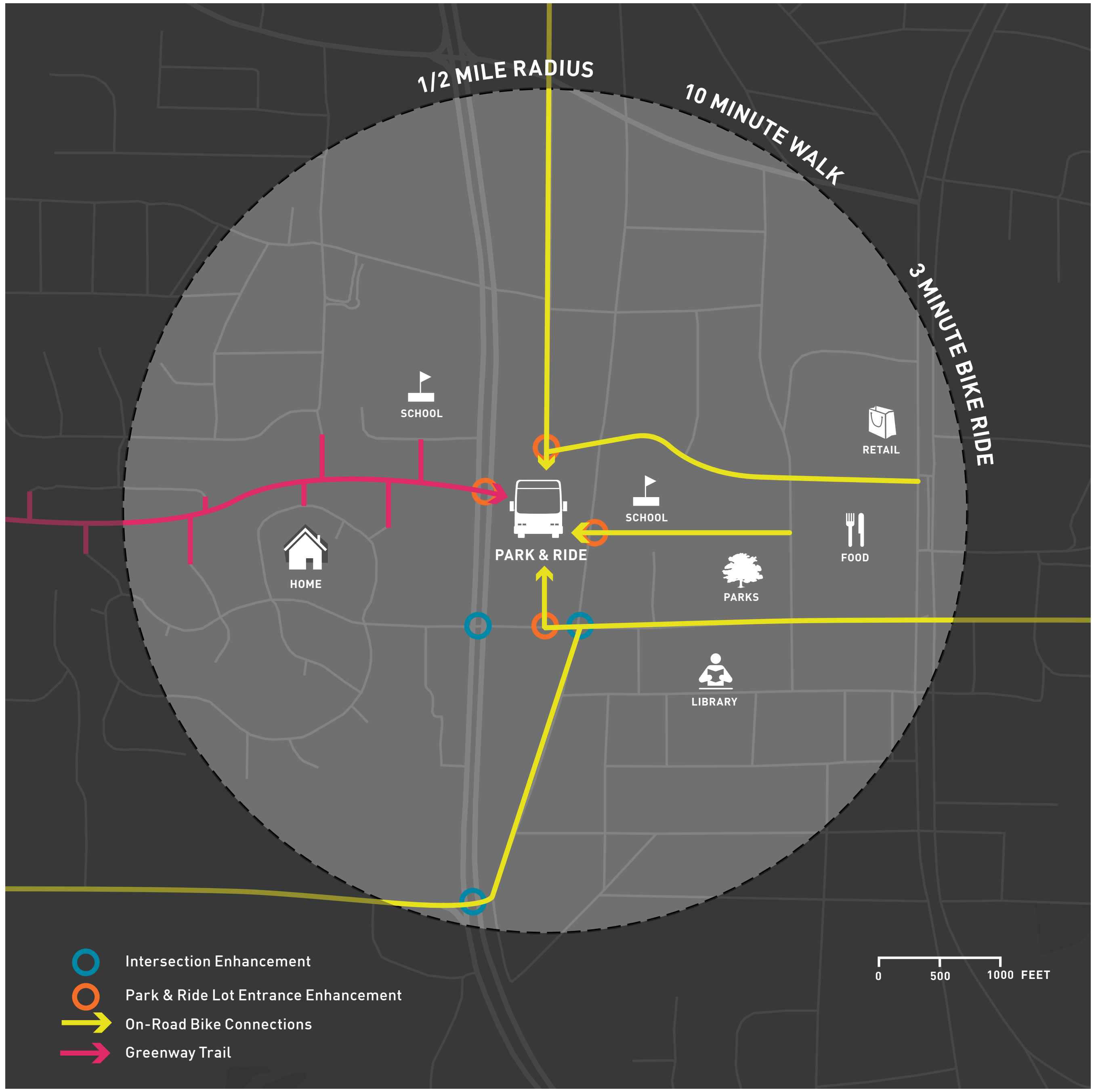


IMPLEMENTATION DIFFICULTY

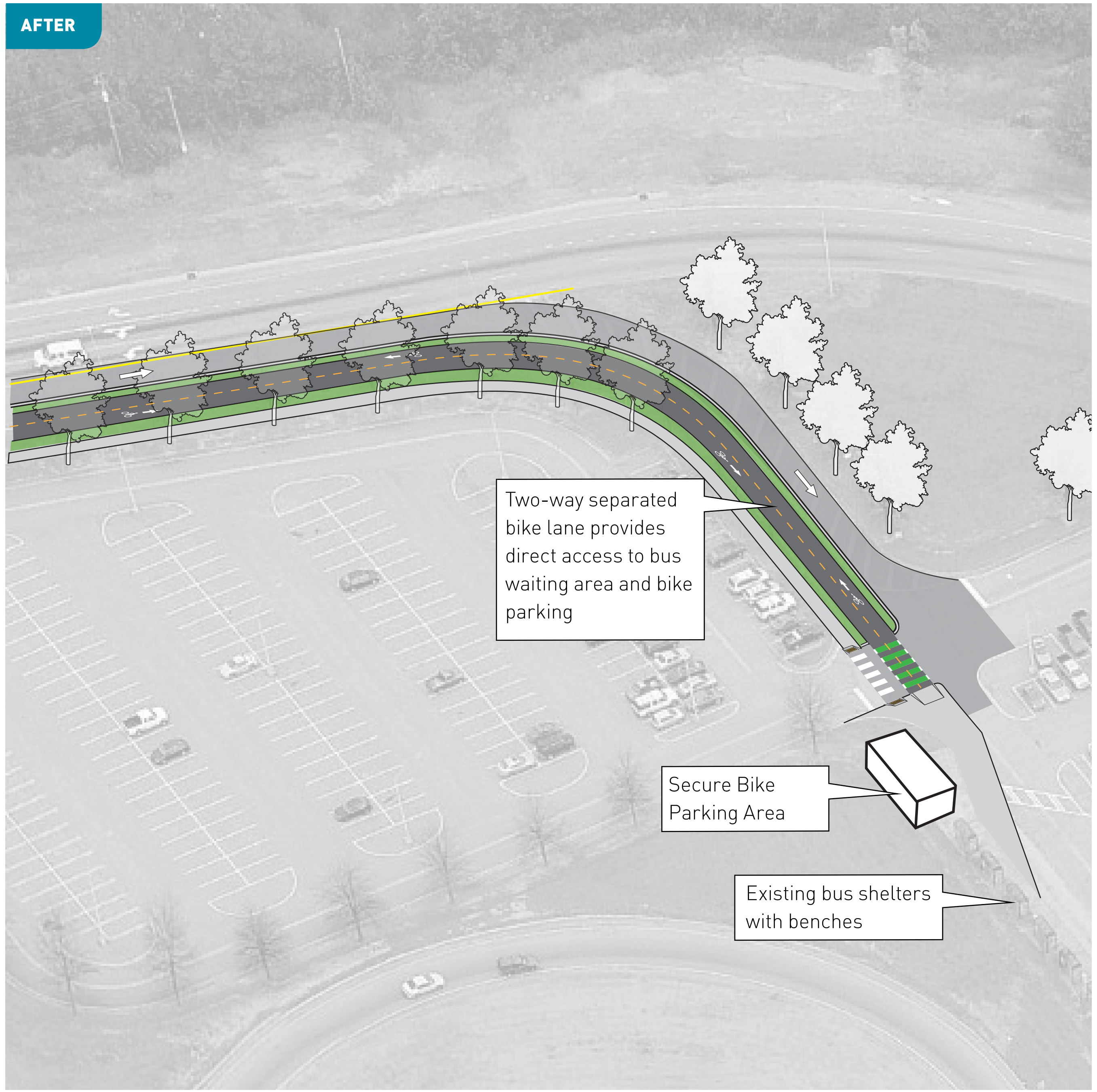
Requires a moderate to significant investment for planning, design, and construction.

Bike-Friendly Park & Ride Lots

NEIGHBORHOOD-SCALE ACCESS



INTERNAL CIRCULATION



Two-way separated bike lane provides direct access to bus waiting area and bike parking

Secure Bike Parking Area

Existing bus shelters with benches

RETROFITTING SUBURBAN NETWORK DESIGN

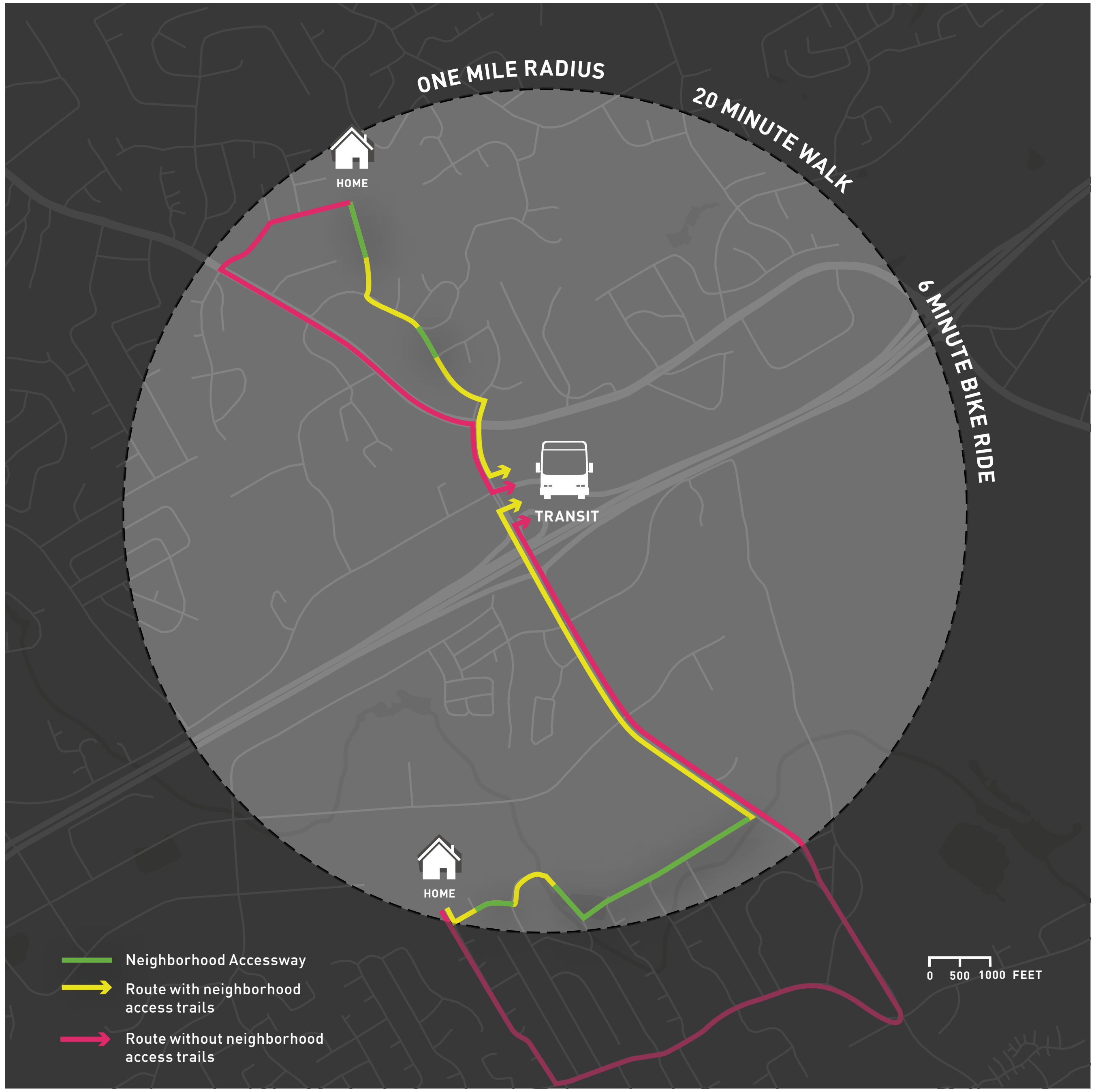
Many Atlanta area suburbs grew during an auto-oriented era and as a result the street grid can be indirect and circuitous for those using other modes. Where the lack of a connected street grid is the major barrier to bike access to transit, off-street connections to low-stress streets can limit out-of-direction travel and the amount of time bicyclists spend on high-stress roads. For retrofitting major roadways, see pages 26, 30 and 36.

*Alpharetta Greenway,
Alpharetta, GA*

IDEA:

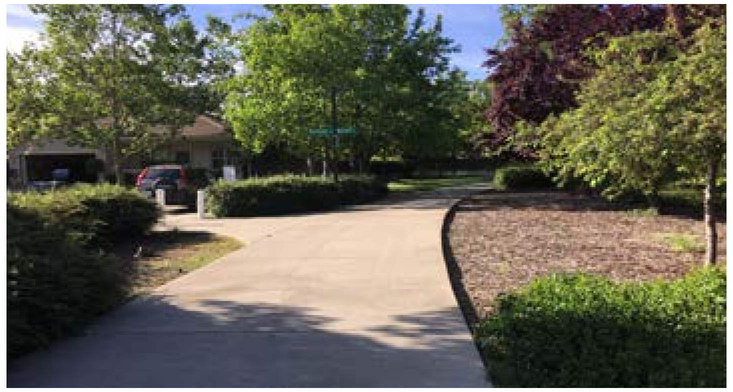
Neighborhood Accessways

Neighborhood Accessways are short trail segments between disconnected streets that enable more direct, lower-stress routes for people walking and bicycling. Neighborhood accessways can improve bicycling access to local destinations, including transit stops, by reducing trip distances and circumventing roadways that may be uncomfortable for bicycling.



Precedents

Cape Coral, FL



Davis, CA

Portland, OR

References

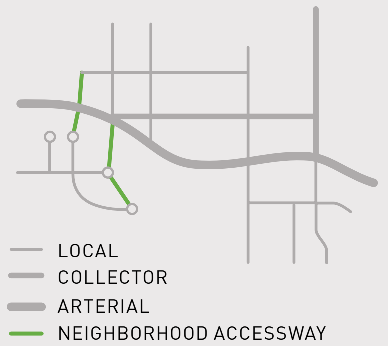
FHWA *Small Town and Rural Multimodal Networks*: Creating Networks. (Pg 1-12)

Atlanta Regional Commission *Walk.Bike.Thrive!*: Part 1 (Pg 45)

Application

ROADWAY TYPE

Serves connections independently of the street network. May function as a network alternative to streets.

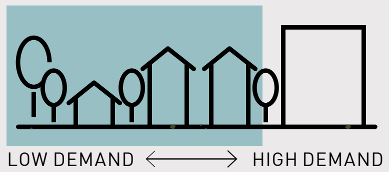


SPEED AND VOLUME

Paths operating in independent corridors are fully separated from traffic. Facility provision is based on opportunity and connectivity rather than roadway context. In some cases an independent corridor may offer similar connectivity and access to destinations as a nearby roadway.

WALKING & BIKING PROPENSITY

Generally for use in parts of the region with low to moderate walking, biking, and transit propensity.



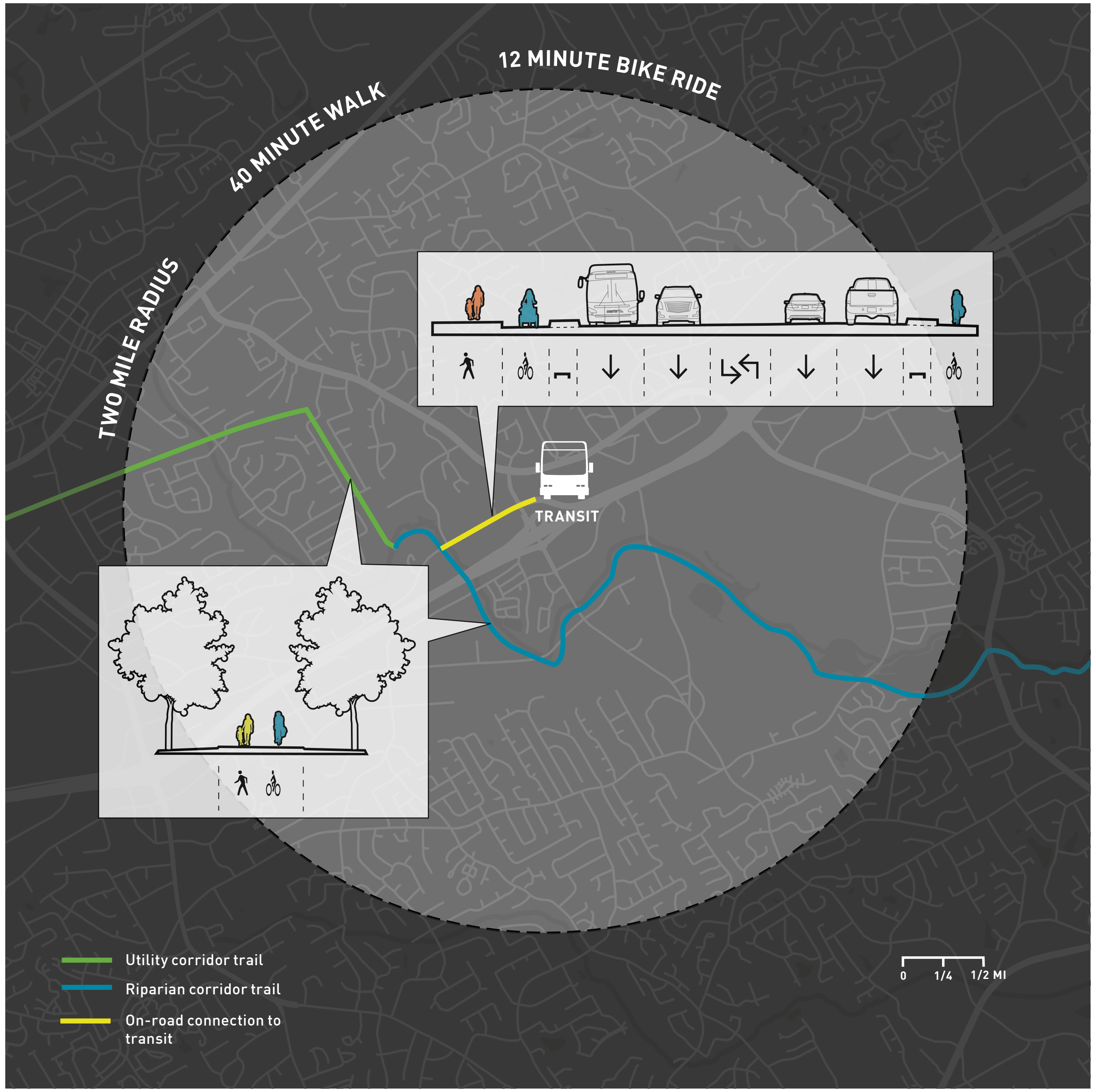
IMPLEMENTATION DIFFICULTY

Requires a moderate investment for planning, design, and construction.

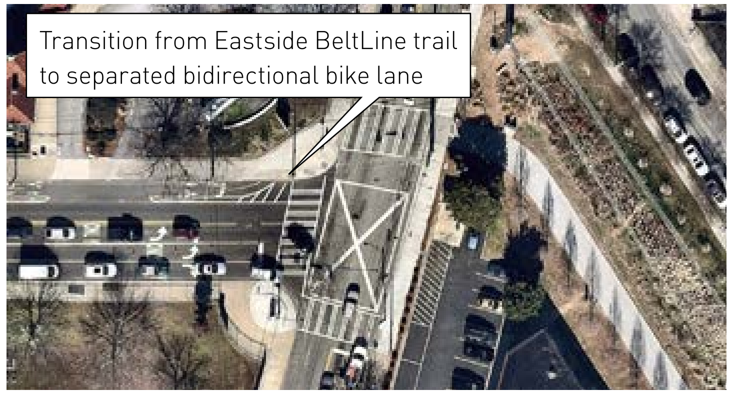
IDEA:

Combining off-street & on-street bikeways

In many suburban contexts, there are cost-effective opportunities to create a continuous bike connection to transit by creating off-street bikeways and connecting them to retrofitted portions of major roads. That approach avoids modification of long stretches of difficult roadways. In the example below, a utility corridor, a creek, and a separated bike lane retrofit demonstrate this idea.



Precedents


Transition from Eastside BeltLine trail to separated bidirectional bike lane

Atlanta, GA

Atlanta, GA

Seattle, WA

References

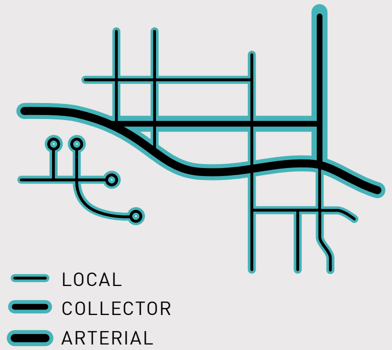
FHWA *Small Town and Rural Multimodal Networks*: Creating Networks. (Pg 1-11)

Atlanta Regional Commission *Walk.Bike.Thrive!*: Part 1 (Pg 45)

Application

ROADWAY TYPE

Off-street bikeways can be combined with on-street bikeways on any roadway type.

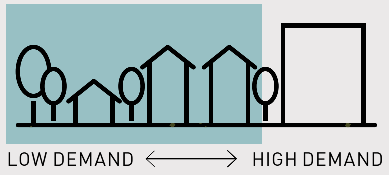


SPEED AND VOLUME

This idea could potentially be applied to any roadway, regardless of speed and volume combinations. The design for the on-street retrofit should consider speed and volume and provide adequate protection between bicyclists and vehicles.

WALKING & BIKING PROPENSITY

Generally for use in parts of the region with low to moderate walking, biking, and transit propensity.



IMPLEMENTATION DIFFICULTY

Requires a moderate investment for planning, design, and construction.

ACCOMMODATING BIKE + TRANSIT TRIPS FOR PEOPLE OF ALL AGES AND ABILITIES

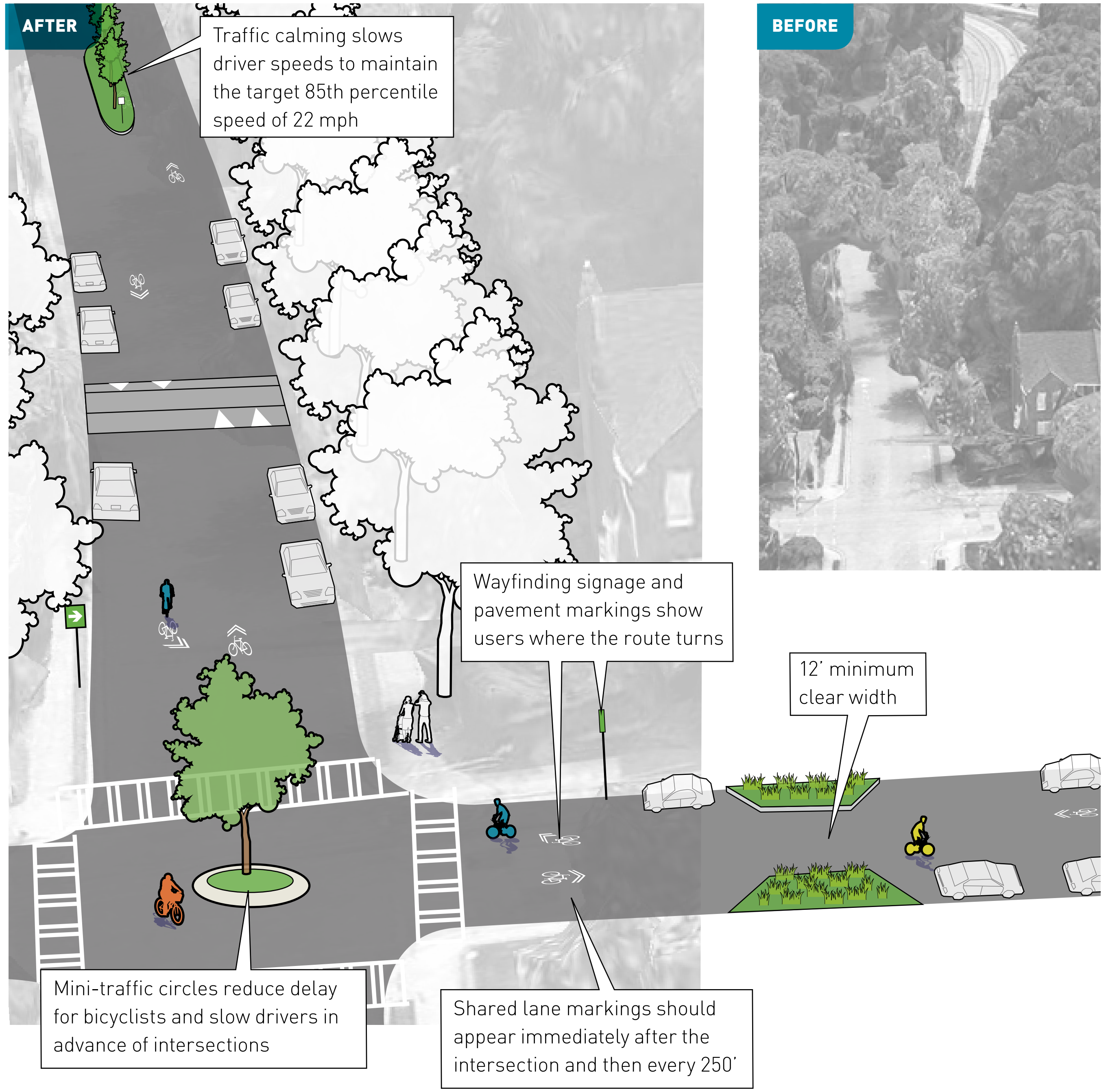
Bikeways that connect to transit stops should be designed to meet the needs of the widest possible range of potential bicyclists. Because most transit stops are on major roads with high vehicle speeds and volumes, bike facilities should provide appropriate separation between the bicycling area and traffic. Where this is not possible, prioritizing the safety and convenience of biking on neighborhood streets can broaden the appeal of combining biking and transit.

Neighborhood Greenway, Seattle, WA

IDEA:

Neighborhood Greenways

Neighborhood greenways, also known as "bicycle boulevards," are designated bicycle-priority routes along low-speed, low-traffic residential streets. They are designed to offer convenient, low-stress access to local destinations, including transit stops. Neighborhood greenways can be highly cost-effective, because they rely on relatively simple modifications to existing streets such as adding wayfinding signage, pavement markings, traffic calming devices, access management features, and crossing treatments to enhance the bicycling experience.



Traffic calming slows driver speeds to maintain the target 85th percentile speed of 22 mph

Wayfinding signage and pavement markings show users where the route turns

12' minimum clear width

Mini-traffic circles reduce delay for bicyclists and slow drivers in advance of intersections

Shared lane markings should appear immediately after the intersection and then every 250'

Precedents

Seattle, WA

Portland, OR

Portland, OR

References

NACTO *Urban Bikeway Design Guide*: Bicycle Boulevard Route Planning

Portland's Neighborhood Greenways page

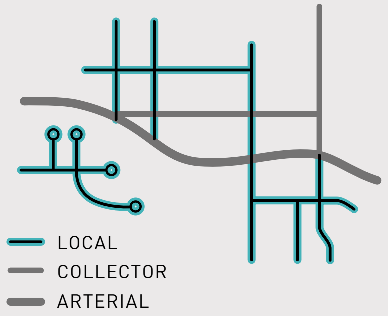
Portland's Neighborhood Greenway Assessment with recommended Performance Measures (pg 10-12)

FHWA *Manual for Uniform Traffic Control Devices:* Chapter 9B: Signs

Application

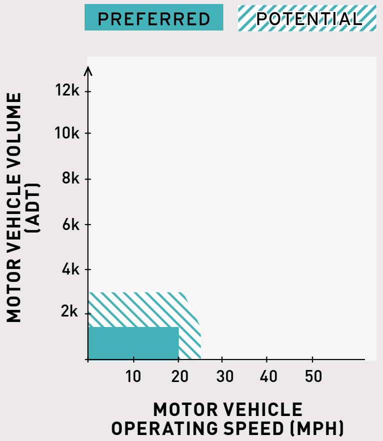
ROADWAY TYPE

Local residential streets that connect to transit stops. Not appropriate for high-frequency bus routes.



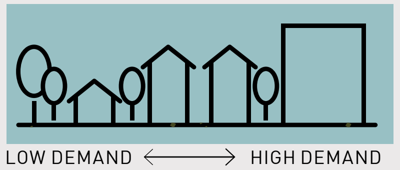
SPEED AND VOLUME

For use on roads with low vehicle speeds and volumes.



WALKING & BIKING PROPENSITY

For use in built-up parts of the region with at least some potential for bicycling. Not appropriate in rural or undeveloped contexts.

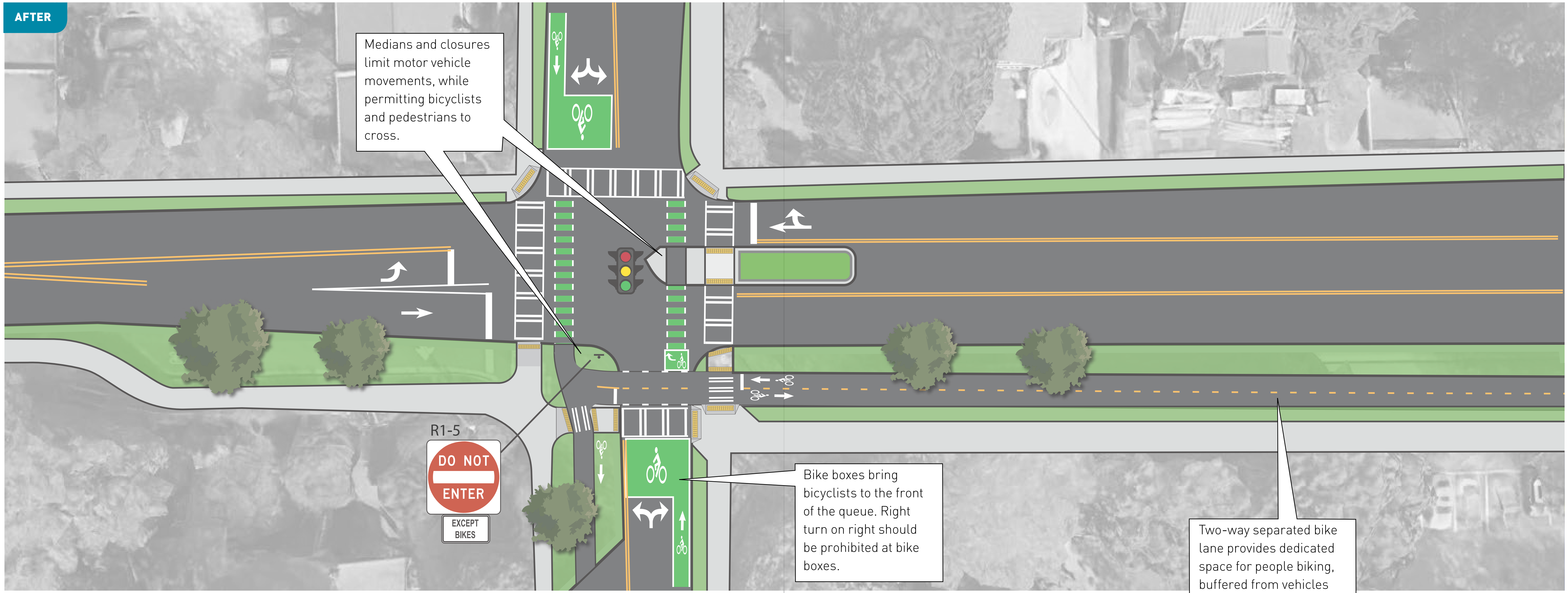


IMPLEMENTATION DIFFICULTY

Requires a small investment for planning, design, and construction.

IDEA:

Neighborhood Greenways



Medians and closures limit motor vehicle movements, while permitting bicyclists and pedestrians to cross.

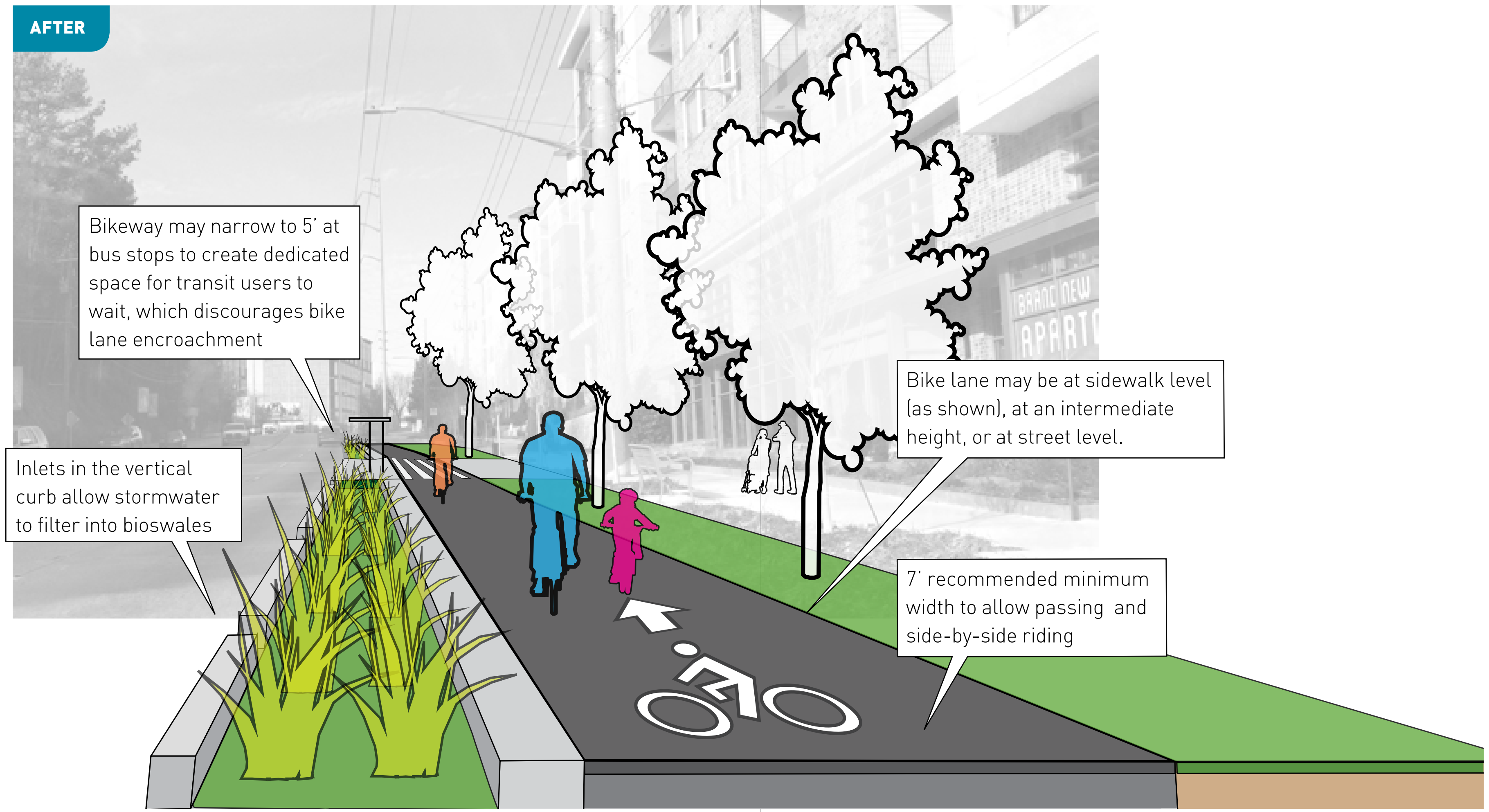
Bike boxes bring bicyclists to the front of the queue. Right turn on right should be prohibited at bike boxes.

Two-way separated bike lane provides dedicated space for people biking, buffered from vehicles and pedestrians with landscape buffersa

IDEA:

Separated Bike Lanes with Integrated Green Infrastructure

Separated Bike Lanes, sometimes called "Cycle Tracks," are dedicated bikeways that use a vertical element to provide separation from motor vehicle traffic. The vertical separation discourages drivers from parking or idling in the bikeway. Including green infrastructure into the design of the buffer space can help manage stormwater, decrease urban heat island effect, and improve air quality. A planting strip between the walkway and bikeway can function as a detectable warning for people with vision impairments, help to minimize conflict between different users, and provide a place for shade trees.



AFTER

Bikeway may narrow to 5' at bus stops to create dedicated space for transit users to wait, which discourages bike lane encroachment

Inlets in the vertical curb allow stormwater to filter into bioswales

Bike lane may be at sidewalk level (as shown), at an intermediate height, or at street level.

7' recommended minimum width to allow passing and side-by-side riding

BEFORE

Precedents

Lincoln, NE

Credit: Joe Linton/Streetsblog L.A.

Temple City, CA

Credit: Pedestrian and Bicycle Information Center

Indianapolis, IN

References

NACTO *Urban Bikeway Design Guide*: Cycle Tracks

FHWA *Separated Bike Lane Planning and Design Guide:* Chapter 5: Menu of Design Recommendations

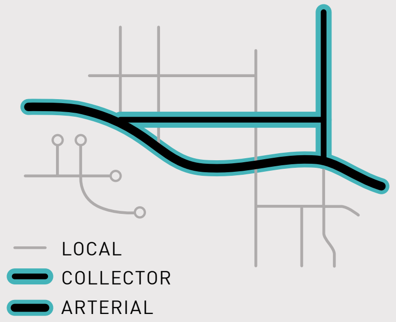
NACTO *Transit Street Design Guide:* Green Infrastructure

MassDOT Separated Bike Lane Planning & Design Guide: Chapter 3: General Design Considerations

Application

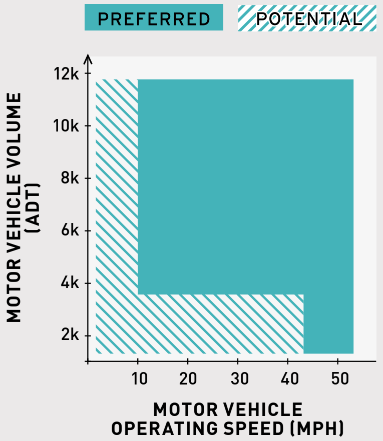
ROADWAY TYPE

Serves primary connections on major roads through and across communities.



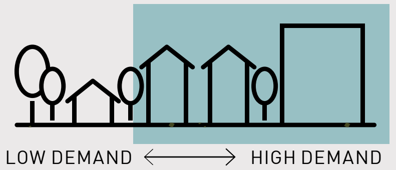
SPEED AND VOLUME

For use on roads with high motor vehicle volumes, and moderate to high speed motor vehicle traffic.



WALKING & BIKING PROPENSITY

For use in parts of the region with moderate to high walking, biking, and transit propensity.

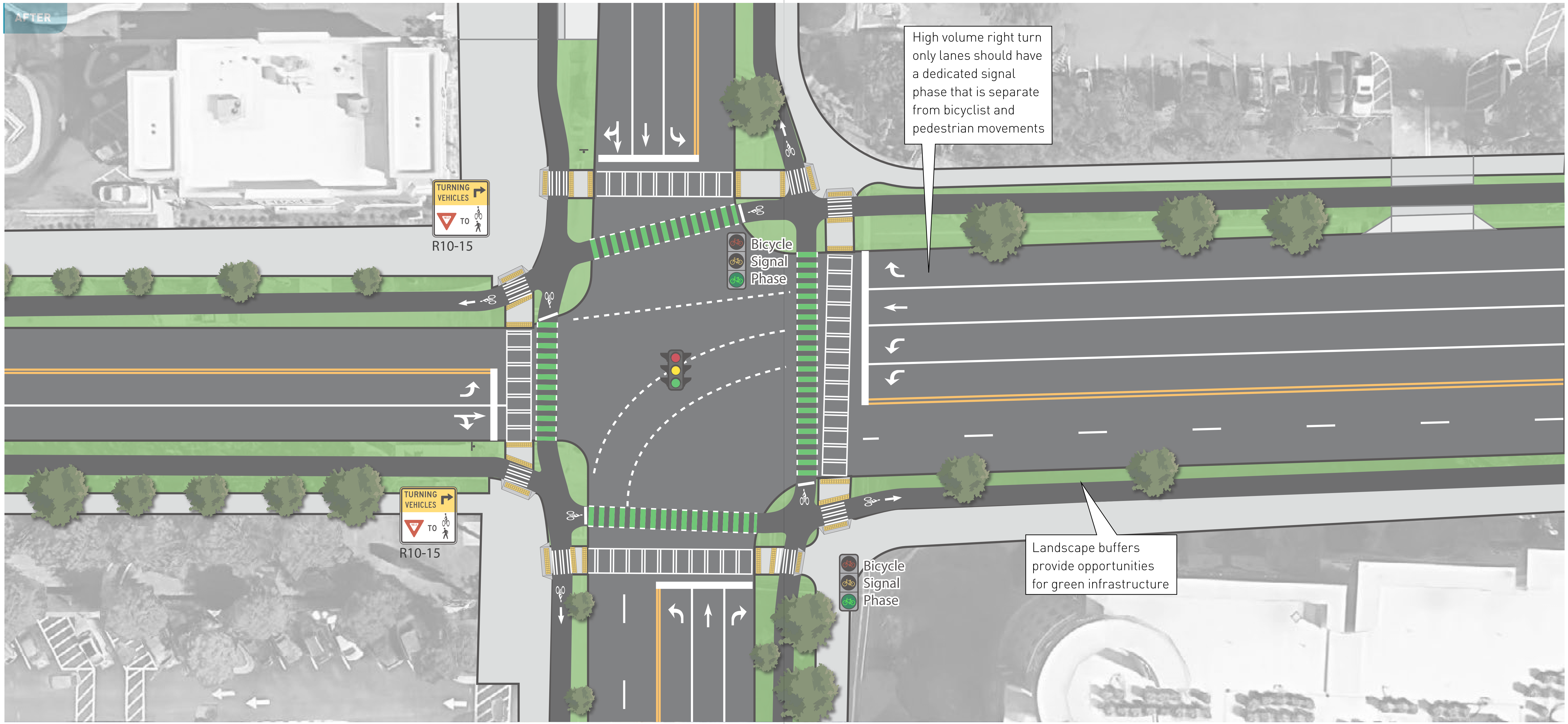


IMPLEMENTATION DIFFICULTY

Requires a significant investment for planning, design, and construction.

IDEA:

Separated Bike Lanes with Integrated Green Infrastructure



High volume right turn only lanes should have a dedicated signal phase that is separate from bicyclist and pedestrian movements

Landscape buffers provide opportunities for green infrastructure

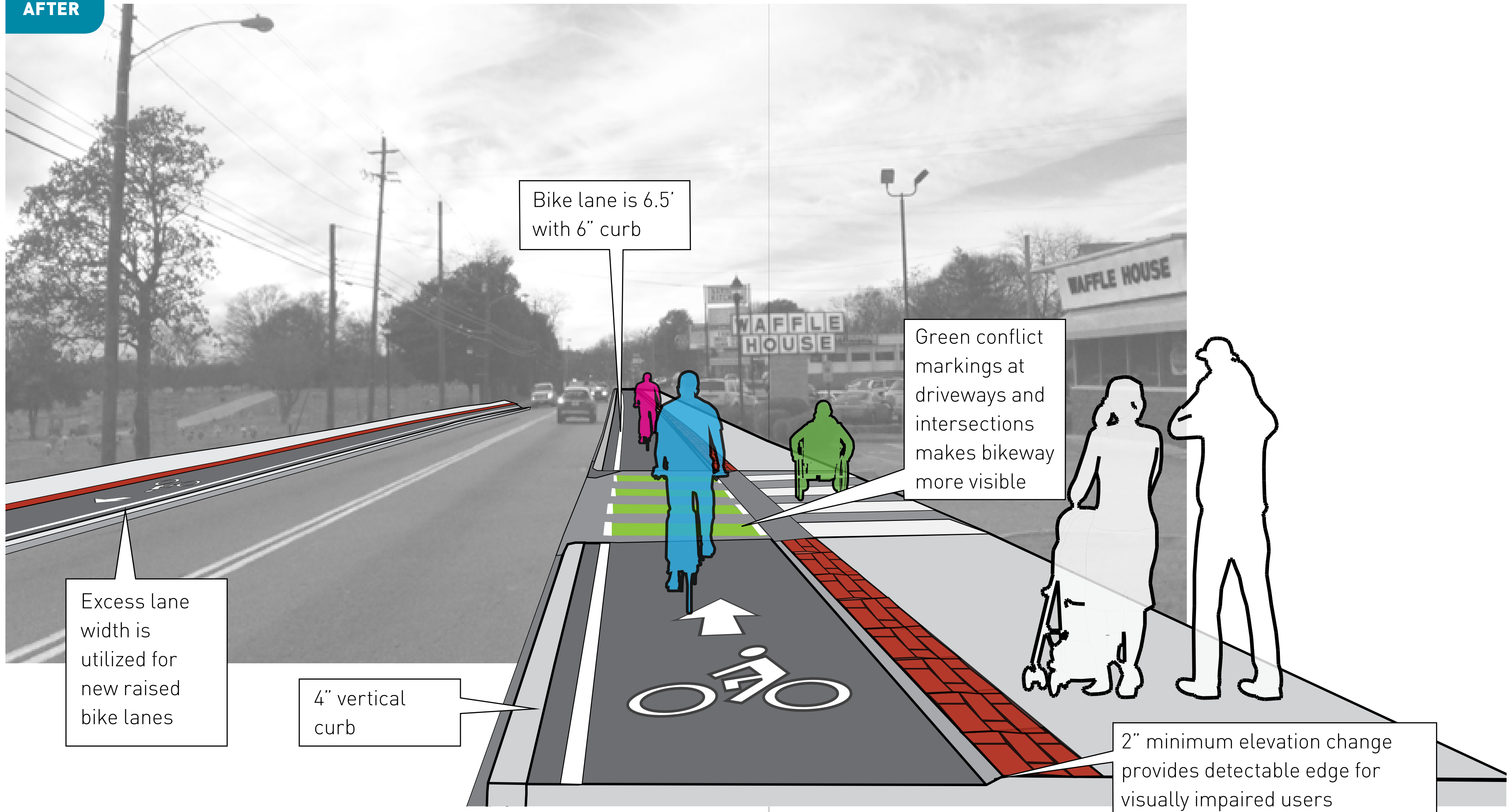
IDEA:

Raised One-Way Separated Bike Lanes

Raised Bike Lanes, also known as "raised cycle tracks," are a type of separated bike lane that use an elevated surface to provide vertical separation from the street. Raised bike lanes are designed to discourage encroachment by motor vehicles, particularly when they are configured with vertical curbs. Because of this they work well on roads with frequent bus service. Raised bike lanes are appropriate in constrained locations where horizontal space for a street buffer is limited. Elevating the bike lane also makes it easier to create raised bicycle crossings at driveways and cross streets.

BEFORE

AFTER



Bike lane is 6.5' with 6" curb

Green conflict markings at driveways and intersections makes bikeway more visible

Excess lane width is utilized for new raised bike lanes

4" vertical curb

2" minimum elevation change provides detectable edge for visually impaired users

Precedents

Cambridge, MA

Bend, OR

Cambridge, MA

References

NACTO *Urban Bikeway Design Guide*: Raised Cycle Tracks

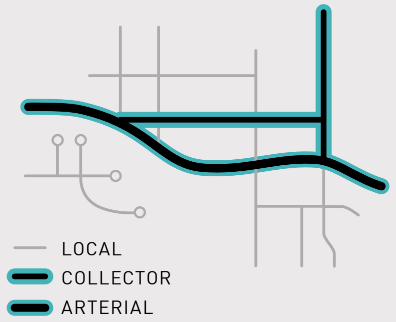
FHWA Separated Bike Lane Planning and Design Guide: Chapter 5: Menu of Design Recommendations

MassDOT Separated Bike Lane Planning & Design Guide: Chapter 3: General Design Considerations

Application

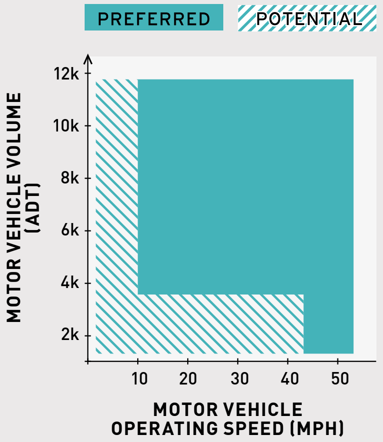
ROADWAY TYPE

Serves primary connections on major roads through and across communities.



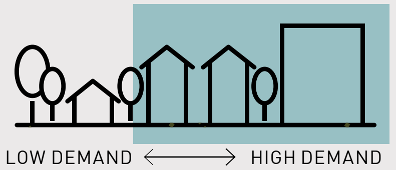
SPEED AND VOLUME

For use on roads with high motor vehicle volumes, and moderate to high speed motor vehicle traffic.



WALKING & BIKING PROPENSITY

For use in parts of the region with moderate to high walking, biking, and transit propensity.

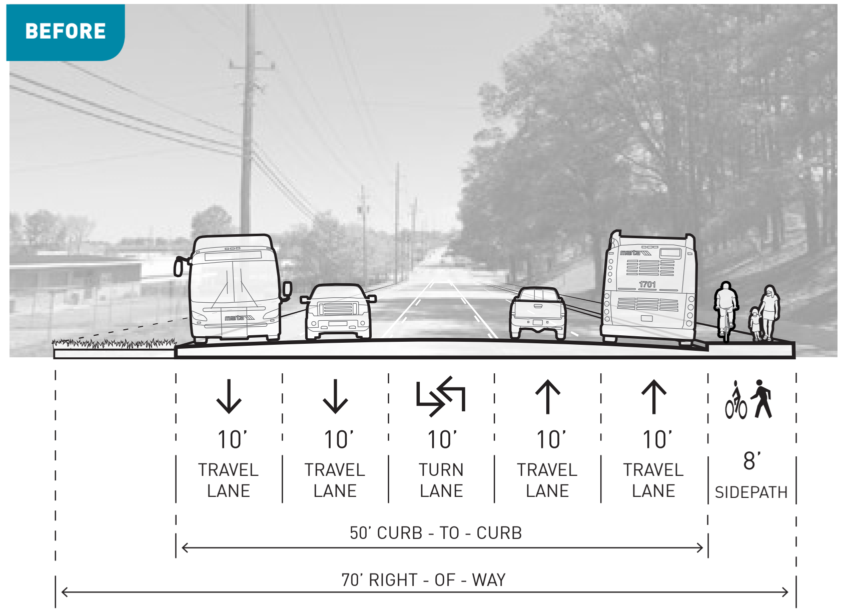


IMPLEMENTATION DIFFICULTY

Requires a significant investment for planning, design, and construction.

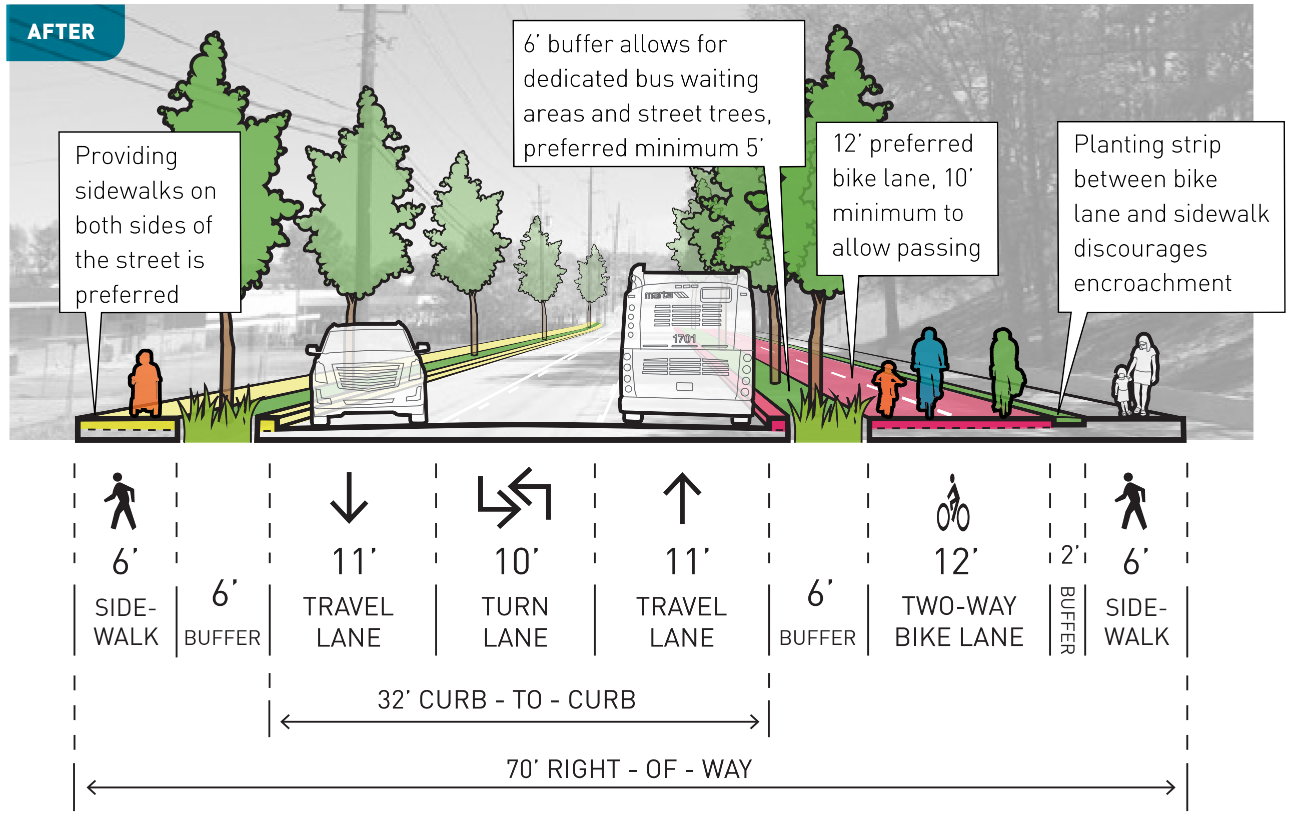
IDEA:

Separated Two-Way Bike Lane



Separated two-way bike lanes, when combined with landscape buffers and a sidewalk, are similar to conventional shared use sidepaths, but with exclusive space for each user type.

Separating bicyclists from pedestrians can increase comfort and safety for both user types since people biking tend to travel at higher speeds than people walking. Two sets of furnishing zones or landscape buffers create a high-quality user experience for people walking, biking, and waiting for transit. Driveways and intersections present unique challenges for two-way separated bike lane design. Please consult the references listed on the facing page for more information.



Providing sidewalks on both sides of the street is preferred

6' buffer allows for dedicated bus waiting areas and street trees, preferred minimum 5'

12' preferred bike lane, 10' minimum to allow passing

Planting strip between bike lane and sidewalk discourages encroachment

Precedents

Seattle, WA

Credit: Pedestrian and Bicycle Information Center

Indianapolis, IN

Portland, OR

References

NACTO *Urban Bikeway Design Guide*: Raised Cycle Tracks

NACTO *Urban Bikeway Design Guide*: Two-Way Cycle Tracks

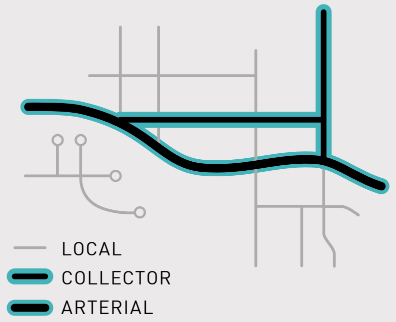
FHWA *Separated Bike Lane Planning and Design Guide*: Chapter 5: Menu of Design Recommendations

MassDOT *Separated Bike Lane Planning & Design Guide*: Chapter 5: Curbside Activity Design

Application

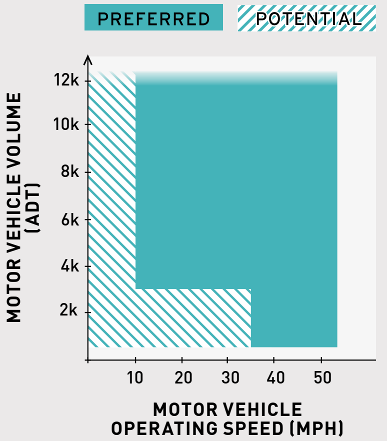
ROADWAY TYPE

Serves primary connections on major roads through and across communities.



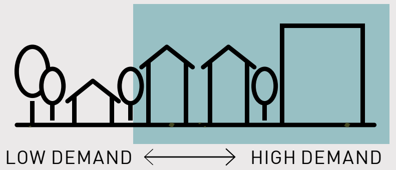
SPEED AND VOLUME

For use on roads with moderate to high vehicle speeds and volumes.



WALKING & BIKING PROPENSITY

For use in parts of the region with moderate to high walking, biking, and transit propensity.



IMPLEMENTATION DIFFICULTY

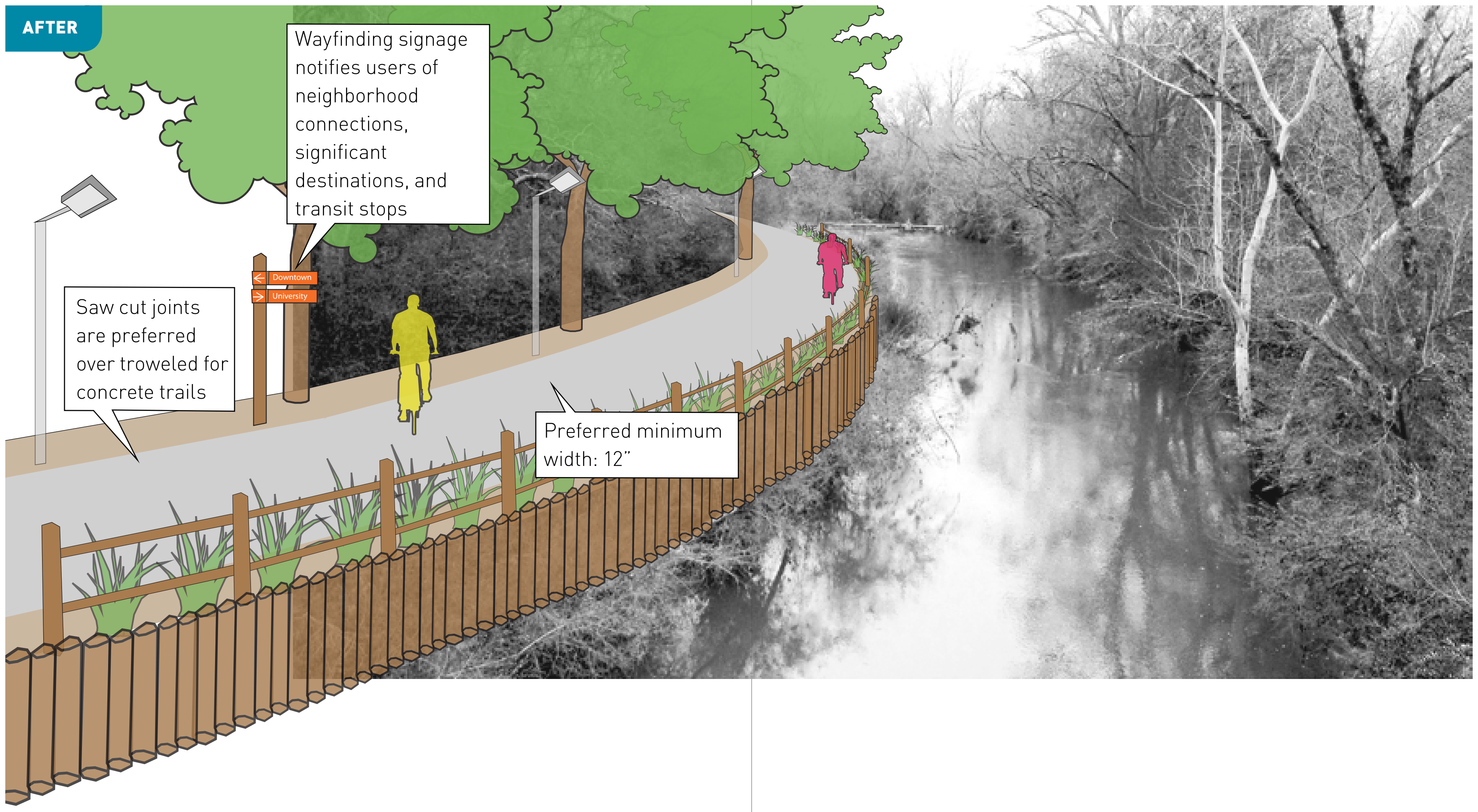
Requires a significant investment for planning, design, and construction.

IDEA:

Greenway Trail

Riparian, utility, and former or active rail corridors can fill a gap in the bike network where it is not feasible to make a comfortable travel experience with the existing road network. Greenway trails can expect a wide variety of users, from bicyclists to skateboarders to pedestrians. Where trails intersect roads at-grade, appropriate pavement markings, signage, and traffic signals or beacons should be used so there is no interruption in the low-stress environment. Where possible, trail spurs should connect users directly to transit facilities.

AFTER

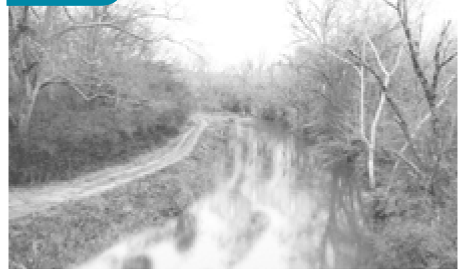


Wayfinding signage notifies users of neighborhood connections, significant destinations, and transit stops

Saw cut joints are preferred over troweled for concrete trails

Preferred minimum width: 12”

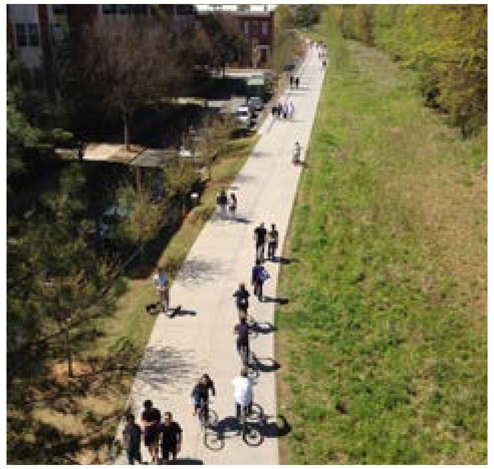
BEFORE



Precedents

Alpharetta, GA

Minneapolis, MN



Atlanta, GA

References

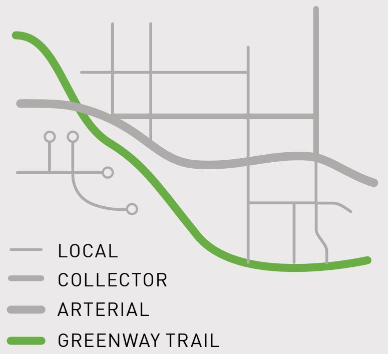
AASHTO. *Guide for the Development of Bicycle Facilities*. Chapter 5: Design of Shared Use Paths. 2012.

Flink, C. *Greenways: A Guide To Planning Design And Development*. 1993.

Application

ROADWAY TYPE

Serves connections independently of the street network. May function as a network alternative to streets.

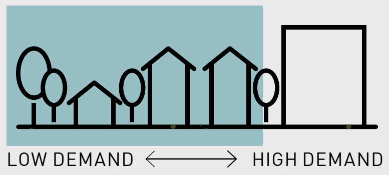


SPEED AND VOLUME

Paths operating in independent corridors are fully separated from traffic. Facility provision is based on opportunity and connectivity rather than roadway context. In some cases an independent corridor may offer similar connectivity and access to destinations as a nearby roadway.

WALKING & BIKING PROPENSITY

Opportunities are most abundant in areas with low to moderate propensity, but urban greenway trails can provide great links to transit.



IMPLEMENTATION DIFFICULTY

Requires a significant investment for planning, design, and construction.

LOW COST, HIGH IMPACT SOLUTIONS FOR IMPROVING CONNECTIVITY TO TRANSIT

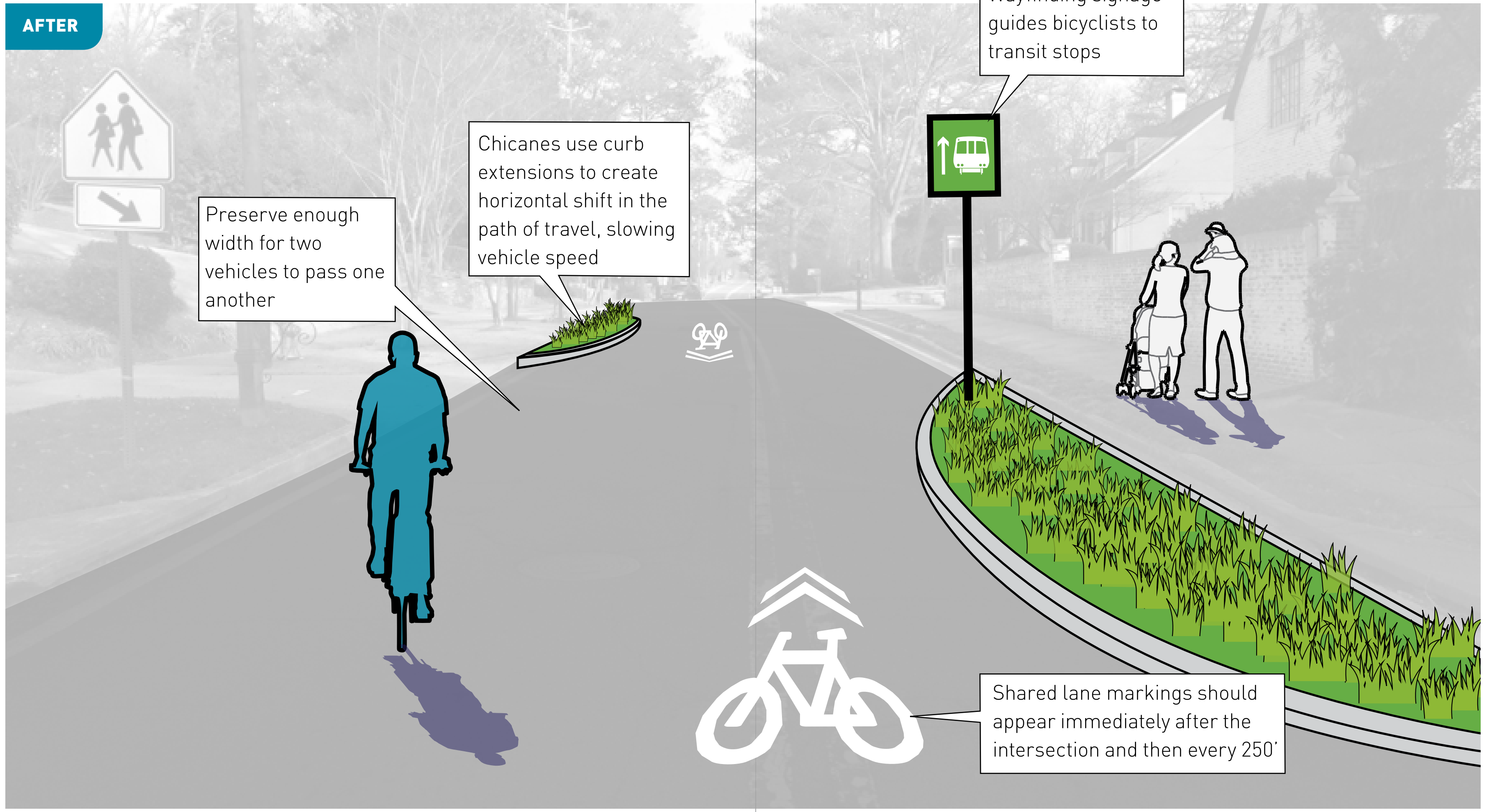
In some cases, there are opportunities to create high quality bike routes to transit without having to make a large investment like reconstructing a road. Where there is an alternative route or excess street capacity, installing a bikeway can make a big impact in improving connectivity to transit stops.

Vancouver Ave Bike Lanes, Portland, OR

IDEA:

Enhanced Shared Roadway

In some highly developed contexts, there may not be an opportunity to create a dedicated bikeway or off-street path and traffic conditions may not allow for a neighborhood greenway. In those cases, a traditional marked shared roadway can be enhanced with bicycle-oriented wayfinding and select traffic calming devices. These facilities are appropriate where there are no viable alternative routes and it is not feasible to reduce traffic volumes and/or speeds along the identified street to neighborhood greenway levels.



Preserve enough width for two vehicles to pass one another

Chicanes use curb extensions to create horizontal shift in the path of travel, slowing vehicle speed

Wayfinding signage guides bicyclists to transit stops

Shared lane markings should appear immediately after the intersection and then every 250'

Precedents

Boise, ID

Seattle, WA

Milwaukee, OR

References

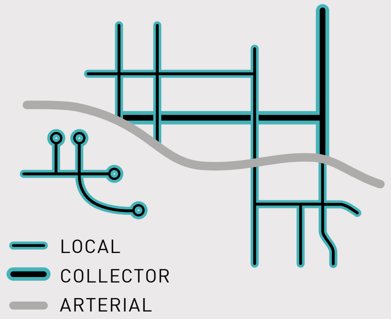
NACTO *Urban Bikeway Design Guide*: Bicycle Boulevards

FHWA *Manual for Uniform Traffic Control Devices*: Chapter 9B: Signs

Application

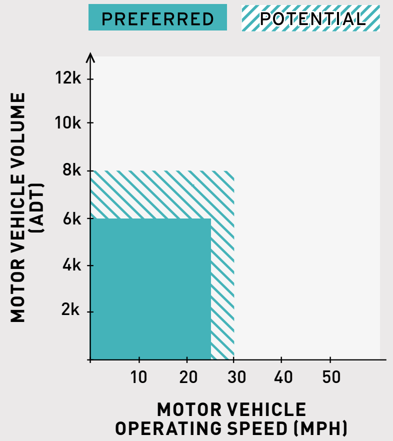
ROADWAY TYPE

Local residential streets that connect to transit stops. Not appropriate for high-frequency transit routes.



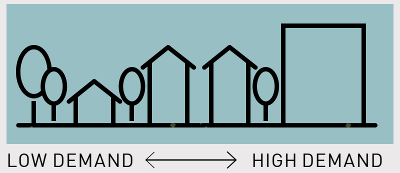
SPEED AND VOLUME

For use on roads with low vehicle speeds and volumes.



WALKING & BIKING PROPENSITY

For use in built-up parts of the region with at least some potential for bicycling. Not appropriate in rural or undeveloped contexts.



IMPLEMENTATION DIFFICULTY

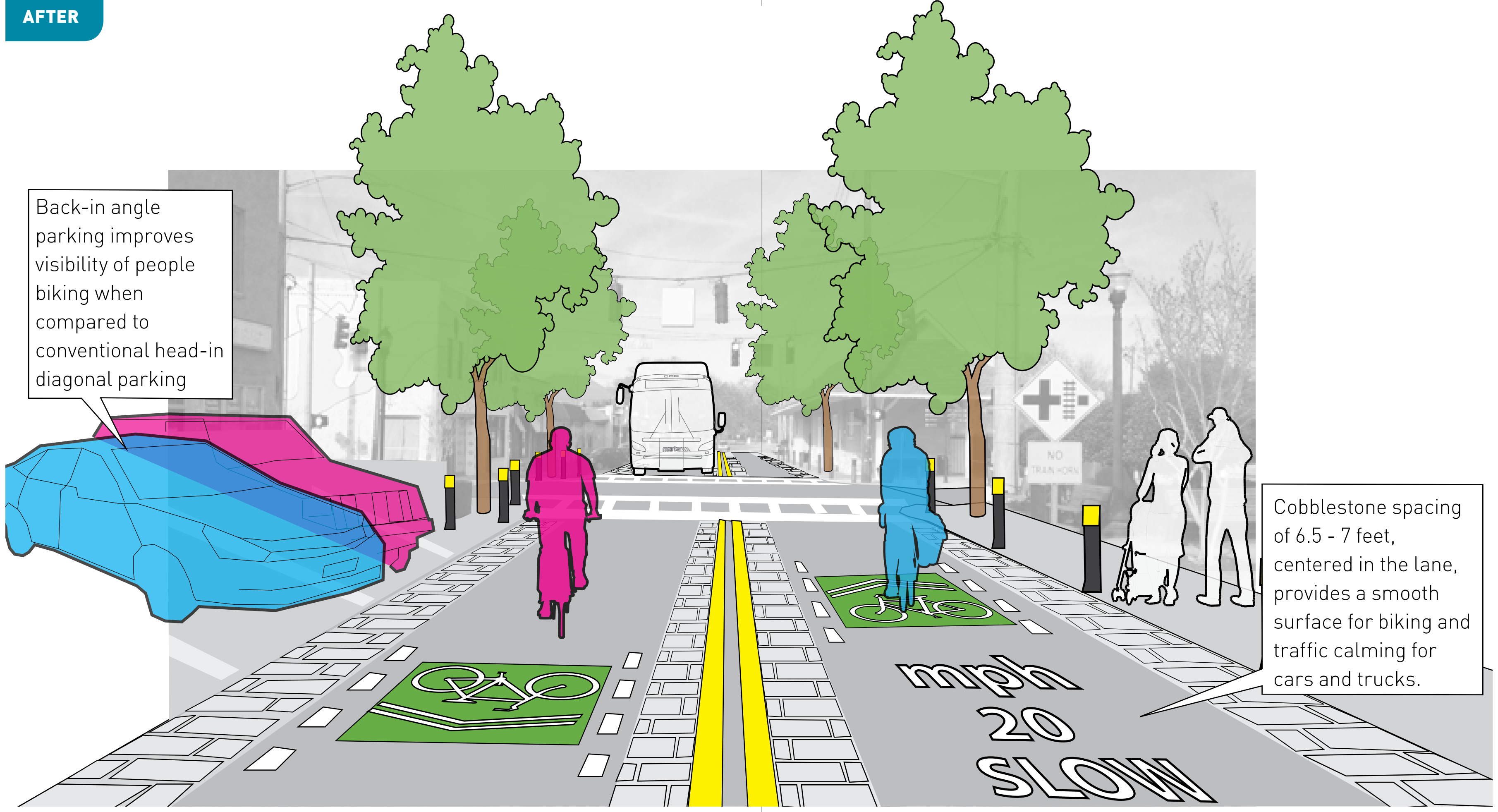
Requires a small investment for planning, design, and construction.

IDEA:

Commercial Greenway

The Atlanta region contains several examples of a major transit station next to a walkable main street, with commercial activity and roads designed to promote access over throughput. These historic downtown streets with limited capacity for dedicated bikeways are ideal candidates for Commercial Greenways. This treatment is similar to Neighborhood Greenways, but with higher vehicle volumes and more diverse activity. Green-backed shared lane markings, signage, and pavement markings reinforce the street as a shared space. Strips of cobblestones underneath car tire paths can slow traffic without affecting bicyclists.

AFTER



Back-in angle parking improves visibility of people biking when compared to conventional head-in diagonal parking

Cobblestone spacing of 6.5 - 7 feet, centered in the lane, provides a smooth surface for biking and traffic calming for cars and trucks.

BEFORE

Precedents

Spokane, WA

Decatur, GA

Portland, OR

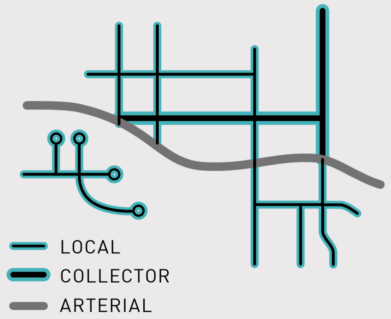
References

NACTO *Urban Bikeway Design Guide*: Commercial Shared Street

Application

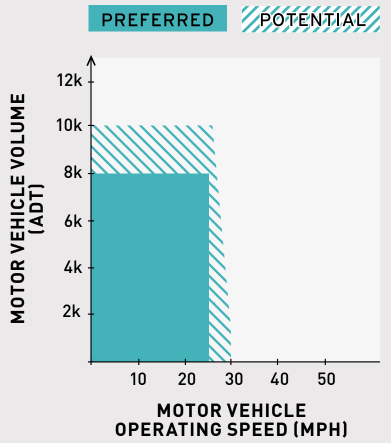
ROADWAY TYPE

Neighborhood commercial streets and town center main streets. Compatible with bus service.



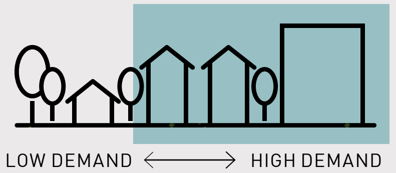
SPEED AND VOLUME

For use on roads with low vehicle speeds and volumes.



WALKING & BIKING PROPENSITY

For use in parts of the region with moderate to high walking, biking, and transit propensity.



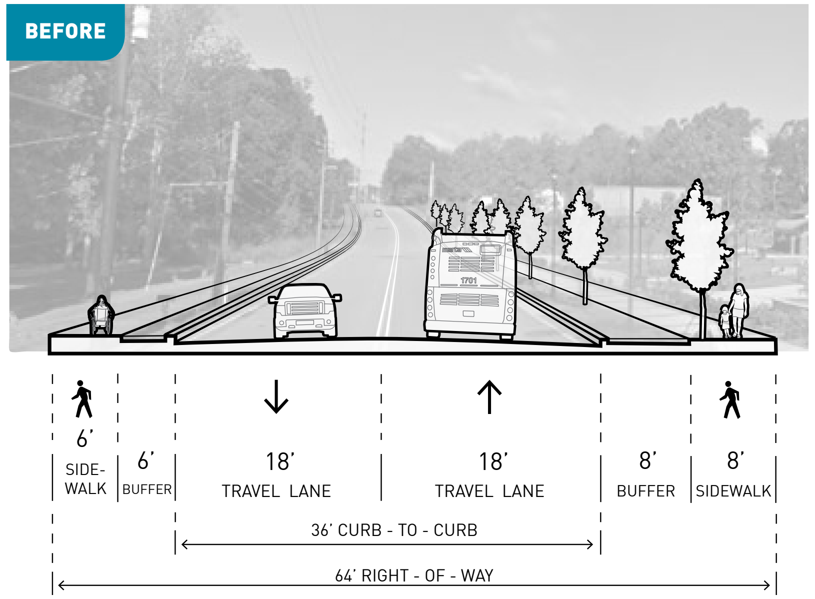
IMPLEMENTATION DIFFICULTY

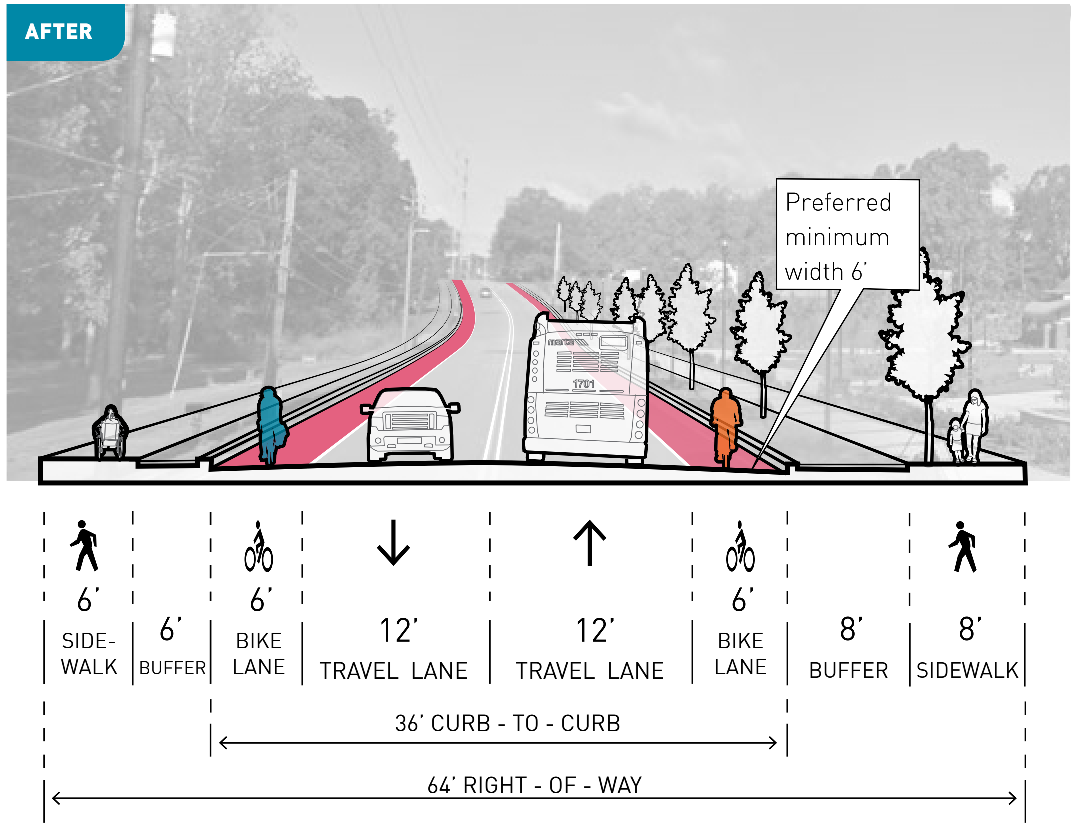
Requires a moderate investment for planning, design, and construction.

IDEA:

Conventional Bike Lanes

Bike lanes designate an exclusive space for bicyclists through the use of pavement markings and signage. Bike lanes make bicycling a more visible and comfortable option for people who usually would drive or walk to a transit stop. Conventional bike lanes work well on collector streets with 3,000 to 9,000 cars per day and where there is potential for a road diet or a reduction in lane width. High frequency bus stops may pose unique challenges with added bus-bike conflicts.





Precedents

Atlanta, GA

Boston, MA

New York, NY

References

NACTO *Urban Bikeway Design Guide*: Conventional Bike Lanes

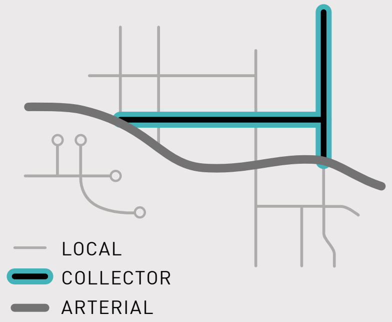
AASHTO *Guide for the Development of Bicycle Facilities:* Chapter 4 (Pg 4-11)

FHWA *Manual on Uniform Traffic Control Devices:* Part 9: Traffic Control for Bicycle Facilities

Application

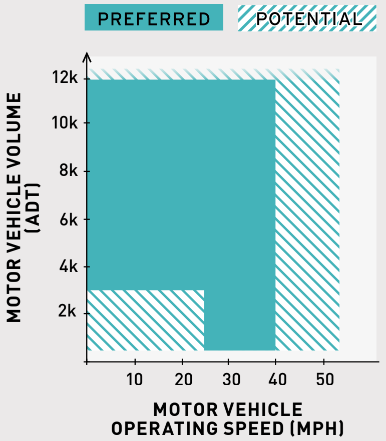
ROADWAY TYPE

Serves primary connections on high-frequency bus and streetcar routes.



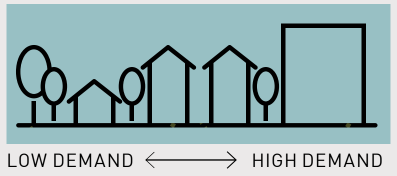
SPEED AND VOLUME

For use on roads with high motor vehicle volumes, and moderate to high speed motor vehicle traffic.



WALKING & BIKING PROPENSITY

For use in parts of the region with moderate to high walking, biking, and transit propensity.



IMPLEMENTATION DIFFICULTY

Requires a small investment for planning, design, and construction.

OVERCOMING MAJOR BARRIERS

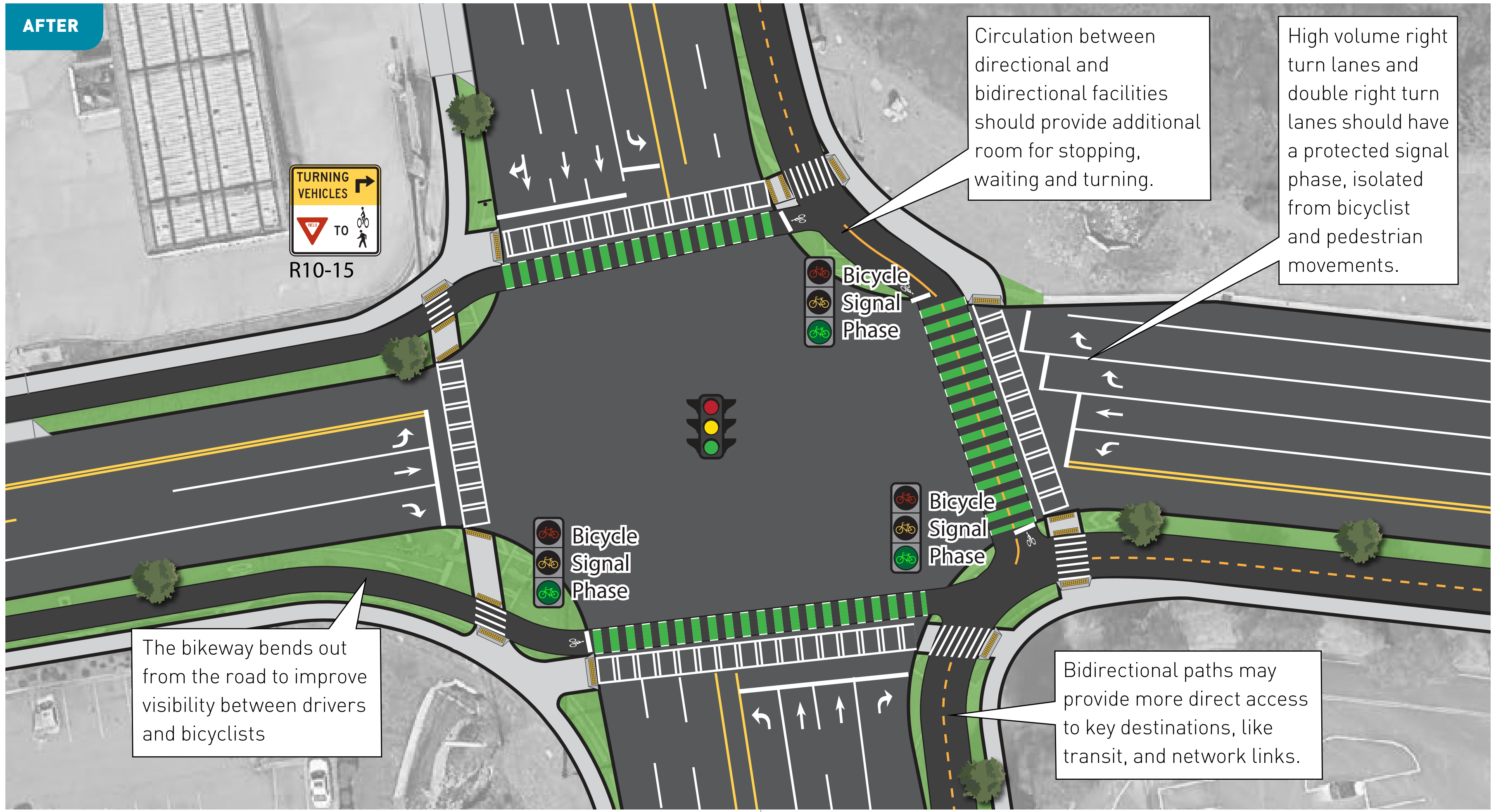
Linear barriers like major roads, rail corridors, and rivers pose a challenge to building a connected, direct bike network to transit locations. Crossings should limit out-of-direction travel and maximize bicyclist comfort. A bicycle route is only as safe and comfortable as its least comfortable intersection, so crossings should be carefully designed to maintain a consistent low-stress environment.

Don Burnett Bicycle-Pedestrian Bridge, Cupertino, CA

IDEA:

All Ages and Abilities Bikeway Crossings of a Major Arterial

An intersection with a multi-lane arterial can make an otherwise low-stress bikeway feel uncomfortable and discourage bicyclists from using it. In many suburban contexts within the Atlanta region, these major arterial roads provide access to popular destinations, so bikeway intersections should be thoughtfully designed to preserve the separation that makes the bikeway comfortable. Signalization should give bicyclists a dedicated phase when there is a high volume of turning vehicles, and signage and pavement markings can make it more intuitive for bicyclists to proceed through the intersection. Raised buffers that set bikeways back at the corners also improve visibility and add a level of comfort for bicyclists.



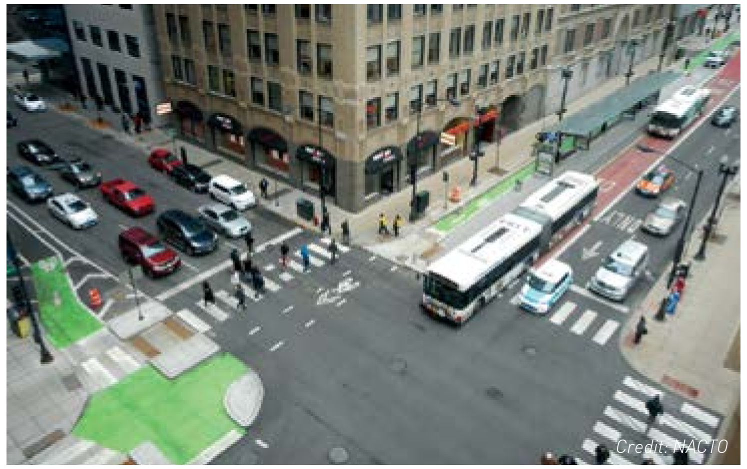
Circulation between directional and bidirectional facilities should provide additional room for stopping, waiting and turning.

High volume right turn lanes and double right turn lanes should have a protected signal phase, isolated from bicyclist and pedestrian movements.

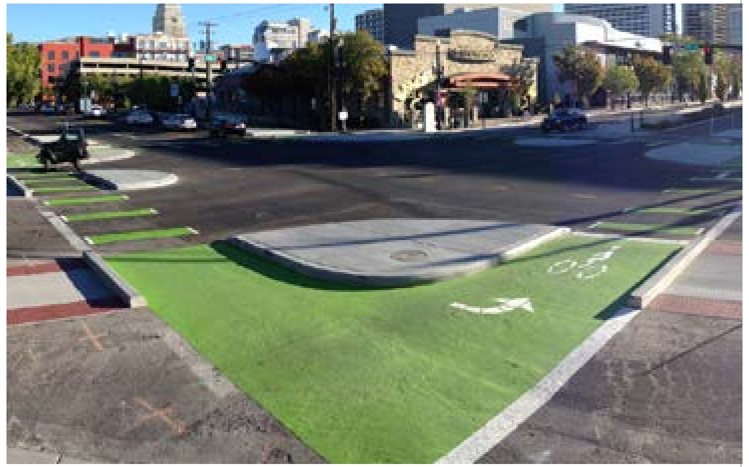
The bikeway bends out from the road to improve visibility between drivers and bicyclists

Bidirectional paths may provide more direct access to key destinations, like transit, and network links.

Precedents



Chicago, IL



Salt Lake City, UT

San Jose, CA

References

Alta Planning and Design. *Evolution of the Protected Intersection.*

FHWA *Manual on Uniform Traffic Control Devices:* Interim Approval for Optional Use of Green Colored Pavement for Bike Lanes (IA-14).

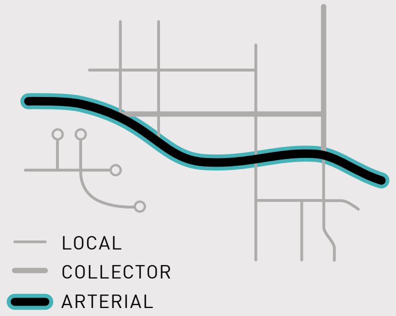
FHWA. *Manual on Uniform Traffic Control Devices:* Interim Approval for Optional Use of a Bicycle Signal Face (IA-16).

NACTO. *Urban Bikeway Design Guide:* Bicycle Signal Heads.

Application

ROADWAY TYPE

Where bikeways cross major arterial roadways.

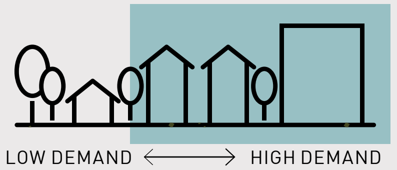


SPEED AND VOLUME

The intersection where this treatment would be appropriate generally involve at least one road with heavy volumes and high speeds, but there is not a specified range of volumes and speeds for which this is appropriate.

WALKING & BIKING PROPENSITY

For use in parts of the region with moderate to high walking, biking, and transit propensity.



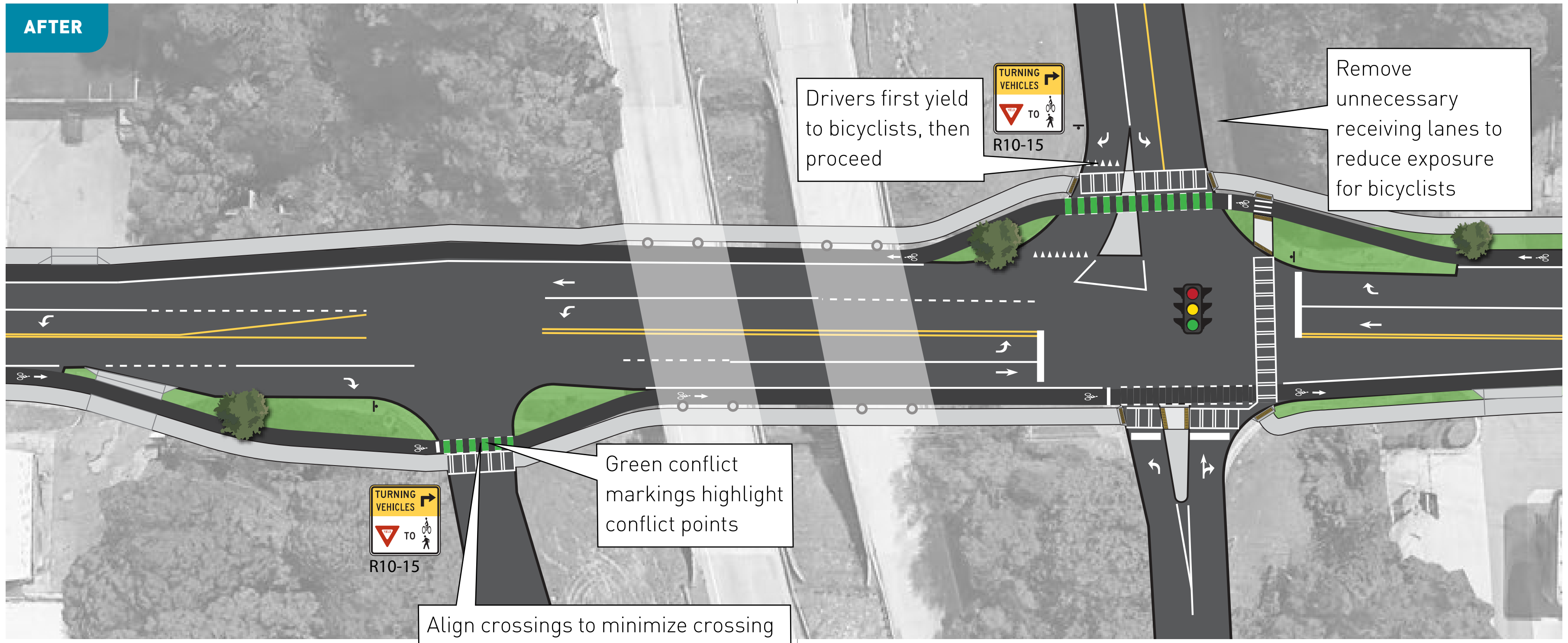
IMPLEMENTATION DIFFICULTY

Requires a significant investment for planning, design, and construction.

IDEA:

Lower Stress Bikeway Crossings at Freeway On-Ramps

Bikeways at freeway crossings are problematic because on- and off-ramps often have wide turn radii that encourage drivers to make the turn without slowing or checking for bicyclists to their right. This creates right-hook conflicts for bicyclists. To mitigate this conflict, the bikeway should bend out from the road so drivers have completed more of the turn before they intersect the bikeway, thus making it easier for them to turn and see the cyclists. Signage can remind drivers that they should yield to bicyclists and pedestrians, and reduced turn radii forces drivers to make the turn more slowly, giving them more time to react.



Drivers first yield to bicyclists, then proceed

Remove unnecessary receiving lanes to reduce exposure for bicyclists

Green conflict markings highlight conflict points

Align crossings to minimize crossing distance and position to provide increased separation to allow motorists an opportunity to yield

Precedents

Davis, CA

New Orleans, LA

Salt Lake City, UT

References

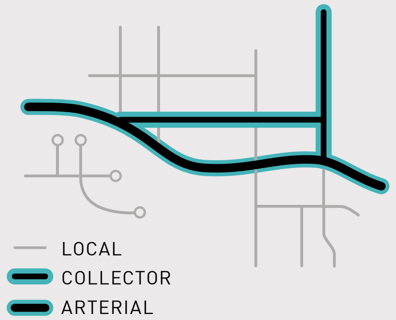
AASHTO *Guide for the Development of Bicycle Facilities:* Bicycle Travel Through Interchange Areas (pg 4-57)

FHWA *Manual on Uniform Traffic Control Devices:* Interim Approval for Optional Use of Green Colored Pavement for Bike Lanes (IA-14).

Application

ROADWAY TYPE

Locations where vehicles enter and exit freeways. Typically along arterial and collector roads.

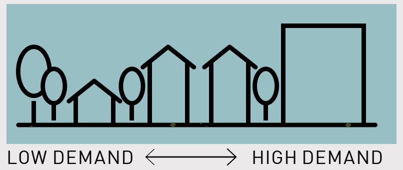


SPEED AND VOLUME

Freeway on- and off- ramps are generally located on roads with higher speeds and volumes, but does not have a specified speed and volume criteria.

WALKING & BIKING PROPENSITY

For use in parts of the region with low to high walking, biking, and transit propensity.



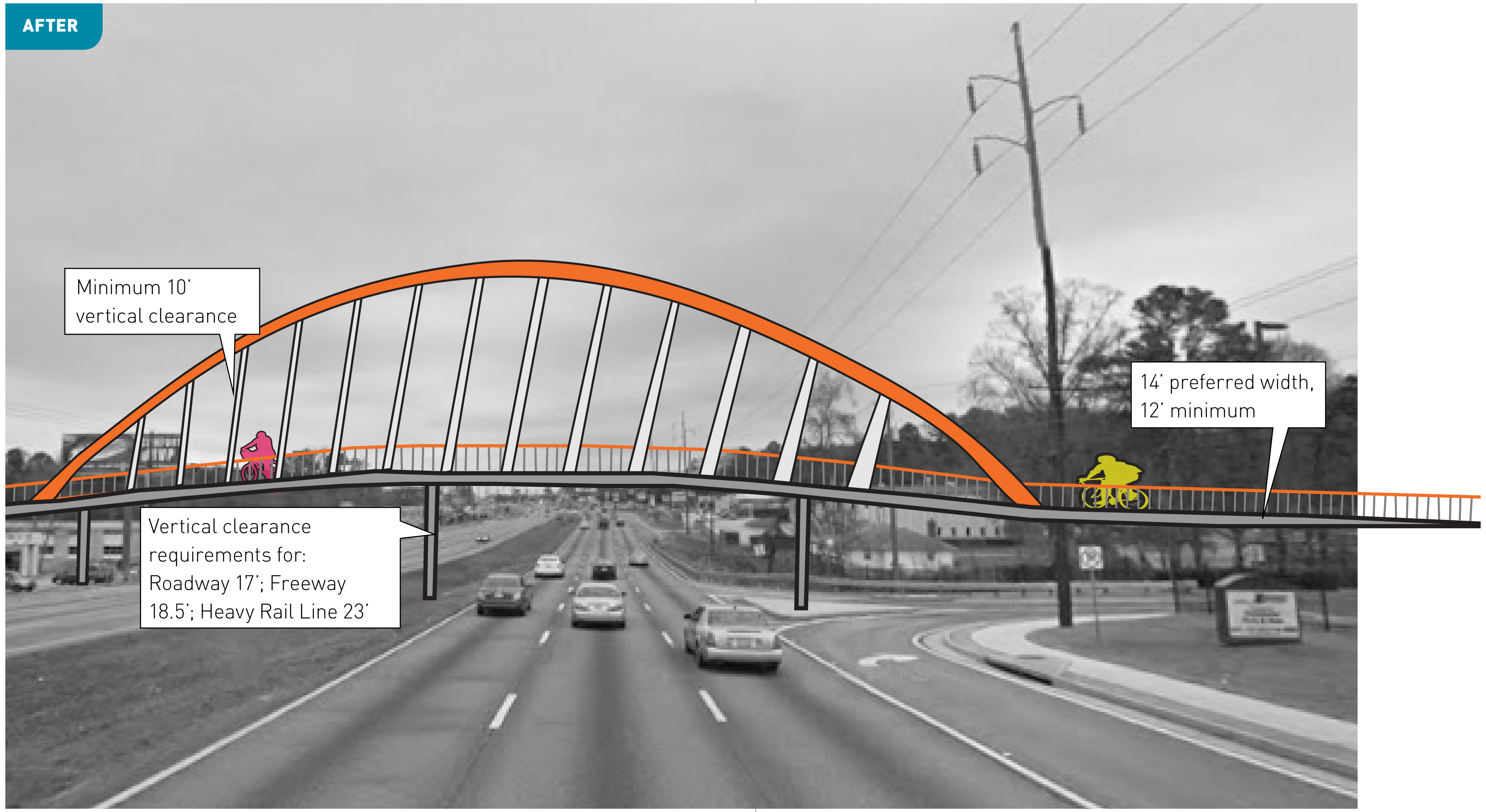
IMPLEMENTATION DIFFICULTY

Requires a moderate investment for planning, design, and construction.

IDEA:

Bicycle and Pedestrian Bridges

Bicycle and pedestrian overcrossings provide non-motorized system links by connecting two sides of otherwise impassible barriers such as waterways or freeways. Bicycle and pedestrian bridges may also be considered over high-speed multi-lane arterials where at-grade crossings cannot be sufficiently improved and the overcrossing provides a direct high-comfort connection to a transit stop or park and ride lot from a major bikeway. Bridges and overcrossings are a significant investment and should be considered carefully within the context of the larger multi-modal transportation system.


AFTER
Minimum 10' vertical clearance
14' preferred width, 12' minimum
Vertical clearance requirements for: Roadway 17'; Freeway 18.5'; Heavy Rail Line 23'

Precedents

Berkeley, CA

Atlanta, GA

Greenville, SC

References

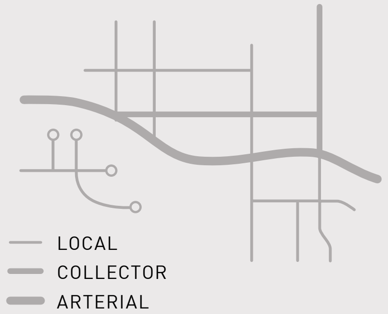
FHWA *Guide for the Development of Bicycle Facilities:* 5.2.10 Bridges and Underpasses

US Department of Justice *2010 ADA Standards for Accessible Design:* 2010 Standards for State and Local Government Facilities: Title II

Application

ROADWAY TYPE

Bicycle and pedestrian bridges can connect to any roadway that facilitates connections to transit.

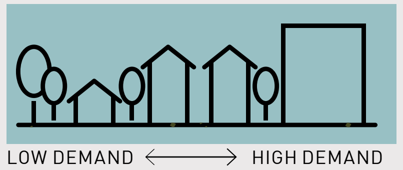


SPEED AND VOLUME

Bicycle and pedestrian bridges can cross many types of barriers such as waterways, freeways, and railways. Bicycle and pedestrian overcrossings may also be considered over high-speed multi-lane arterials where at-grade crossings cannot be sufficiently improved and the overcrossing provides a direct high-comfort connection to a transit stop or park and ride lot from a major bikeway.

WALKING & BIKING PROPENSITY

For use in parts of the region with low to high walking, biking, and transit propensity.



IMPLEMENTATION DIFFICULTY

Requires a significant investment for planning, design, and construction.

Bikestation Washington DC,
Washington, DC

BIKE PARKING IDEAS

Bike parking extends the transit access shed beyond the distance people are willing to walk, expanding healthy transportation options while supporting growth in transit ridership. Convenient and secure bicycle parking can take many forms depending on available space and transit service type. Short-term and long-term bicycle parking options are presented here, with specific ideas that vary from simple inverted “U” racks for individual bikes to secure parking structures that can accommodate large numbers of bicyclists. Currently, many transit stations are located in areas where the land use favors automobile access. However, as communities across the Atlanta region transition to becoming more bike-friendly, these areas present an opportunity for re-envisioning underutilized land as vibrant mixed-use multimodal hubs.

IDEA:

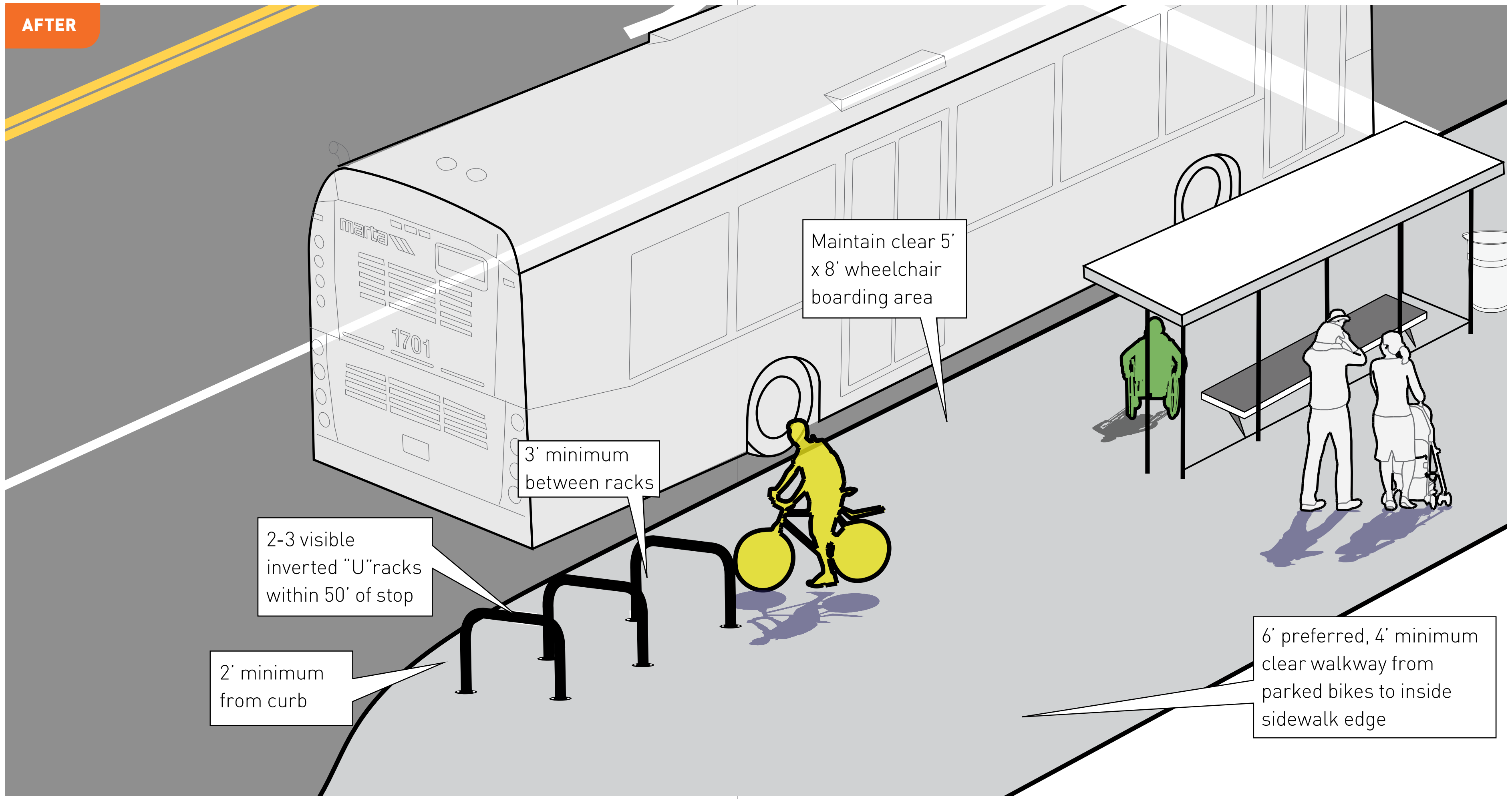
Informal, Free Bike Parking

Providing short-term bicycle parking is affordable, easy to implement, and does not require very much space.

Bike racks that adhere to best practice guidelines:

- are well-secured to the pavement
- provide at least two points of contact for the frame
- are well-lit and in full view of sidewalks and pedestrian paths
- do not impede on access points to bus stops or along walking routes

While basic inverted "U" racks placed adjacent to stops or outside stations are not intended to function as long-term parking, bicyclists who do not want extra security or to pay an additional fee for membership-based secure bike parking access may store bikes for longer periods of time. Transit agencies should plan for this, and install at least 2 inverted "U" racks at all transit stops regardless of service type. Covered bike parking can be a nice amenity for high-use locations.


AFTER
Maintain clear 5' x 8' wheelchair boarding area
3' minimum between racks
2-3 visible inverted "U"racks within 50' of stop
2' minimum from curb
6' preferred, 4' minimum clear walkway from parked bikes to inside sidewalk edge
marta
1701

Precedents

Atlanta, GA

Athens, GA

Jacksonville, FL

References

APBP *Essentials of Bike Parking:* Short Term Parking (pg 2)

APBP *Bicycle Parking Guidelines:* Chapter 2: Facilities (pg 2-1)

NACTO *Transit Street Design Guide:* Bike Parking

Transportation Research Board (TRB) *Integration of Bicycles and Transit*: Integration of Bicycle Parking and Transit (pg 34)

AASHTO *Guide for the Development of Bicycle Facilities:* Short-term bicycle parking facilities (pg 6-2)

Application

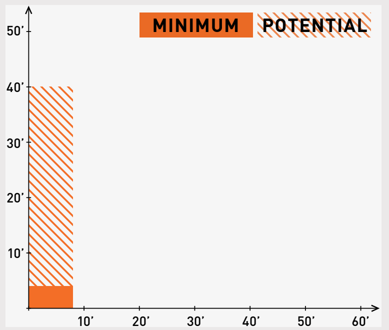
TRANSIT SERVICE TYPE

High-demand local bus routes and heavy rail rapid transit.

LOCAL BUS
REGIONAL EXPRESS COMMUTER BUS
HEAVY RAIL RAPID TRANSIT

SPACE REQUIREMENTS

A 4'x8' space is required for one inverted "U" rack, three inverted "U" racks will require 8'x10', and a bike corral with twelve inverted "U" racks will require 8'x40'.



TIME

Most useful in locations where bikes are expected to be parked for two or fewer hours.

SHORT TERM
LONG TERM

IMPLEMENTATION DIFFICULTY

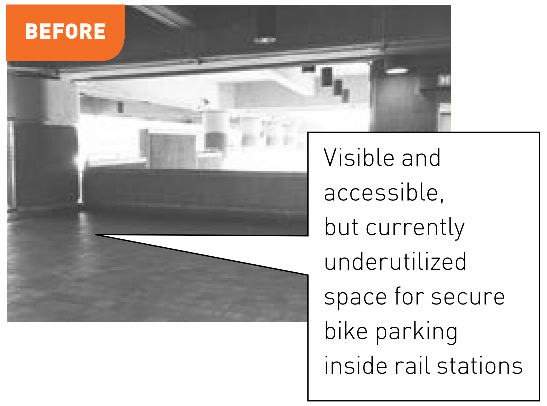
Low investment required for the purchase and installation of short-term bicycle racks.

IDEA:

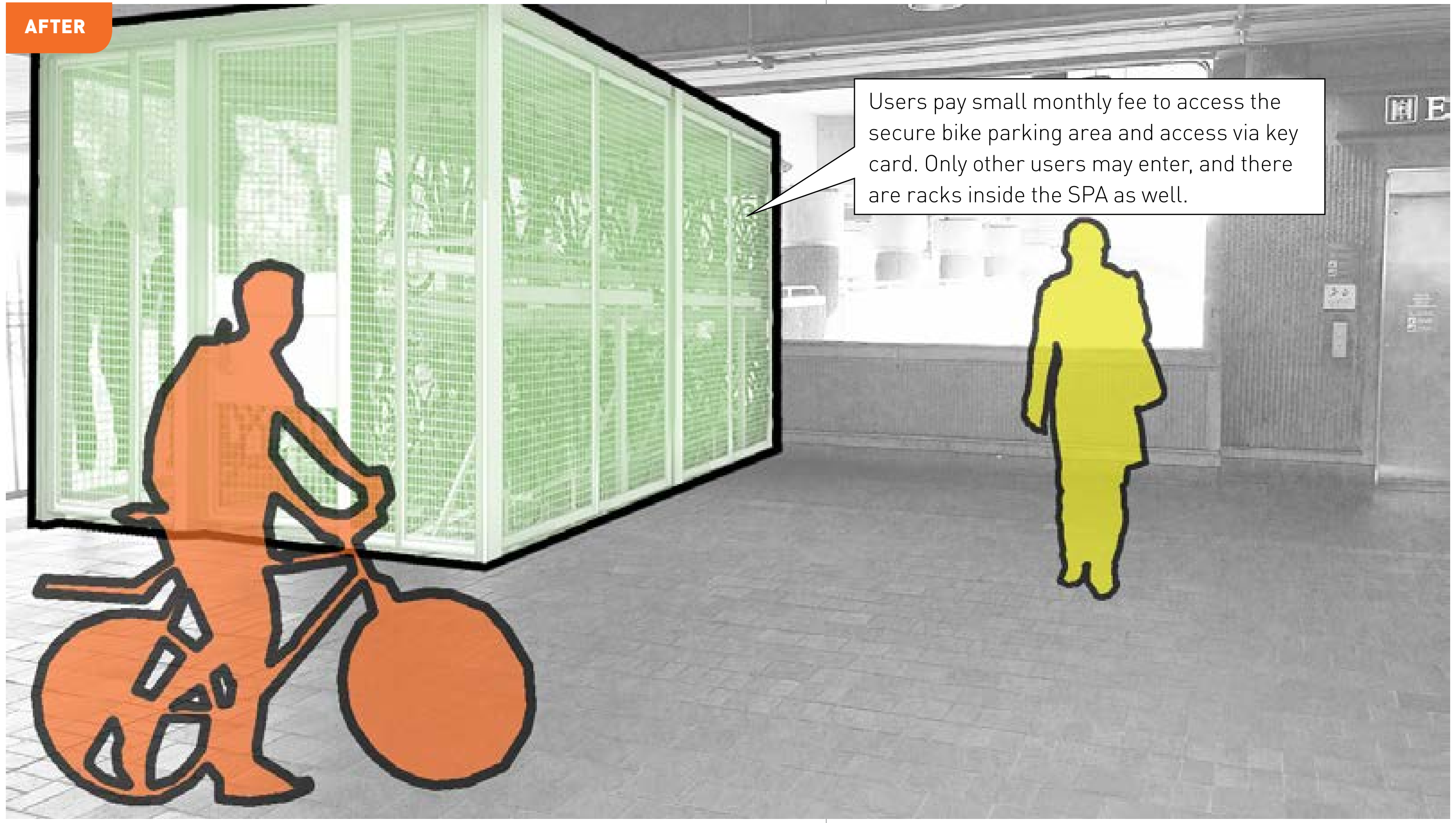
Secure Parking Inside Fare Gates

Recently, MARTA has installed wave racks inside fare gates at selected rail stations. These racks are well-used and provide better security than bike parking outside the station, but lack the added security of a Secure Parking Area (SPA) like a secure room or cage that is accessible only to people who sign up and pay a small monthly fee.

Secure parking inside fare gates may also take the form of attended bike parking or bike valet. Parking areas may be added in existing underutilized areas of the station that are visible to transit users.



Visible and accessible, but currently underutilized space for secure bike parking inside rail stations



Users pay small monthly fee to access the secure bike parking area and access via key card. Only other users may enter, and there are racks inside the SPA as well.

Precedents

San Francisco, CA

Berkeley, CA

Malmo, Sweden

References

APBP *Essentials of Bike Parking:* Long Term Parking (pg 3)

APBP *Bicycle Parking Guidelines:* Chapter 2: Facilities (pg 2-1)

Transportation Research Board (TRB) *Integration of Bicycles and Transit*: Integration of Bicycle Parking and Transit (pg 34)

AASHTO *Guide for the Development of Bicycle Facilities:* Long-term bicycle parking facilities (pg 6-4)

Application

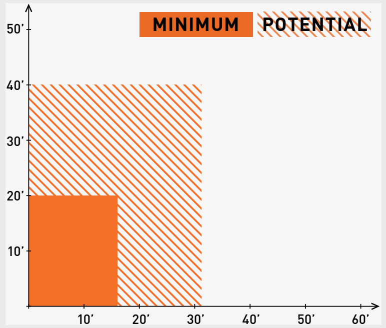
TRANSIT SERVICE TYPE

Heavy rail rapid transit.

LOCAL BUS
REGIONAL EXPRESS COMMUTER BUS
HEAVY RAIL RAPID TRANSIT

SPACE REQUIREMENTS

At least 16' x 20' to accommodate one row of inverted "U" or double-stacked racks, a 5' access aisle, and one row of vertical hanging racks. 31'x40' for freestanding indoor bike room with four rows of bikes and access hallway. Allocated space should align with demand.



TIME

Most useful where bikes are expected to be parked for more than 2 hours.

SHORT TERM
LONG TERM

IMPLEMENTATION DIFFICULTY

Moderate investment required for the purchase, site planning, and installation of pre-fabricated structures.

IDEA:

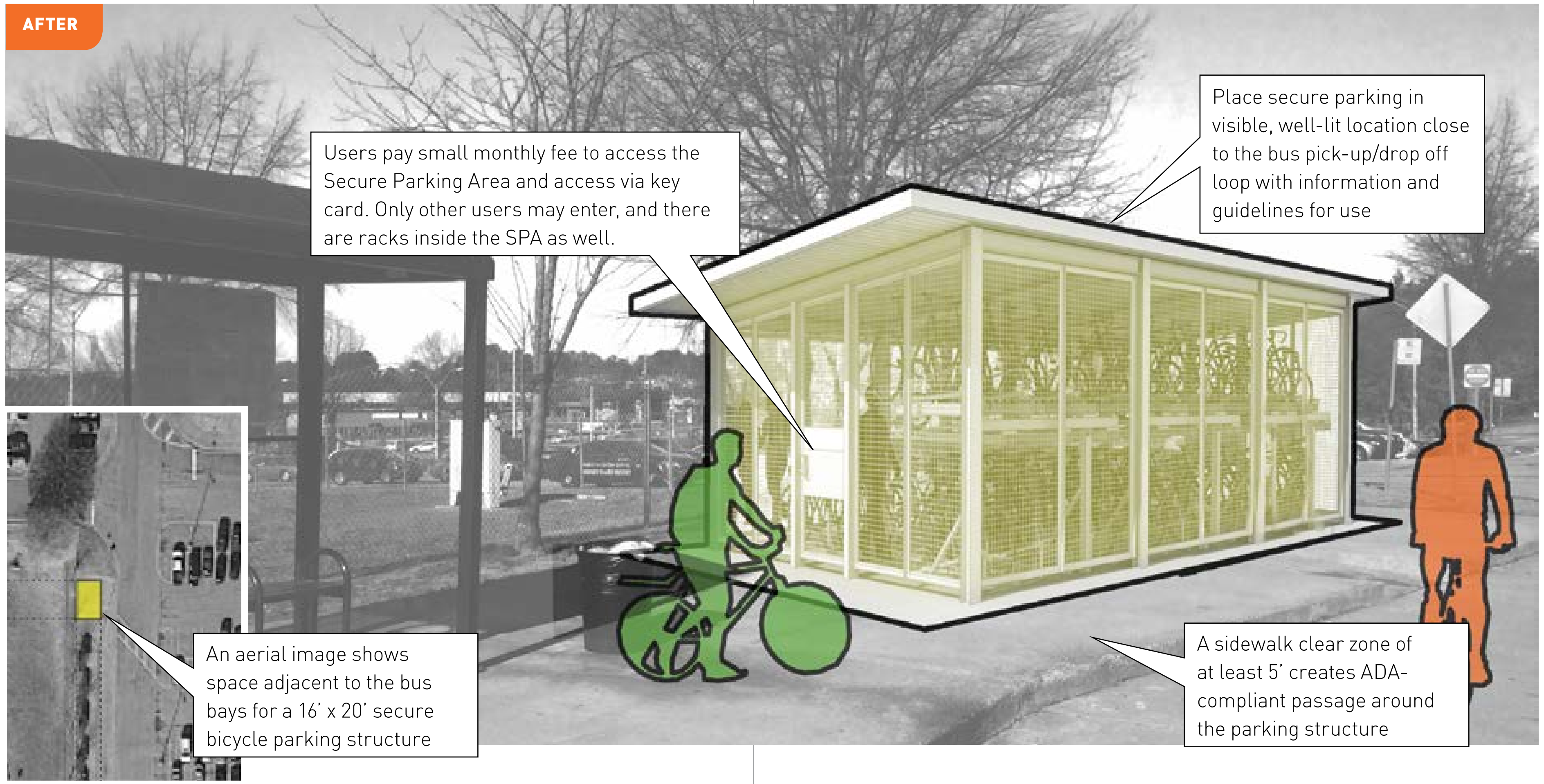
Freestanding Secure Bike Parking Area

Freestanding Secure Bike Parking Areas (or SPAs) provide a modular form of long-term bike parking at relatively low cost. Bike SPAs are designed to accommodate at least one row of inverted "U" racks, and one row of vertical hanging racks. Traditional inverted "U" racks serve bikes that are too heavy to lift are too large to fit in a standard rack, such as heavy e-bikes, bikes with trailers, and cargo bikes.

Access to bike SPAs should be 24/7 and can be integrated with transit cards or passes. Self repair stands and vending machines for accessories and parts can add convenience for commuters.

BEFORE

AFTER



Users pay small monthly fee to access the Secure Parking Area and access via key card. Only other users may enter, and there are racks inside the SPA as well.

Place secure parking in visible, well-lit location close to the bus pick-up/drop off loop with information and guidelines for use

An aerial image shows space adjacent to the bus bays for a 16' x 20' secure bicycle parking structure

A sidewalk clear zone of at least 5' creates ADA-compliant passage around the parking structure

Precedents

Seattle, WA

Boulder, CO

Portland, OR

References

APBP *Essentials of Bike Parking:* Long Term Parking (pg 3)

APBP *Bicycle Parking Guidelines:* Chapter 2: Facilities (pg 2-1)

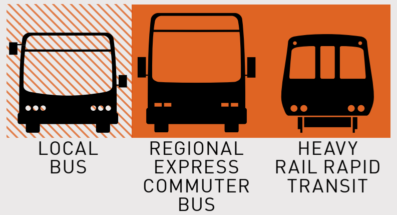
Transportation Research Board (TRB) *Integration of Bicycles and Transit*: Integration of Bicycle Parking and Transit (pg 34)

AASHTO *Guide for the Development of Bicycle Facilities:* Long-term bicycle parking facilities (pg 6-4)

Application

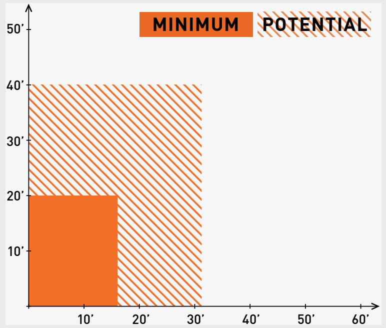
TRANSIT SERVICE TYPE

Regional commuter bus and heavy rail transit. Potentially suitable for local bus stops with high ridership.



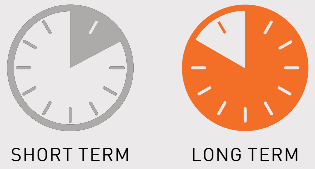
SPACE REQUIREMENTS

At least 16' x 20' to accommodate one row of inverted "U" or double-stacked racks, a 5' access aisle, and one row of vertical hanging racks. 31'x20' for freestanding indoor bike room with two rows of bikes and access hallway.



TIME

Most useful in locations where bikes are expected to be parked for two hours or longer.



IMPLEMENTATION DIFFICULTY

Moderate investment required for the purchase, site planning, and installation of pre-fabricated structures.

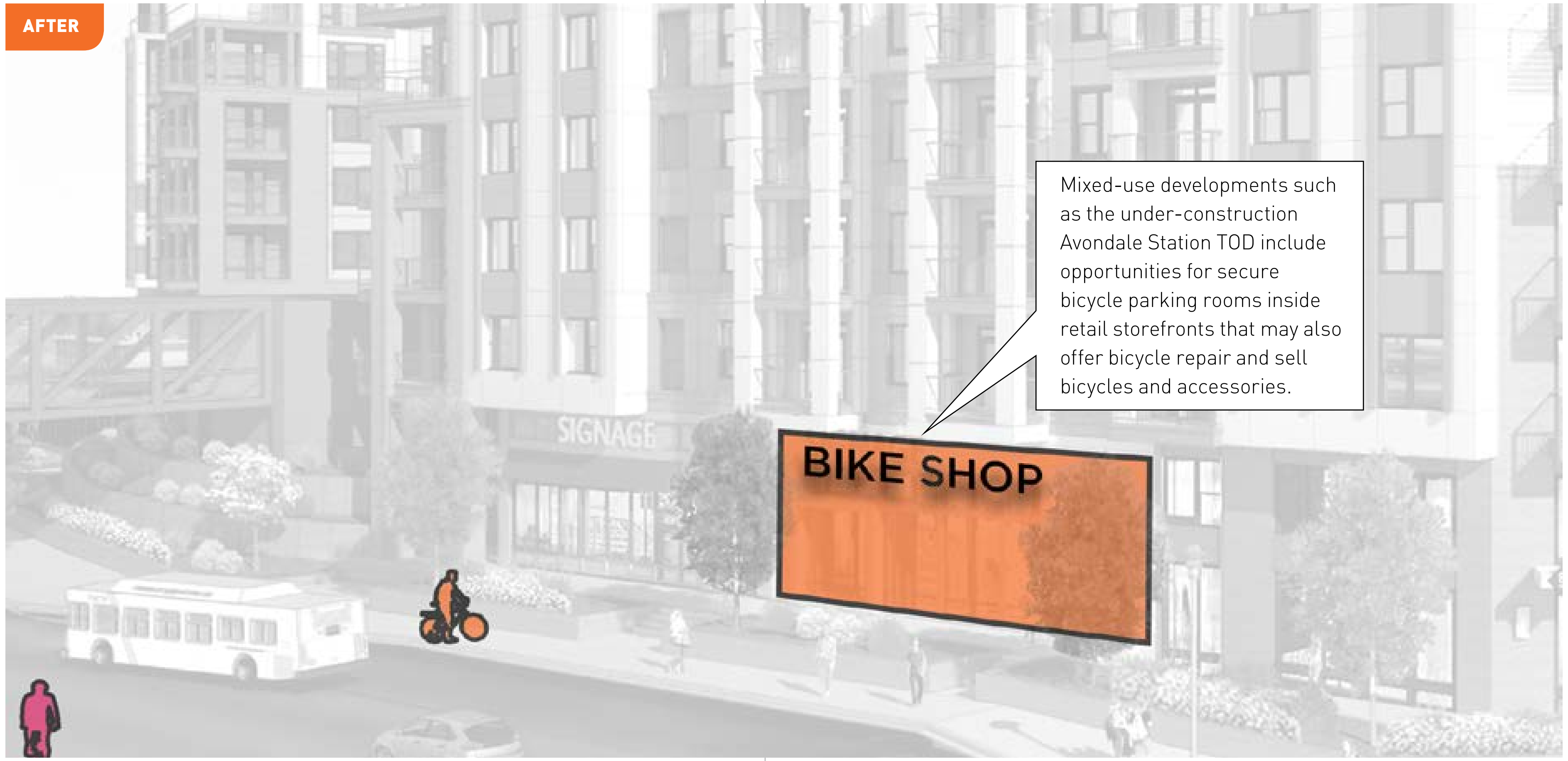
IDEA:
Integrated Indoor Bike Storage

Transit-oriented developments (TOD) such as the mixed-use development across the street from Avondale Station are adding residences, offices, and retail in close proximity to MARTA stations for easy live/work/play/transit access.

Additionally, many station areas such as Lindbergh have existing TOD and nearby retail establishments. This presents an opportunity to open a bike shop or other bicycle-oriented retail with the ability to integrate indoor bike storage and other amenities such as showers, lockers, and self-serve repair facilities.

BEFORE

AFTER



Mixed-use developments such as the under-construction Avondale Station TOD include opportunities for secure bicycle parking rooms inside retail storefronts that may also offer bicycle repair and sell bicycles and accessories.

Precedents

Chicago, IL

Credit: American Assets Trust and Quintessential Photography

Portland, OR

Credit: Inhabitat.com

Erfurt, Germany

References

APBP *Essentials of Bike Parking:* Long Term Parking (pg 3)

APBP *Bicycle Parking Guidelines:* Chapter 2: Facilities (pg 2-1)

Transportation Research Board (TRB) *Integration of Bicycles and Transit*: Integration of Bicycle Parking and Transit (pg 34)

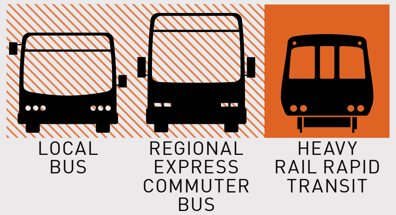
AASHTO *Guide for the Development of Bicycle Facilities:* Long-term bicycle parking facilities (pg 6-4)

Lloyd Cycle Station

Application

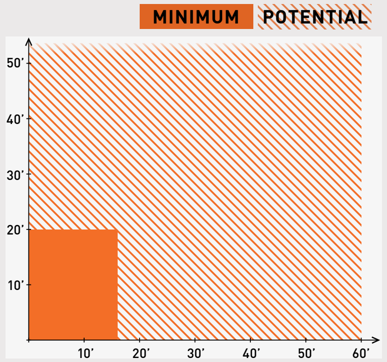
TRANSIT SERVICE TYPE

High-demand local bus routes, regional commuter express bus, and heavy rail rapid transit.



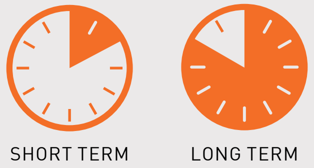
SPACE REQUIREMENTS

At least 16' x 20' to accommodate one row of inverted "U" or double-stacked racks, a 5' access aisle, and one row of vertical hanging racks. 31'x20' for freestanding indoor bike room with two rows of bikes and access hallway. Allocated space should reflect user demand.



TIME

May be used for both short-term and long-term trips.



IMPLEMENTATION DIFFICULTY

Moderate investment required; operations or ownership may be outsourced to building owner or other interested party

IDEA:

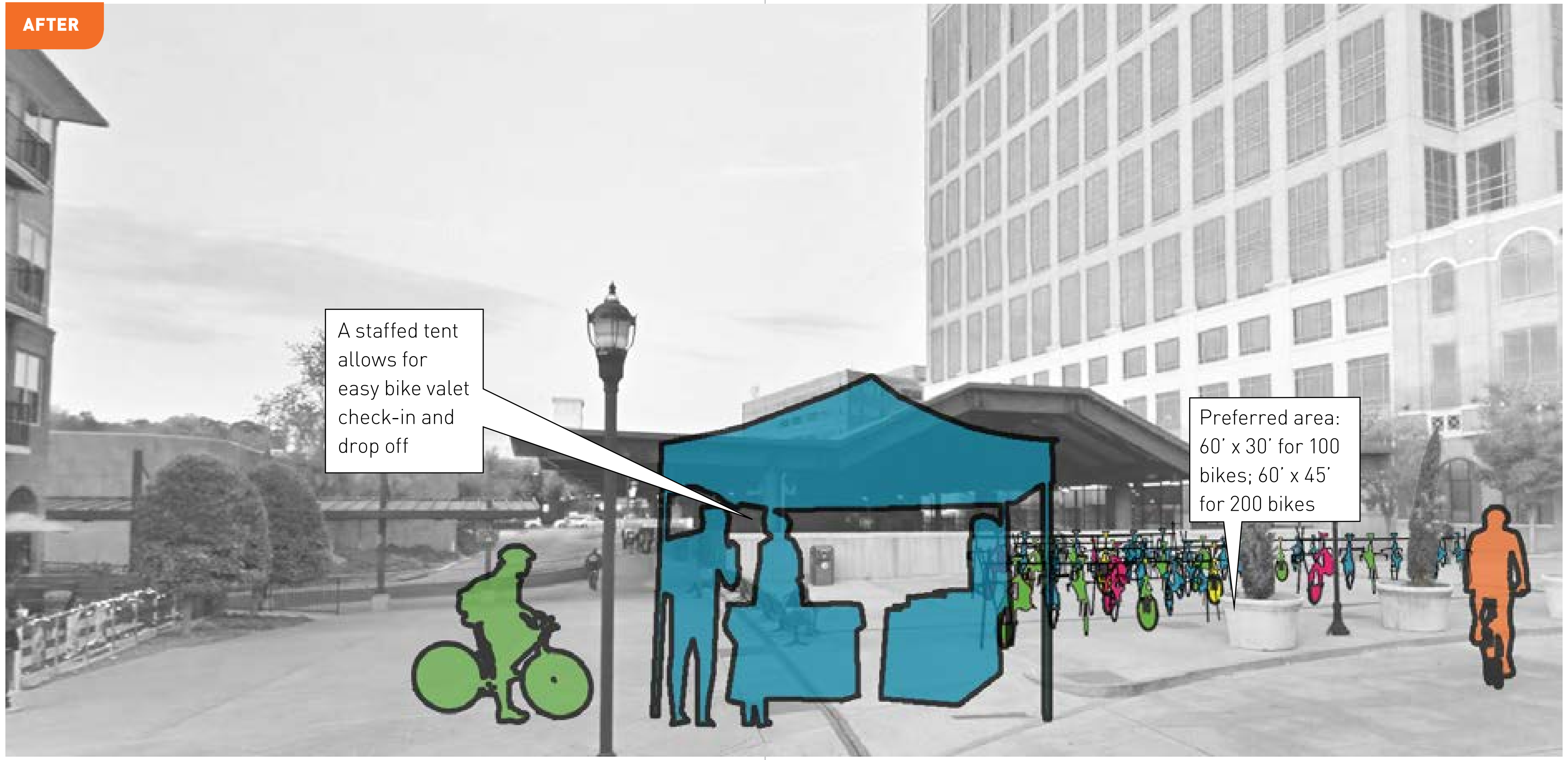
Station Bike Valet

Bike valet allows for efficient and personable bike parking. Popular for large gatherings such as sporting events or festivals, bike valet can also be used at transit stops and can provide short or long-term bike parking in a highly flexible, low-impact fashion. Bike valet does not require bicyclists to bring locks or carry helmets, as the bicycles are kept safe by a valet attendant who can also serve as a "bikes + transit ambassador."

Bike valet is especially useful where space is abundant, and where existing bike parking can not accommodate large demand.

BEFORE

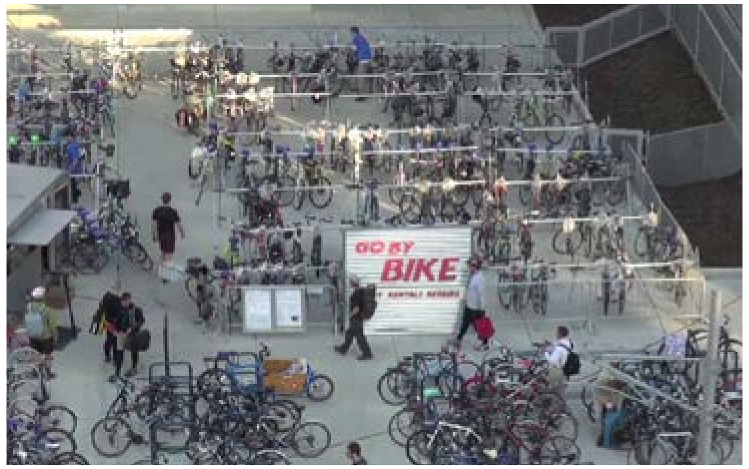
AFTER



A staffed tent allows for easy bike valet check-in and drop off

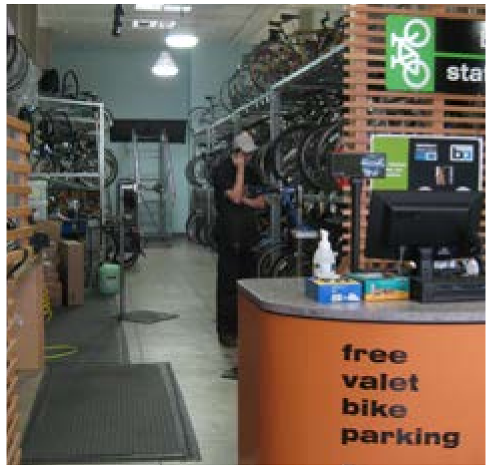
Preferred area: 60' x 30' for 100 bikes; 60' x 45' for 200 bikes

Precedents



Portland, OR

Long Beach, CA



Berkeley, CA

References

APBP *Essentials of Bike Parking:* Long Term Parking (pg 3)

APBP *Bicycle Parking Guidelines:* Chapter 2: Facilities (pg 2-1)

Transportation Research Board (TRB) *Integration of Bicycles and Transit*: Integration of Bicycle Parking and Transit (pg 34)

AASHTO *Guide for the Development of Bicycle Facilities:* Long-term bicycle parking facilities (pg 6-4)

Application

TRANSIT SERVICE TYPE

Heavy rail rapid transit and local bus stops with high ridership.

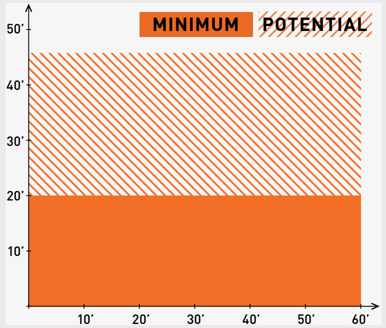
LOCAL BUS

REGIONAL EXPRESS COMMUTER BUS

HEAVY RAIL RAPID TRANSIT

SPACE REQUIREMENTS

Varies to fit space available. Ideally at least 20' wide. For 100 bikes the footprint would require approximately 60' x 30'.



TIME

Open access parking inside fare gates may be used for both short-term and long-term trips.

SHORT TERM

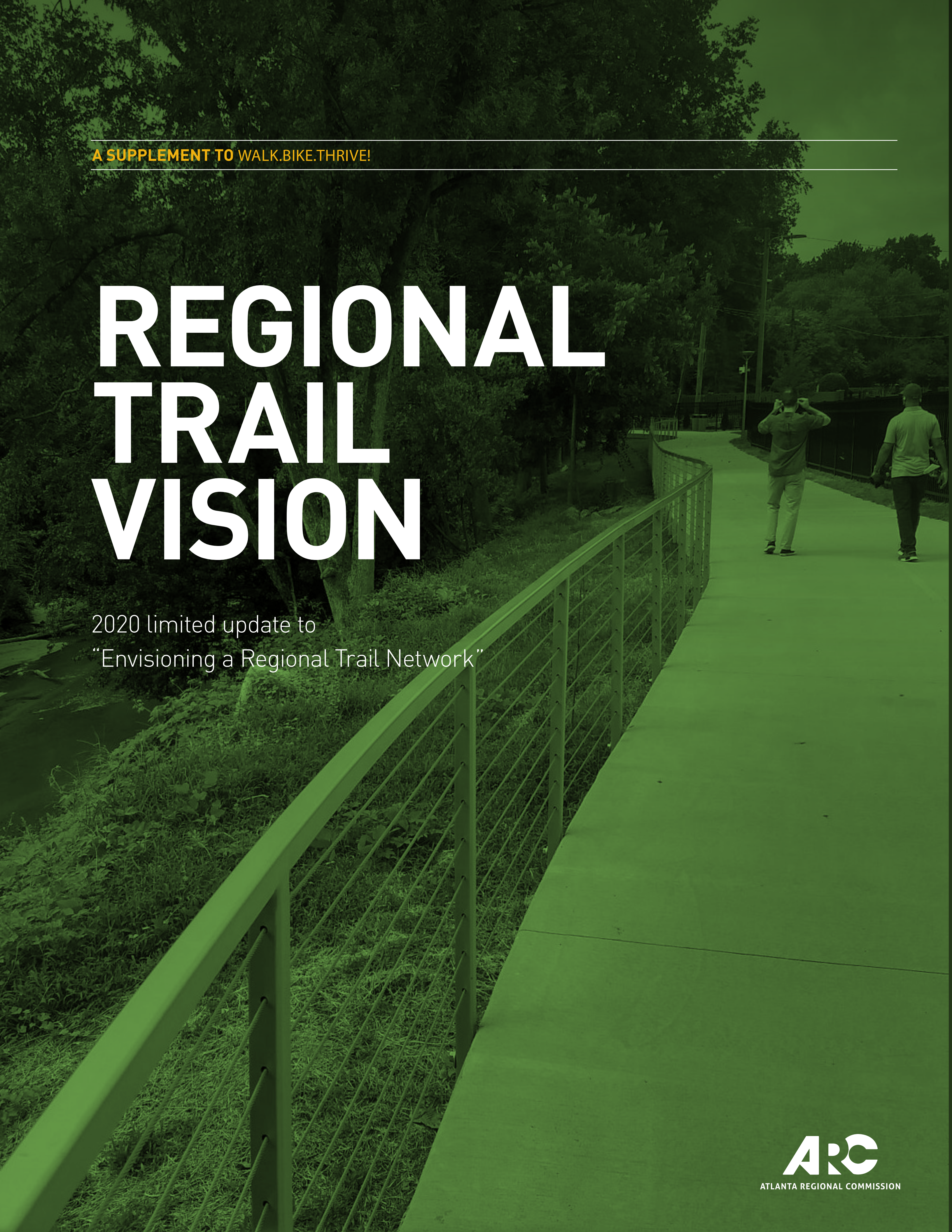
LONG TERM

IMPLEMENTATION DIFFICULTY

Moderate investment required; operations or ownership may be outsourced to building owner or other interested party

ATLANTA REGIONAL COMMISSION

229 PEACHTREE STREET NE, SUITE 100 | ATLANTA, GA 30303
404.463.3100
ATLANTAREGIONAL.ORG



A SUPPLEMENT TO WALK.BIKE.THRIVE!

REGIONAL TRAIL VISION

2020 limited update to
"Envisioning a Regional Trail Network"

ATLANTA REGIONAL COMMISSION

REGIONAL TRAIL PLAN

2020 UPDATE

The Atlanta region is an ideal setting for a connected system of trails to serve both citizens and visitors for transportation and recreation. Over the past 20 years, local governments and private organizations have constructed trails that attract thousands of visitors and millions of trips per year. However, the disconnected nature of the region's trails limit their ability to serve as daily transportation and does not provide access for much of the region.

In 2016, the Atlanta Regional Commission adopted a comprehensive regional vision for improving walking and bicycling titled *Walk. Bike. Thrive!* The plan gauged that only 70 miles of trails were necessary to build a connected regional trail network and estimated the benefits of a regional trail network.

2020 LIMITED UPDATE

In 2019 and 2020, ARC completed a new Regional Bikeway Inventory and a Transportation Improvement Program (TIP) funding cycle. Many local groups continued to advance greenway planning efforts. The changes necessitated an update to the Regional Trail Vision's geographic analyses and regional funding policy map. These updates will guide regional funding decisions over the next several years.

Future updates to regional trail benefits may be warranted when substantial new corridors are completed.

POLICY GOALS

"Walk. Bike. Thrive!" identified three regional needs for assessing and prioritizing active transportation investments.

Trails and paths support safe, convenient, and comfortable transportation as well as help focus regional growth throughout the region.

- **Safety** - paths can provide opportunities for travel away from busy roads and traffic.
- **Mobility** - paths can provide convenient routes to access destinations or bridge regional barriers, if they are direct.
- **Economic Competitiveness** - communities are increasingly investing in paths as destinations and ammendities for residents.

POLICY UPDATES

This Regional Trail Plan highlights **connectivity** as a critical factor in building a robust and convenient bikeway network.

Connectivity should be prioritized when allocating regional funding.

Connectivity can be measured several ways, which are integrated into regional funding priorities:

- Closing gaps between existing regional trail segments.
- Providing access to urban neighborhoods, small towns, regional job centers, and transit.
- Connecting between high-demand centers through suburban or lower-demand areas.
- Providing access to parks, natural areas, or scenic destinations.

REGIONAL CONNECTIVITY

Multi-use paths, bikeways, and greenways should be connected across the metro region. Multi-use paths can form "active superhighways" of safe and comfortable routes.

By implementing this plan, the region will be more connected with more opportunities to walk and bicycle between regional destinations.

REGIONAL FACILITIES & NETWORKS

Metropolitan Atlanta has a wide variety of walkways, bikeways, multi-use paths, greenways, and trails.

REGIONAL SIGNIFICANCE

Connections between jurisdictions or across boundaries are critical for ensuring travel throughout the metropolitan region. ARC recognizes **Regionally Significant Trails** that are key links for connecting the regional trail network; crossing jurisdictional boundaries; connecting cities, regional activity centers, or parks; or serve as destinations for residents and visitors the region. This 2020 update also identifies **Regional Trail Confluences** for areas where several regional trails converge.

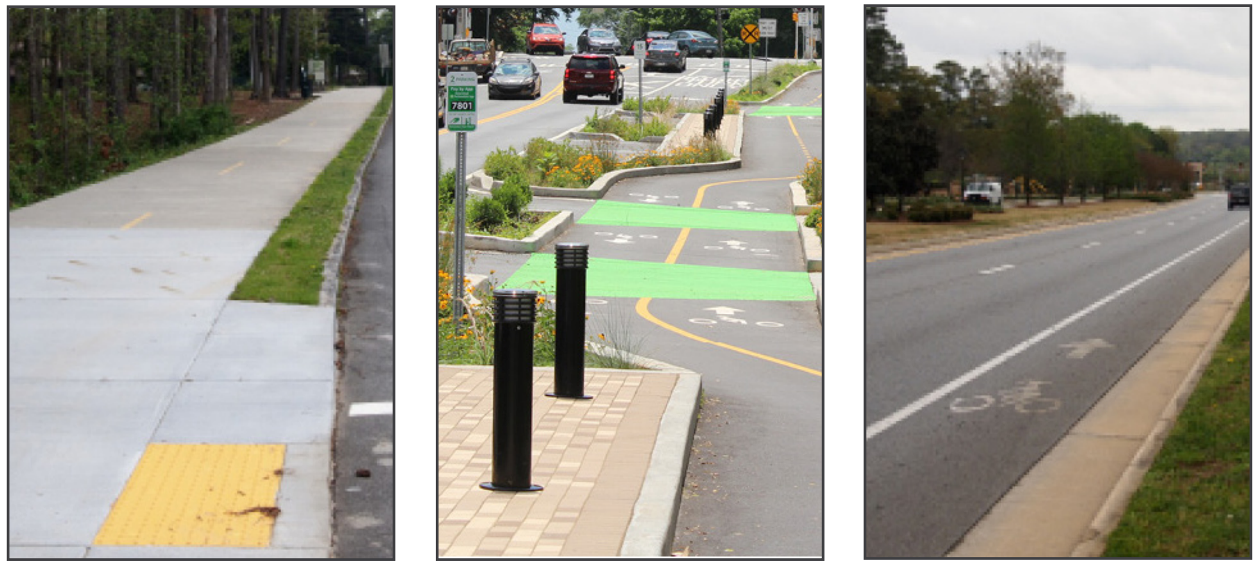
TRAILS, PATHS, & BIKEWAY FACILITIES

Trails or paths are dedicated facilities that serve non-automobile, active transportation. For transportation purposes, trails or paths are typically hard-surfaced and 10-14 feet wide. Sidewalks and walkways are fundamental for safe travel by foot while Multi-Use Paths serve people on foot, bike, or other active transportation methods.

Paths - whether Multi-Use Paths, Shared-Use Paths, Greenways, or Trails - share the same objective to provide comfortable routes for a wide range of people who are walking, bicycling, using wheelchairs or assistive devices, riding scooters, pushing strollers, or otherwise traveling outside of an automobile. Paths and greenways may vary by specific design or location but work better as part of a regional network of walkways, bikeways, and mass transit.

TRAILS & CONTEXT-SENSITIVE DESIGNS

Design is an important consideration for paths, trails, and bikeways. All transportation facilities should support safe, comfortable travel and be considered in the surrounding community context. Paths and greenways can be viewed as "bicycle superhighways" to provide connectivity between jurisdictions, over natural or man-made barriers, or to scenic areas. On-street bikeways (i.e. bike lanes) are better suited to busier urban areas, while still providing connections along regional "trail" routes.



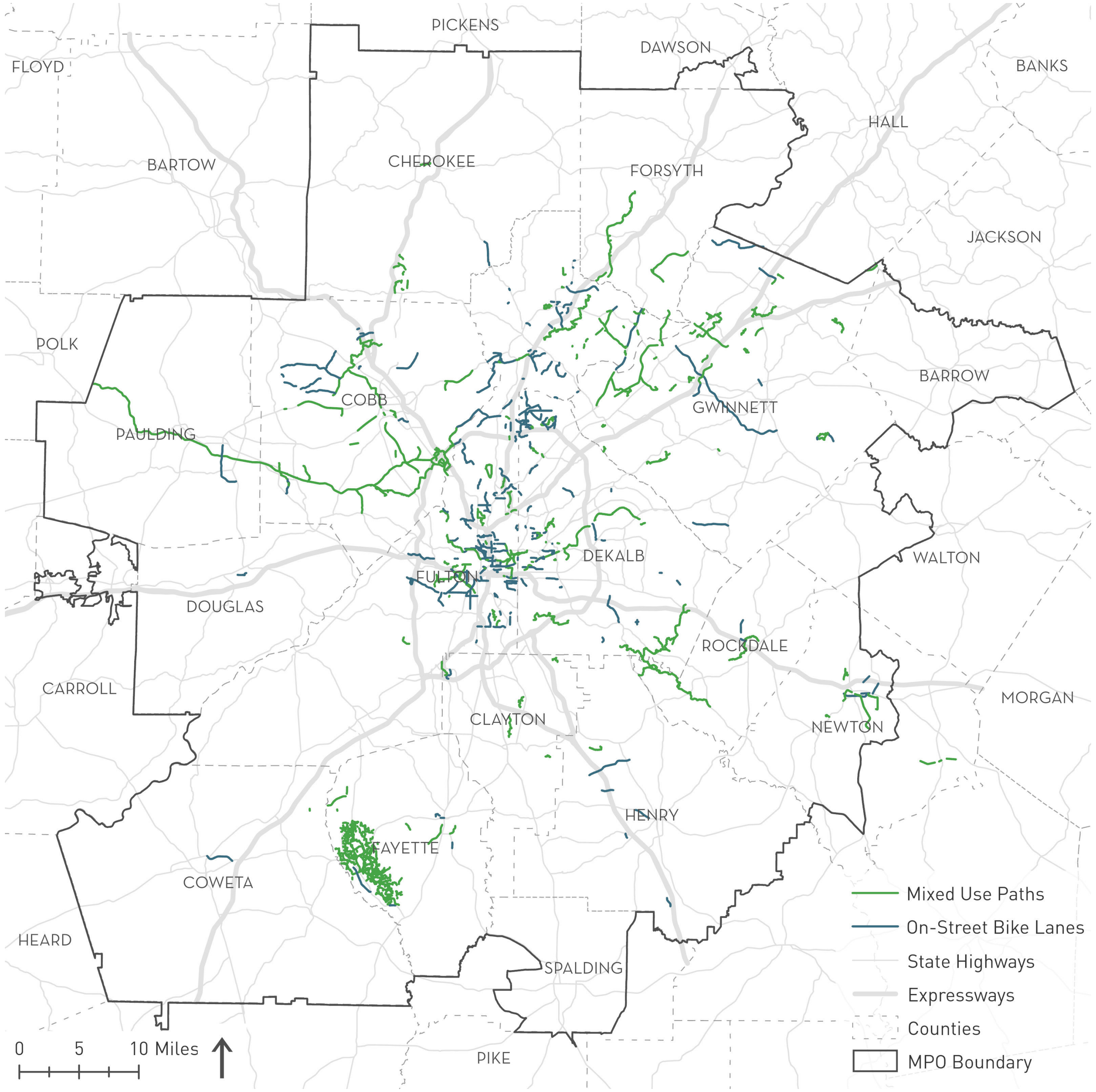
Bikeway facility types vary widely across the metro Atlanta region. ARC's 2019 bicycle facility inventory includes three broad categories: multi-use paths; separated (or protected) bike lanes; and painted bike lanes. From left to right: Barclay Dr, Dunwoody; Abernathy Blvd, Sandy Springs; McDonough St, Decatur. Source: ARC.

EXISTING BIKEWAYS

Metropolitan Atlanta has seen an increase in bikeway, path, and trail mileage over the past several years but many locations remain inaccessible by comfortable and convenient facilities. Multi-Use Paths remain the most common type of bikeway and provide mobility options for people walking, bicycling, or using other mobility devices. The map below shows the distribution of bikeways, paths, and trails around the metropolitan region.

A regional focus should be increasing the miles and distribution of multi-use paths and bikeways across the metropolitan region.

FACILITY TYPE	REGIONAL MILEAGE	REGIONAL PERCENT
Multi-Use Paths	411	66%
Bicycle Lanes	210	33%
TOTAL	**621**	**100%**



PLANNED TRAILS

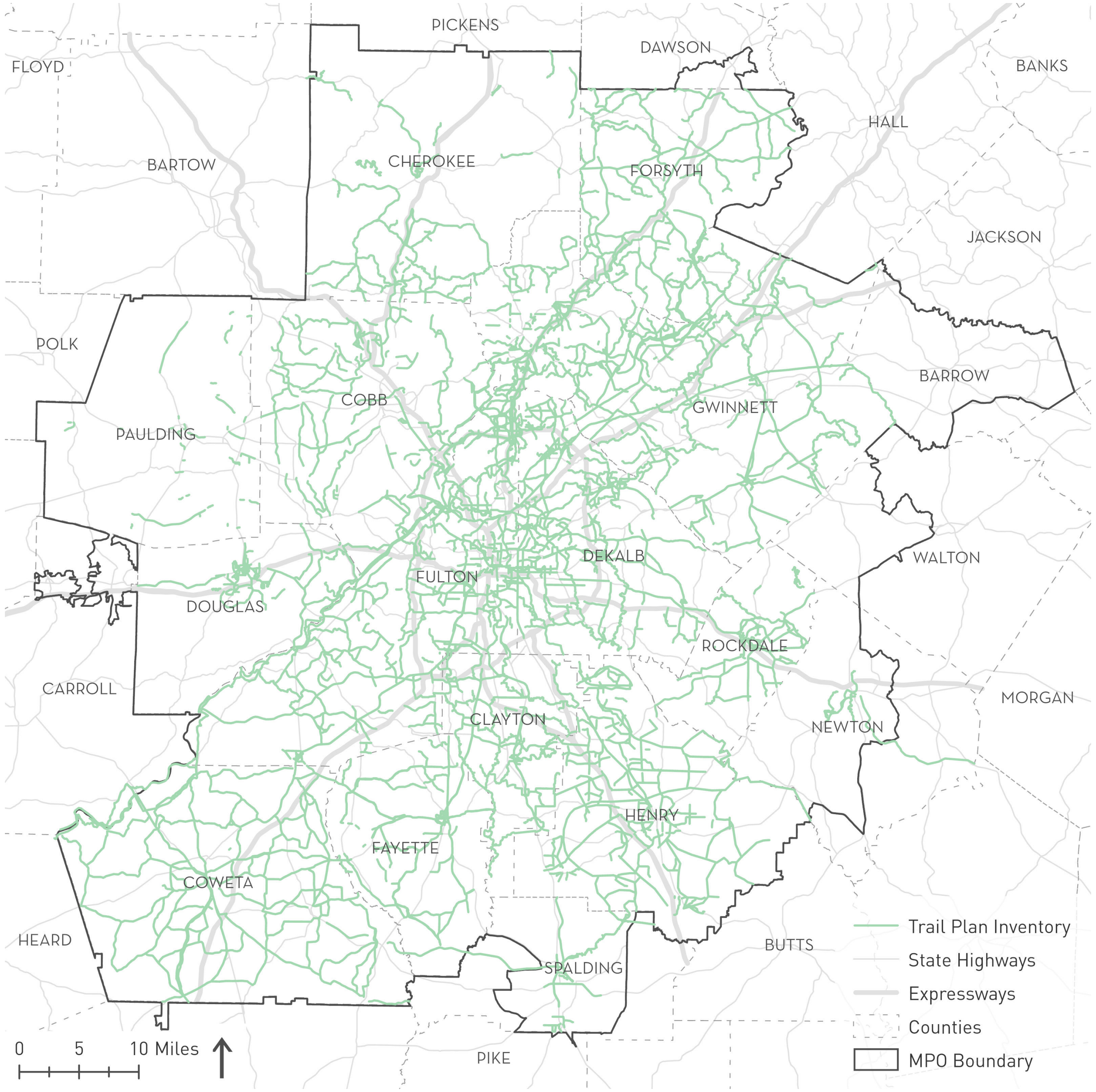
Most counties in metro Atlanta have either a trail-specific plan or integrated paths into a Comprehensive Transportation Plan. While many trail plans have been adopted since the 1970s, implementation still lags behind visionary planning. Planned corridors provide information for filling regional gaps and ensuring that trail corridors connect at jurisdiction boundaries. The map below shows most recent trail plans or relevant projects from comprehensive tranportation plans from around the region.

A regional focus should be ensuring that local trail plans remain current and that planned trails are shepherded to implementation.

METROPOLITAN ATLANTA CURRENTLY HAS

OVER 3,000 MILES

OF PLANNED TRAILS LOCATED IN ALMOST EVERY COUNTY



REGIONAL CONNECTIVITY

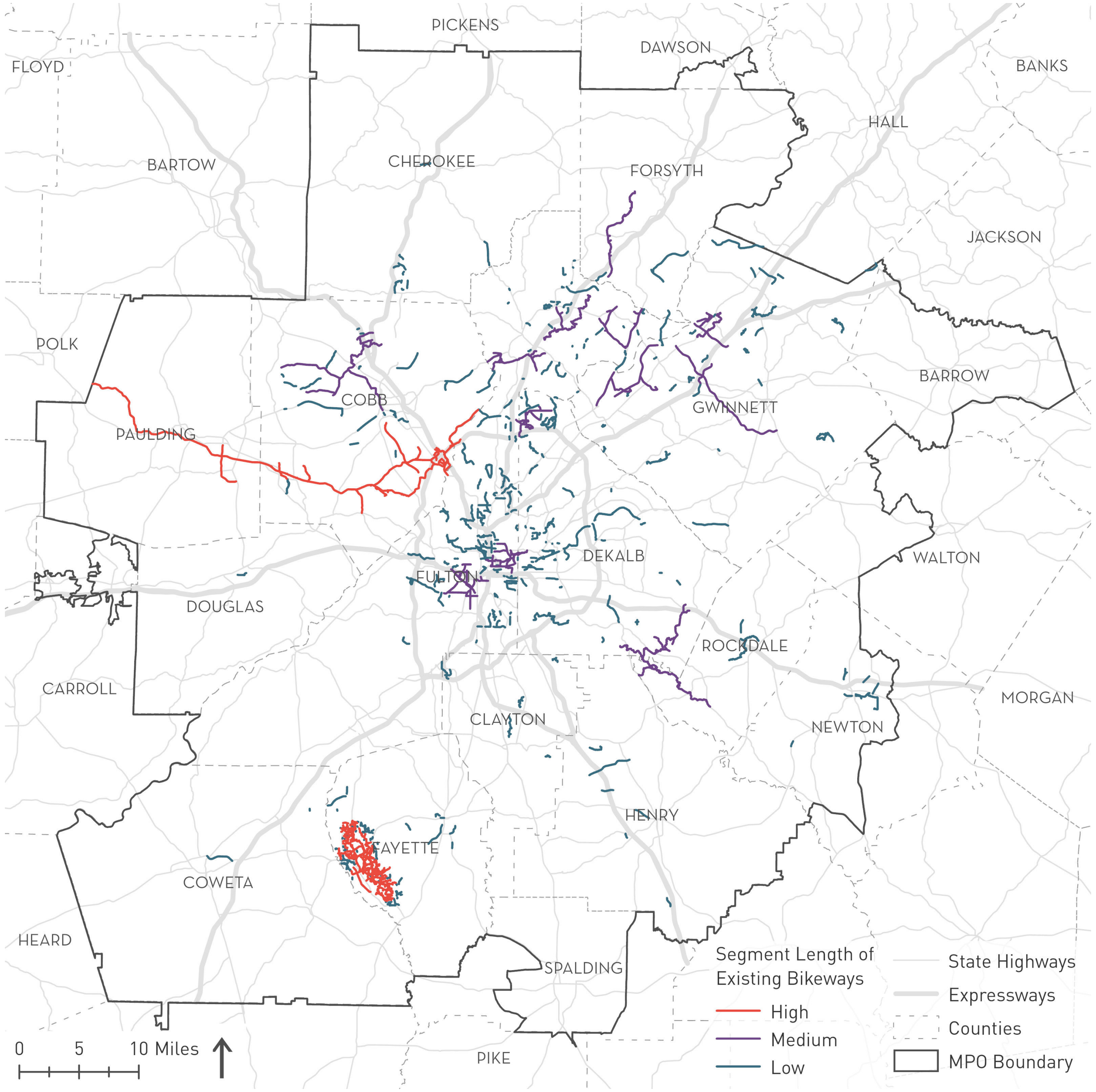
ARC has estimated the length of connected segments in the metropolitan region. The longest trail cluster in the region covers 81 miles while the shortest covers only 74 feet. However, the median bikeway length in the region is just over a half-mile, which limits the distance that people can bike or walk on multi-use pathways. The map below shows existing bikeways by connected segment lengths.

A regional focus should be increasing connections between trails in order to create a single connected regional network.

THE MEDIAN BIKEWAY LENGTH IN METROPOLITAN ATLANTA IS

0.53 MILES

LIMITING THE DISTANCE THAT CAN BE TRAVELED COMFORTABLY



REGIONAL ACCESS

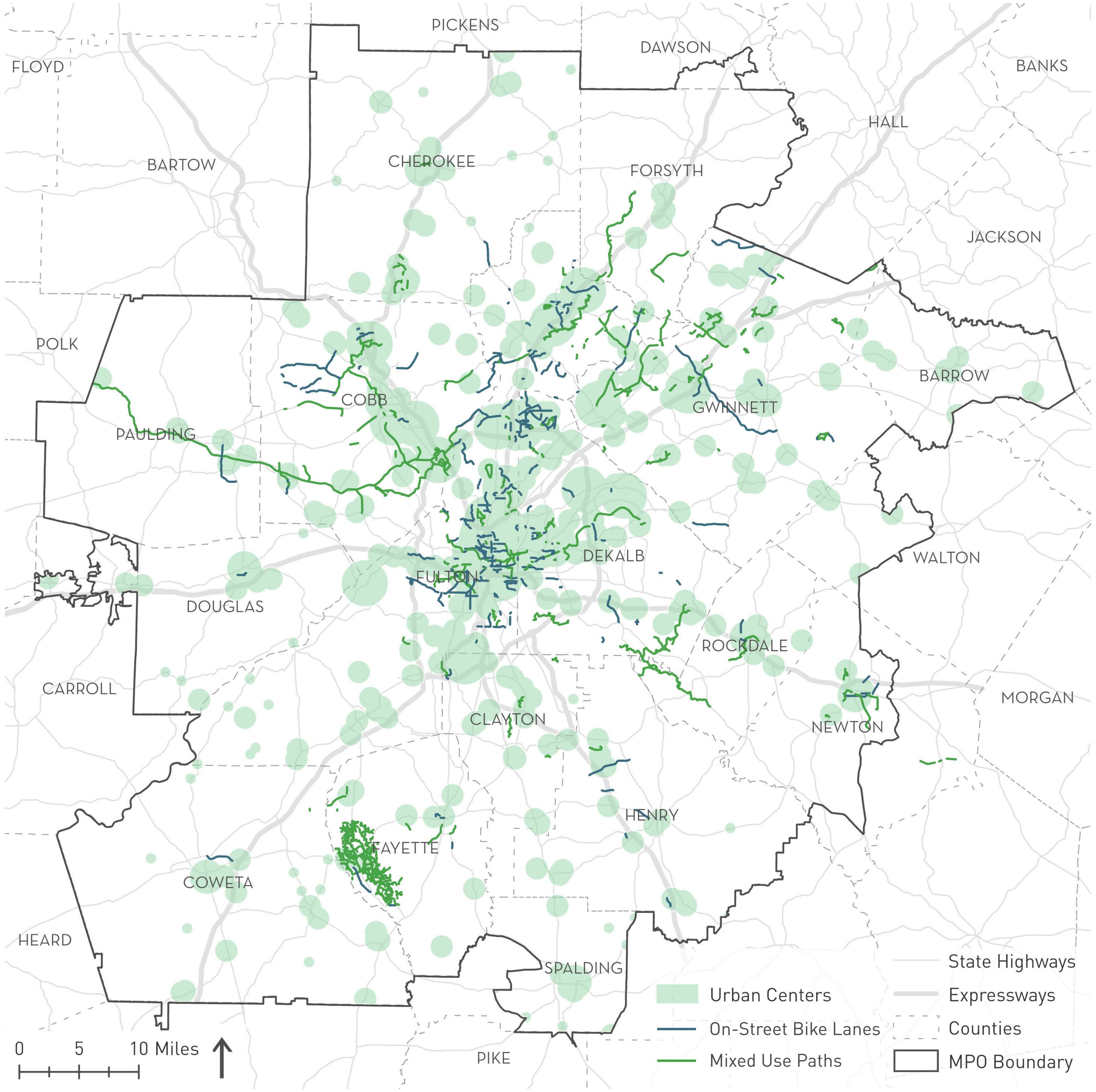
Metropolitan Atlanta has a wide variety of urban neighborhoods, small towns, and regional activity centers. There are many benefits trails bring to users when connected to or within activity centers. Trails that connect to activity centers from surrounding neighborhoods provide an opportunity to access jobs and other daily destinations by walking or biking. Within activity centers, trails provide workers, visitors, and residents a place to visit, socialize, travel, and be active.

A regional focus should be increasing access to urban centers and towns throughout the region.

CURRENTLY ONLY

1 IN 3

URBAN CENTERS CONTAIN A BIKEWAY OR PATH



REGIONAL PROPENSITY

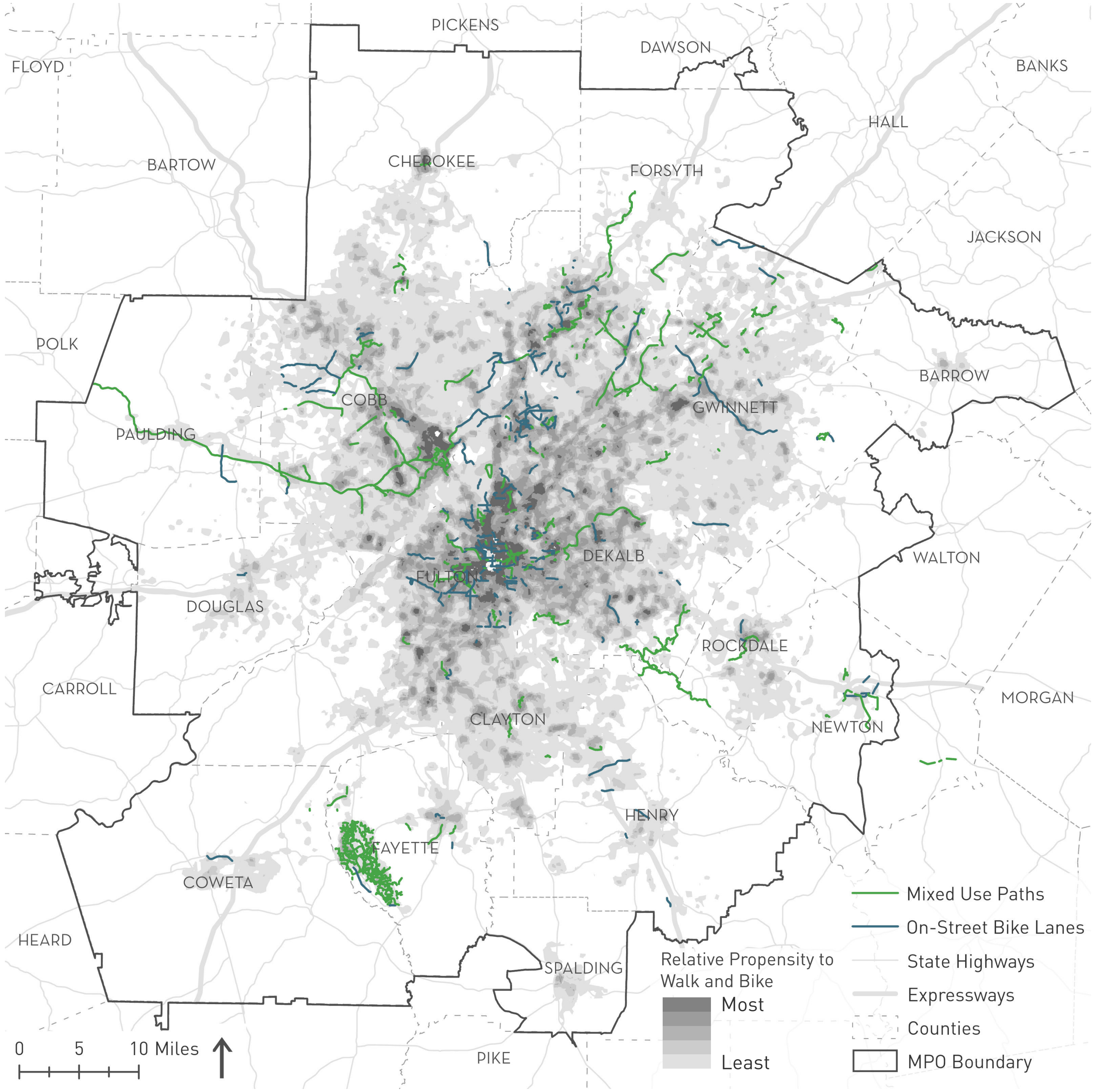
ARC's regional walking and bicycling trail - "Walk. Bike. Thrive!" - estimated propensity for walking and biking using on a destination-based composite model. Many trails are located in areas of higher demand, though some pockets of higher demand currently do not have access to regional trails. The map below highlights locations where existing bikeways and paths overlap with areas of higher and lower propensity for walking and bicycling.

A regional focus should be increasing access to areas of higher demand for walking and bicycling as well as increasing connections between areas of higher demand.

ACROSS METROPOLITAN ATLANTA

4 IN 10 PEOPLE

LIVE WITHIN A 5 MINUTE BICYCLE RIDE OF A BIKE FACILITY



REGIONAL EQUITY

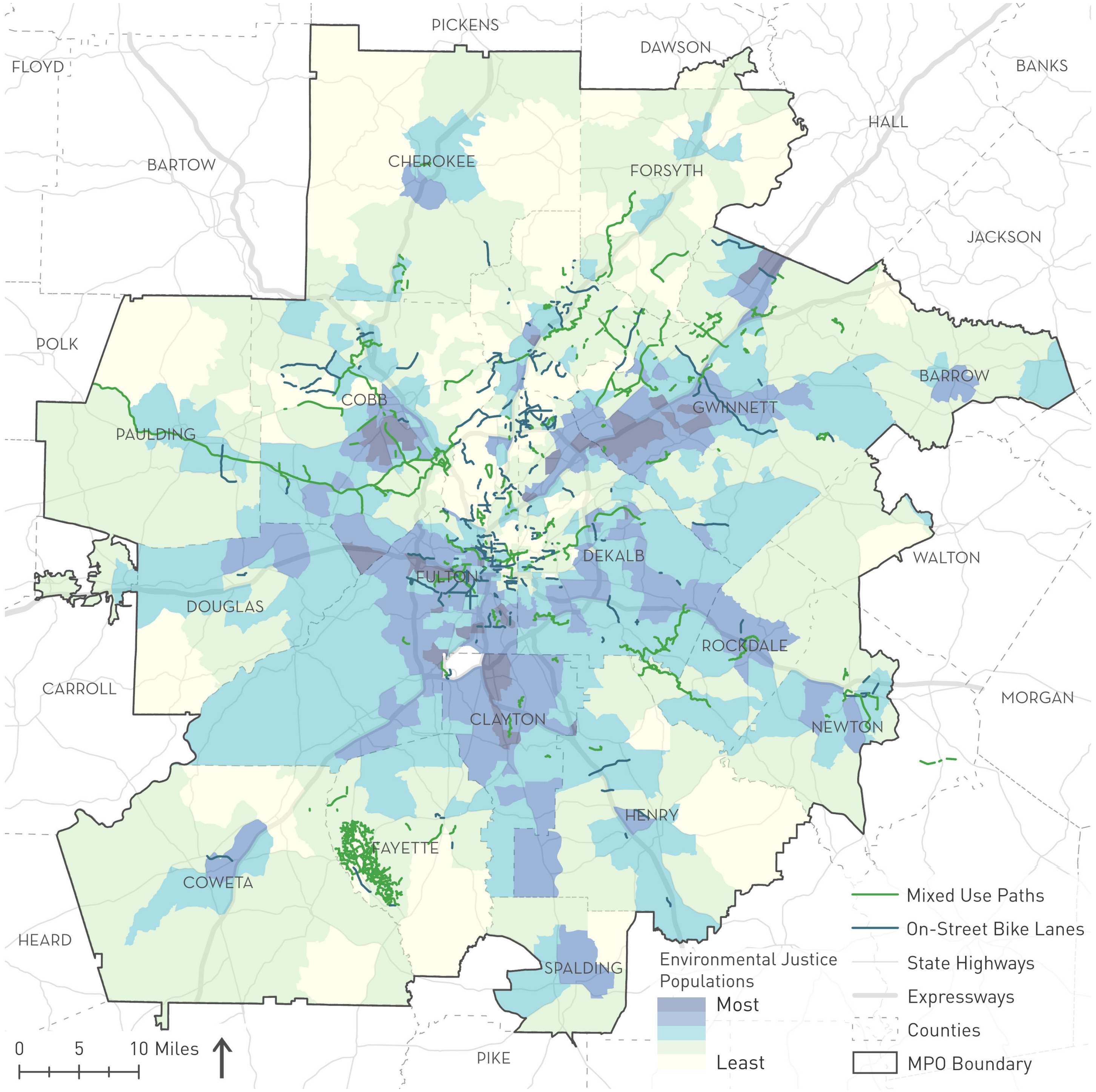
Trails are not distributed evenly across the region. Many are located in communities with lower concentrations of racial minorities, ethnic minorities, and low-income populations, shown by ARC's Environmental Justice Map. As trails provide many benefits for safety, health, and quality-of-life, regional efforts should foster trails in every community equally and in complete coordination with community members.

A regional focus should be planning and building trails in southern portions of the region that currently have fewer bikeways and multi-use paths.

EXPANDING THE REGIONAL TRAIL NETWORK CAN CREATE

MORE OPPORTUNITIES to WALK, BIKE, AND BE ACTIVE

FOR RECREATION AND TRANSPORTATION



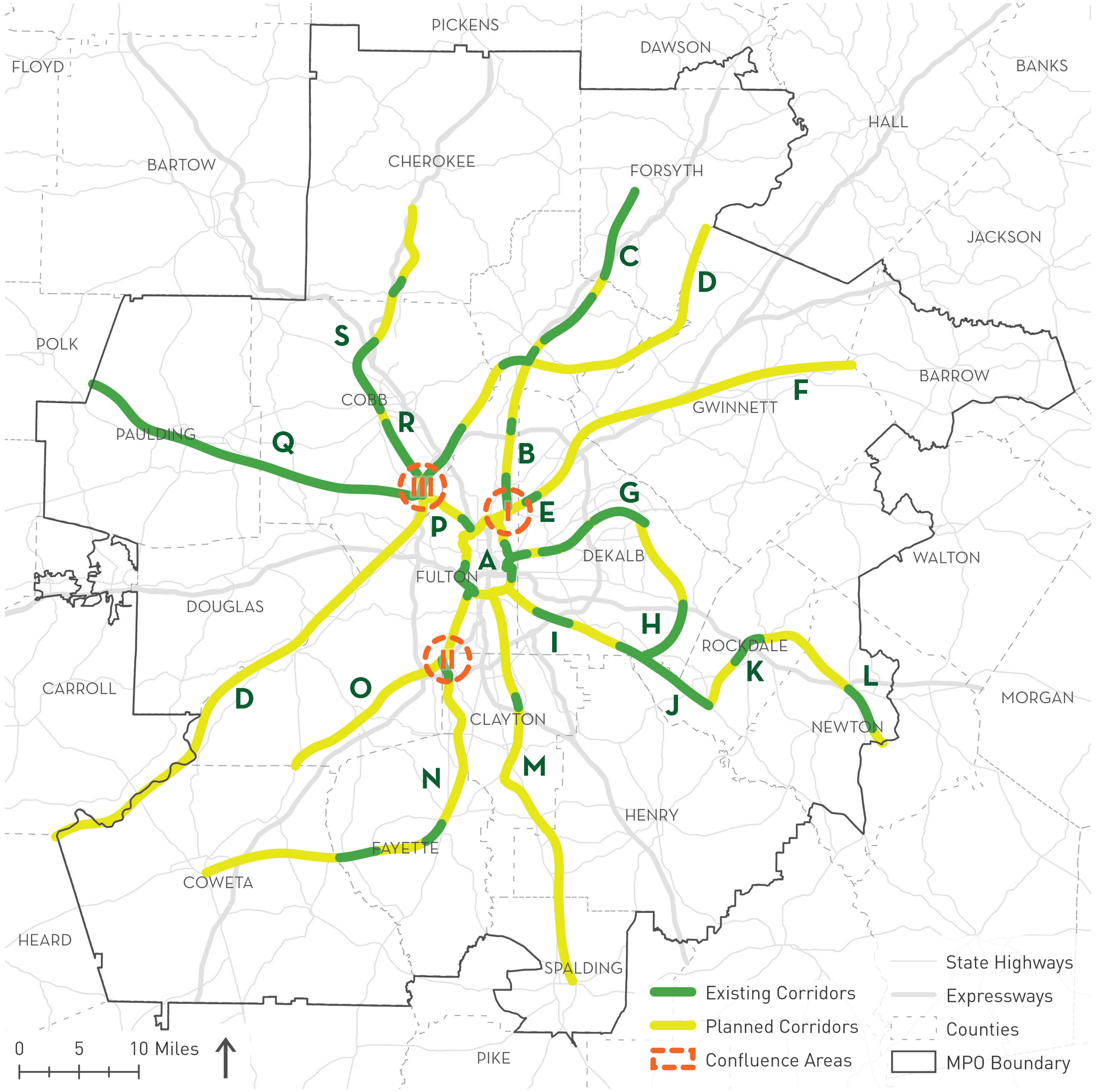
REGIONAL TRAIL VISION

Connections between jurisdictions or across boundaries are critical for ensuring travel throughout the metropolitan region. ARC recognizes trails that improve regional mobility, safety, and connectivity:

Regionally Significant Trails are key links for connecting the regional trail network; crossing jurisdictional boundaries; connecting cities, regional activity centers, or parks; or serving as destinations for residents and visitors the region. Regionally significant trails are show on the **Regional Trail Vision Map** (below).

Regional Trail Confluences are locations where several regional trails converge. These areas may need extra coordination, collaboration, or funding to build a connected regional trail network.

The Regional Trail Vision map identifies corridors for priority funding with MPO and regional funds.



REGIONALLY SIGNIFICANT TRAILS

Regionally Significant Trails are priorities for regional and federal funding. These corridors and confluence areas are the primary focus for metropolitan Atlanta's Transportation Alternatives Program funding but may also be considered for ARC's Surface Transportation Block Grants or other Transportation Improvement Program funding. Other trails may be considered but they should provide similar regional benefits for connecting the regional trail network or providing increased access around the region. The following table tracks regionally significant trails along with their most recent planning documentation.

ID	Corridor Name	Jurisdictions	Source Documentation
A	Atlanta BeltLine	City of Atlanta	Atlanta Beltline Trail Map
B	PATH 400	Atlanta, Sandy Springs	Atlanta Transportation Plan North Fulton CTP
C	Big Creek Greenway	Alpharetta; Fulton and Forsyth Counties	Big Creek Greenway Map
D	Chattahoochee RiverLands	Forsyth, Gwinnett, Fulton, Cobb, Douglas, Coweta	Chattahoochee River Greenway Study
E	Peachtree Creek Greenway	Atlanta, Brookhaven, Chamblee; Dekalb County	Atlanta Transportation Plan Dekalb County CTP
F	Piedmont Pathway	Gwinnett County	Gwinnett County Trails Plan
G	Stone Mtn Trail	Decatur; Dekalb County	Dekalb County CTP
H	Arabia & Panola Trails	Dekalb County	Dekalb County CTP
I	South River	Dekalb County	Dekalb County CTP
J	Rockdale River Trail	Rockdale County	Rockdale County CTP
K	Conyers Trail	Conyers; Rockdale County	Rockdale County CTP
L	Cricket Frog Trail	Rockdale, Newton Counties	Rockdale County CTP Newton County CTP
M	Clayton-Henry-Spalding Corridor	Clayton, Henry, Spalding Counties	Clayton County Trails Master Plan Henry County CTP Spalding-Griffin CTP
N	Clayton-Fayette-Coweta Corridor	Clayton, Fayette, Coweta Counties	Fayette County Transportation Plan Coweta County Greenway Master Plan
O	Roosevelt Highway	Atlanta; Fulton County	Atlanta Transportation Plan South Fulton CTP
P	Connect the Comet	Atlanta; Cobb County	Atlanta Transportation Plan Cobb Trails Master Plan
Q	Silver Comet Trail	Cobb, Paulding Counties	Silver Comet Trail Map
R	Mountain to River Trail	Cobb County	Cobb Trails Master Plan
S	Noonday Creek Trail	Cobb, Cherokee Counties	Cobb Trails Master Plan

ID	Confluence Areas	Jurisdictions	Source Documentation
I	Lindbergh Area	Atlanta, Brookhaven	Plan in development
II	Aerotropolis Area	Clayton, Fulton Counties	AeroATL Greenway Plan
III	Cumberland Area	Cobb County	Cobb Trails Master Plan

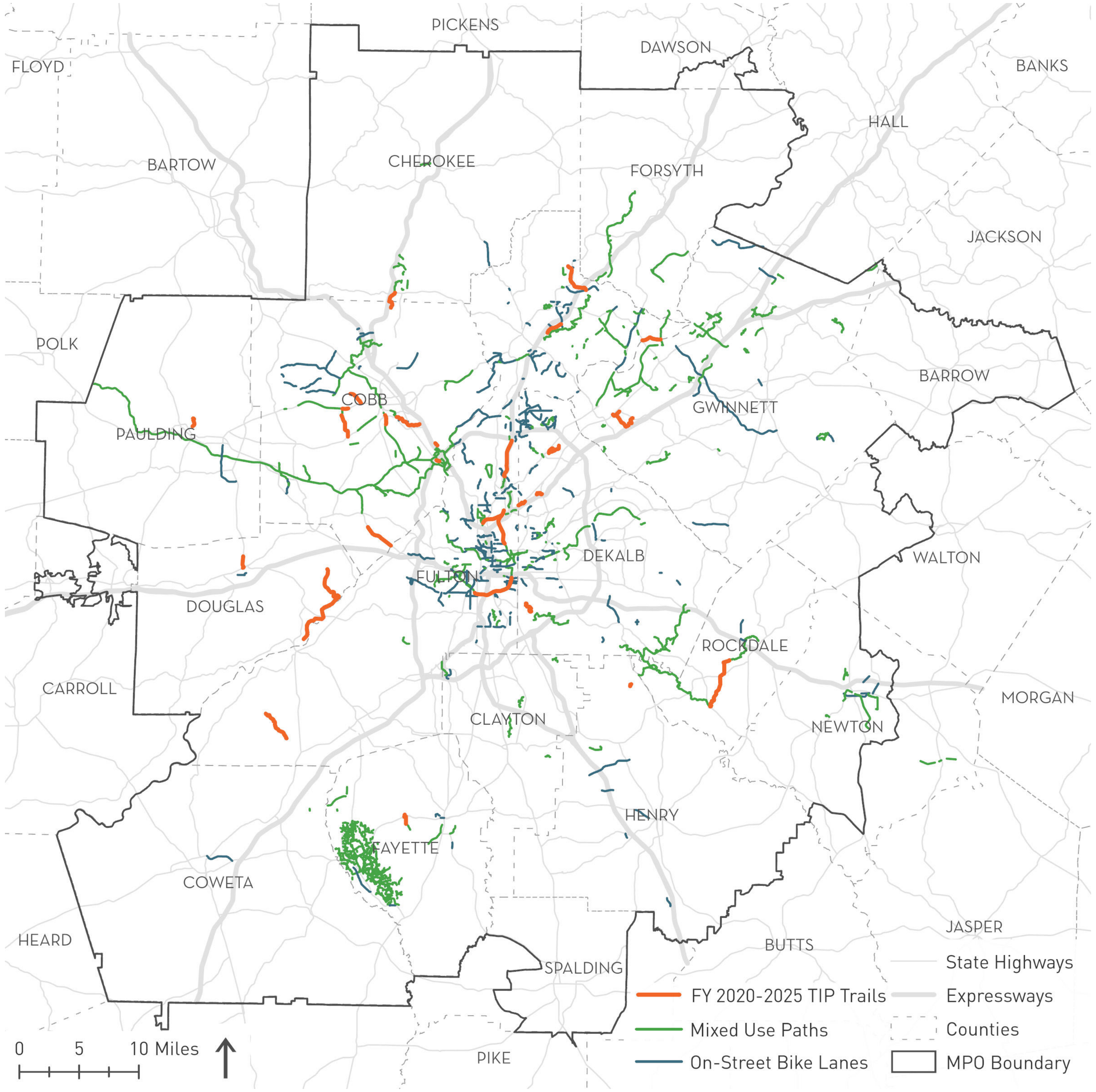
PROGRAMMED TRAILS & COSTS

The map below shows sidepath and trail projects in ARC's 2020-2025 Transportation Improvement Program (TIP), current at the time of writing this report. The TIP illustrates the regional distribution of trail investments, progress towards connecting trail corridors, and a snapshot of current project costs. Estimating future costs is difficult as a variety of factors - including topography, environmentally or historically sensitive areas, and construction markets - can impact the cost of building trails.

ARC should prioritize projects that provide the greatest benefits for the region, even if costs are higher.

For the 29 trail projects currently in the TIP:

THE AVERAGE PROJECT LENGTH IS 2.04 MILES, THE AVERAGE PROJECT COST IS $15,658,230, AND THE MEDIAN PER MILE COST IS $5,429,847.

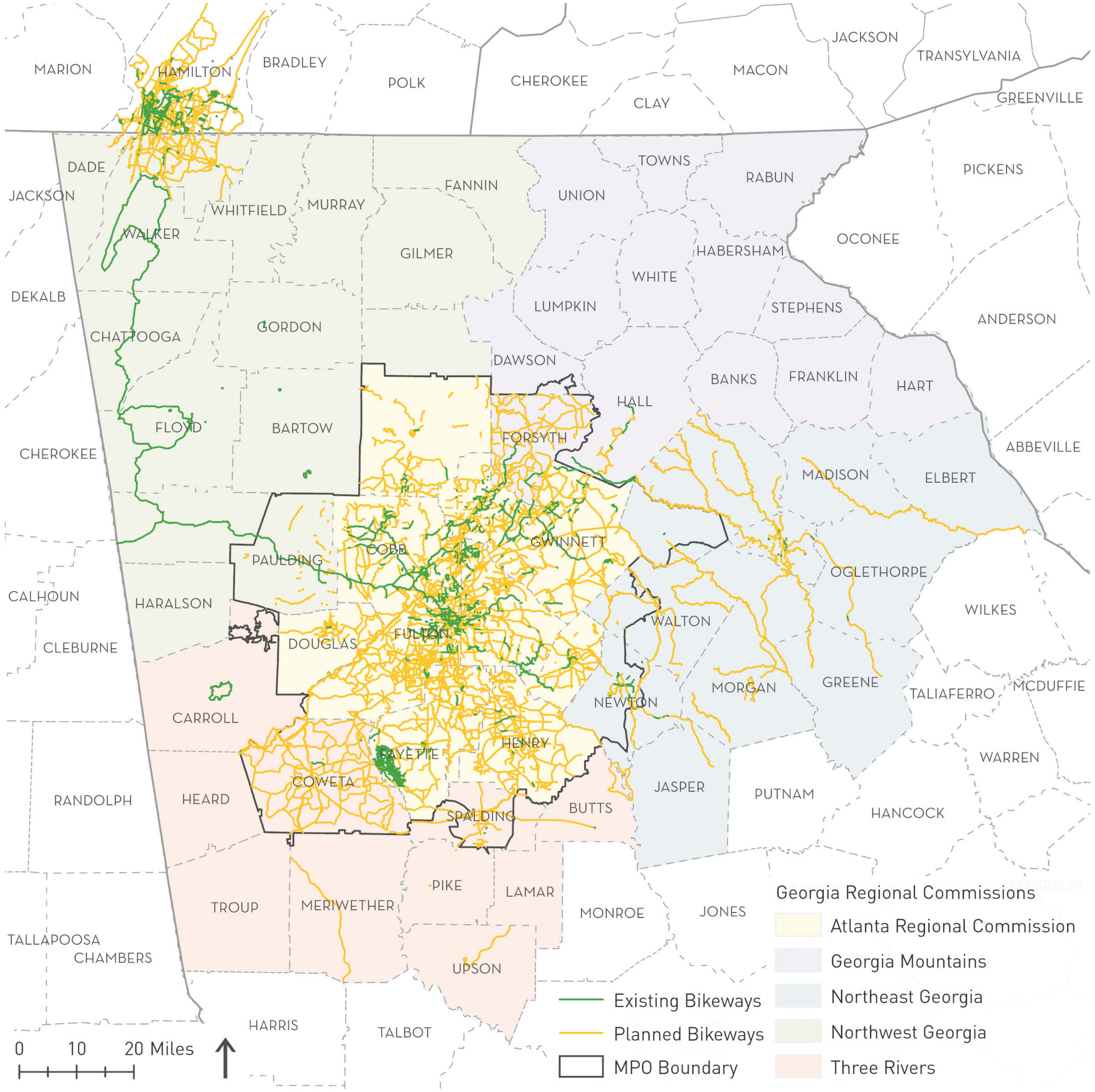


BEYOND METRO ATLANTA

Just as it is vital for neighboring jurisdictions within metro Atlanta to coordinate trail planning efforts to ensure connectivity, regional and state agencies should do the same. There are opportunities for broader connectivity for walking and biking, providing access to cities, activity centers, and scenic areas across the state.

ARC should support statewide trail efforts and coordinate connections around jurisdictional boundaries.

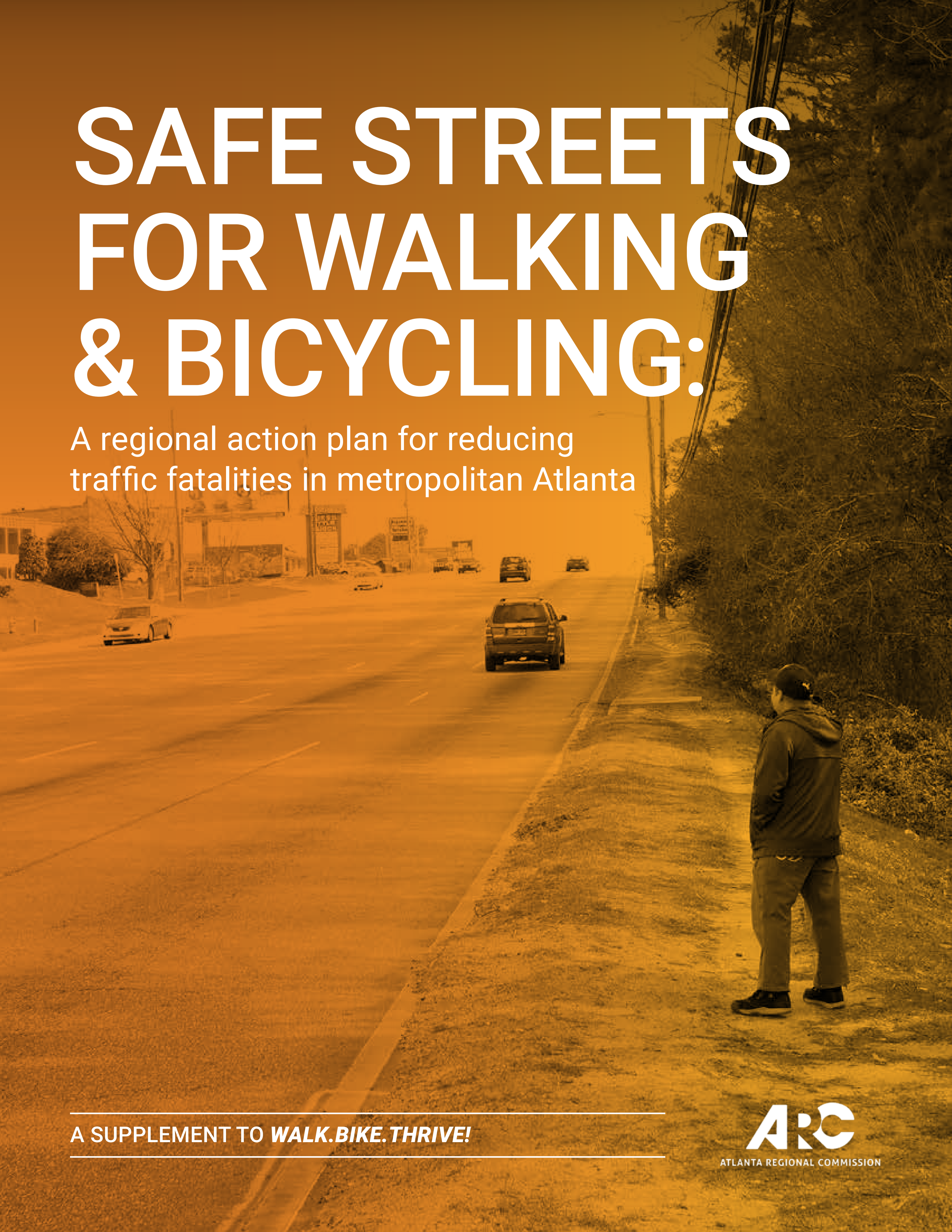
EXPANDING THE STATEWIDE TRAIL NETWORK CAN CREATE NEW CONNECTIONS TO KEY DESTINATIONS, INCLUDING CITIES AND SCENIC AREAS



Source: ARC, Chattanooga-Hamilton County Regional Planning Agency, Gainesville-Hall MPO, Northeast Georgia Regional Commission, Northwest Georgia Regional Commission, Three Rivers Regional Commission.

ATLANTA REGIONAL COMMISSION

229 PEACHTREE STREET NE, STE 100 | ATLANTA, GA 30303
404.463.3100
ATLANTAREGIONAL.ORG



SAFE STREETS FOR WALKING & BICYCLING:

A regional action plan for reducing traffic fatalities in metropolitan Atlanta

A SUPPLEMENT TO ***WALK.BIKE.THRIVE!***

ATLANTA REGIONAL COMMISSION

“The Atlanta region will be one of the most connected and safest regions in the United States for walking and bicycling and use active transportation to improve the mobility, safety, and economic competitiveness for residents and communities.”

Vision statement of ***Walk. Bike. Thrive!***, the region’s 2016 active transportation plan.

Executive Summary

The Atlanta Regional Commission's 2016 active transportation strategy document, ***Walk. Bike. Thrive!***, identified safety as critical to regional transportation but defined by a three-fold problem. First, too many people are killed and seriously injured every year while walking or biking. Second, roadway design and community form are the foundations of traffic safety but safe elements are unevenly distributed in the region – especially for vulnerable populations and underserved communities. Third, the fear of being hit by a car or truck is a major barrier to getting more people to walk, bike, or take transit.

Safe Streets for Walking and Bicycling (Safe Streets), therefore, establishes a regional approach to eliminating fatal and serious injury crashes that is data-driven, pro-active, and aggressive. The plan recognizes that serious and fatal crashes involving pedestrians are on an upward trend and uses a Safe System approach to advance evidence-based countermeasures within a complete streets framework.

Safe Streets identifies several strategies for ARC:

- Short-term: ARC will focus regional transportation funding on projects that eliminate roadway designs that are dangerous for people on foot and bike.
- Medium-term: ARC will actively support the development of transportation projects by member jurisdictions that use the Safe System approach to increase traffic safety for all.
- Long-term: ARC will champion a Complete Streets approach to transportation and land use decisions that, over many years, will shift cultural norms around traffic safety and take advantage of changes in technology and demographics.

Many of these changes are societal and outside the scope of this document, so ***Safe Streets*** is a first step in recognizing that improving safety is all about choices we can start to make today.

Research has shown that increasing use and improving safety can go hand in hand—ARC's ***Safe Streets*** lays out an ambitious roadmap to achieve these twin goals.

Safe Streets is built around these critical steps:

Target and Approach

1. Set a Target: Zero Fatalities by 2030
2. Embrace a Safe System Approach

Data-driven Solutions

3. Identify Risks, Demand, and Policy Priorities
4. Use Evidence-based Countermeasures to Eliminate Risks

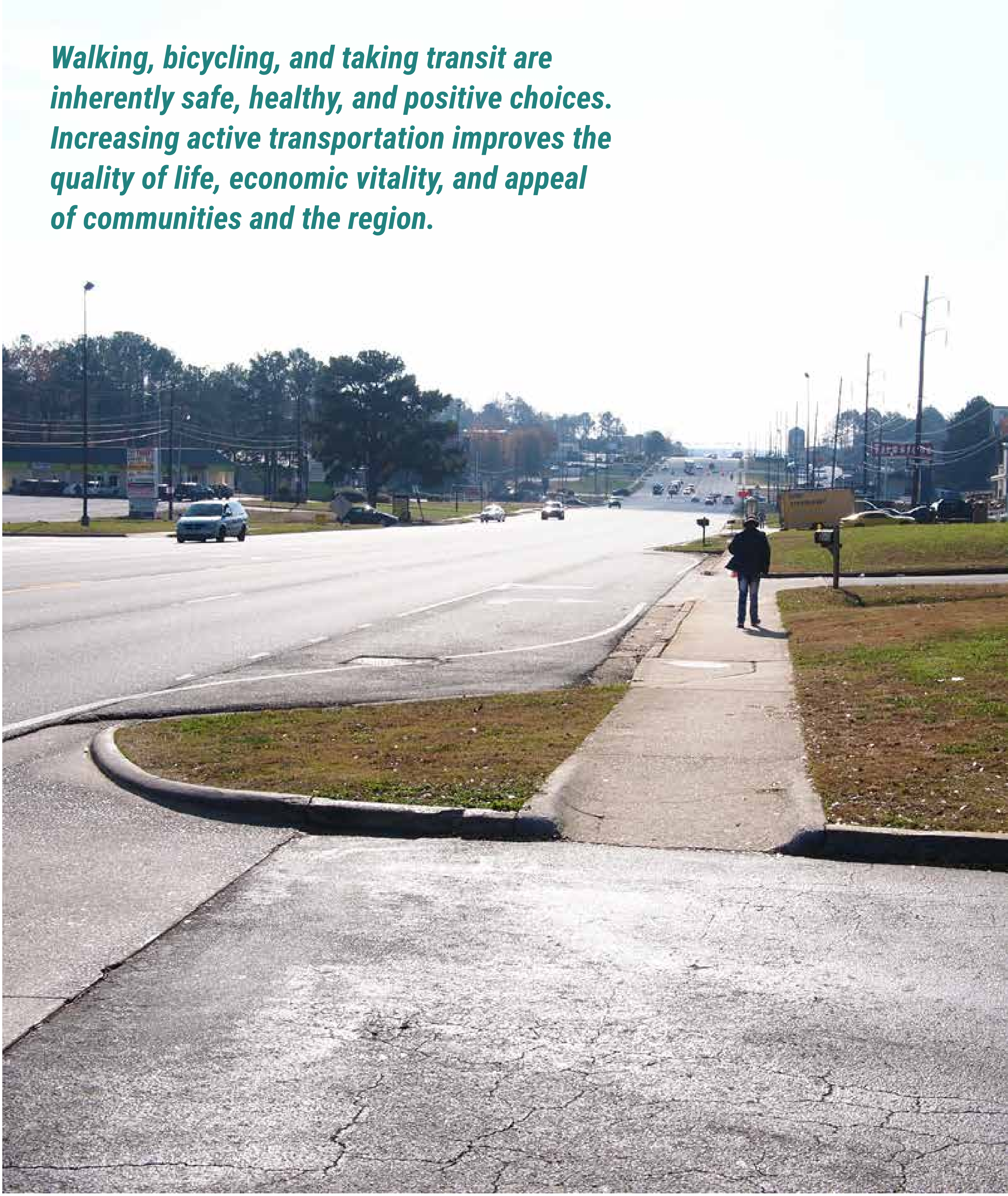
Strategies For Action

5. Short-term: Focus Regional Funding on Safety
6. Medium-term: Support Better Projects
7. Long-term: Champion Complete Streets Implementation

Evaluation and Research

8. Support Improved Data Collection, Crash Analysis, and Evaluation

Walking, bicycling, and taking transit are inherently safe, healthy, and positive choices. Increasing active transportation improves the quality of life, economic vitality, and appeal of communities and the region.



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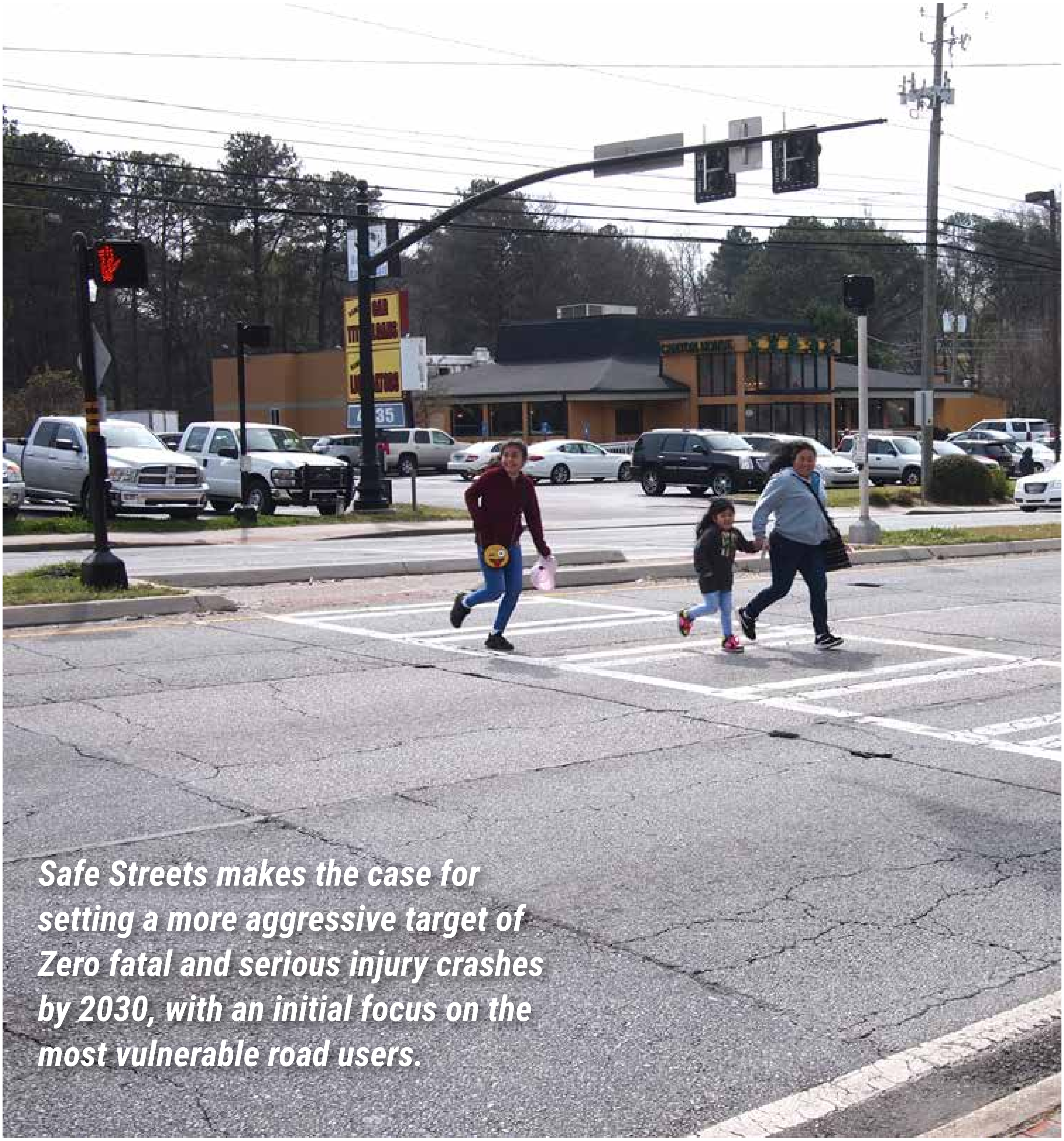
OVERVIEW



Safe Streets makes the case for setting a more aggressive target of Zero fatal and serious injury crashes by 2030, with an initial focus on the most vulnerable road users.

1. Set a Target: Zero Fatalities by 2030

Each year, an average of 90 people walking and biking lose their lives in traffic crashes in the Atlanta region; almost 300 more suffer life-threatening injuries (Figure 1). The numbers have been rising since 2010 and this trend is projected to continue.

This is unacceptable.

Safe Streets for Walking and Bicycling is the first step in a comprehensive program to eliminate fatal and serious traffic crashes in the Atlanta region within a generation. The plan is inspired by the Vision Zero initiative, which states that the only acceptable number of traffic fatalities is ZERO (Table 1).

Establishing a goal of zero is daunting. However it is critical to focusing policy decisions, prioritizing investment, and guiding the everyday decisions of transportation, health, and community development professionals across the region. ARC has an obligation to prevent loss of life and injury and to support walkable, bikeable communities which improve health, equity, and a high quality of life.

Figure 1. Average Annual Pedestrian and Bicyclist Fatalities and Serious Injuries, 2006-2015

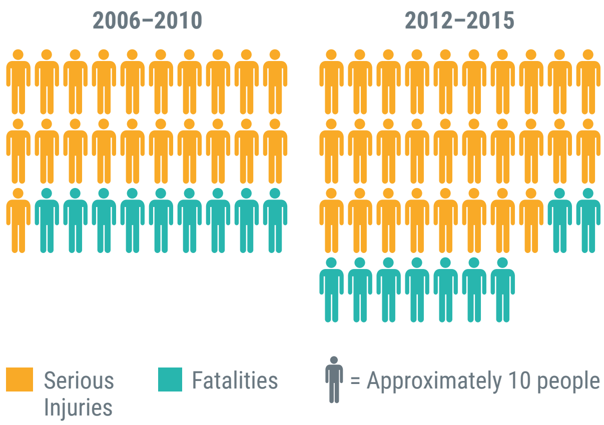


Table 1. Major differences between Vision Zero vs. conventional approach.

CONVENTIONAL APPROACH	VS	VISION ZERO
Traffic deaths are inevitable		Traffic deaths are preventable
Perfect human behavior		Integrate human failing in approach
Prevent collisions		Prevent fatal and severe crashes
Individual responsibility		Systems approach
Saving lives is expensive		Saving lives is not expensive

2. Embrace a Safe System Approach

Vision Zero is an aggressive target, based on a "Safe System" approach to traffic safety, that is fundamentally different from business as usual. (Table 2)

The Safe System approach is a holistic, systems-based strategy that: accounts for all roadway users; anticipates that humans will makes mistakes; and shares responsibility for safety between individual road users, and system designers (i.e. planners and engineers).

What this means in practice is that roadways are designed to prevent crashes from happening at speeds and in situations where the human body cannot physically survive the impact. Where pedestrians are crossing roadways, for example, motor vehicle speeds should be kept below 20-25 mph (see page 50), or controlled, signalized crossings must be provided to separate road users.

Table 2. Major differences between safe system vs. conventional approach

	CONVENTIONAL APPROACH	SAFE SYSTEM APPROACH
What is the problem?	Try to prevent all crashes	Prevent crashes from resulting in fatal and serious casualties
What is the appropriate goal?	Reduce the number of fatalities and serious injuries	Zero fatalities and serious injuries
What are the major planning approaches?	• Reactive to incidents • Incremental approach to reduce the problem	• Proactively target and treat risk • Systematic approach to build a safe road system
What causes the problem?	Non-compliant road users	People make mistakes and people are physically fragile/vulnerable in crashes. Varying quality and design of infrastructure and operating speeds provides inconsistent guidance to users about what is safe use behavior.
Who is ultimately responsible?	Individual road users	Shared responsibility by individuals with system designers
How does the system work?	Is composed of isolated interventions	Different elements of a Safe System combine to produce a summary effect greater than the sum of the individual treatments, so that if one part of the system fails other parts provide protection.

3. Identify Risks, Demand, and Policy Priorities

A data-driven traffic safety action plan starts with an analysis of the problem: what factors make roads more dangerous for people walking and bicycling?

Risk Factors

A detailed crash analysis identified several roadway characteristics that are associated with an increased risk for fatal and serious crashes involving pedestrians and bicyclists.

Speed: Well over half of pedestrian and bike crashes occur on streets with speed limits at or above 35mph

Number of Lanes: Streets with four or more lanes have a significantly higher number of crashes per mile

Lighting: Crashes after dark disproportionately result in severe outcomes, especially for pedestrians where there is no street lighting

Crosswalks: Missing or inadequate crosswalks and sidewalks leave pedestrians vulnerable to being hit.

Roadways with high risk factors are common throughout the Atlanta region, regardless of whether or not serious or fatal crashes have occurred on these roads. Every jurisdiction within ARC has a role to play in eliminating these risky conditions.

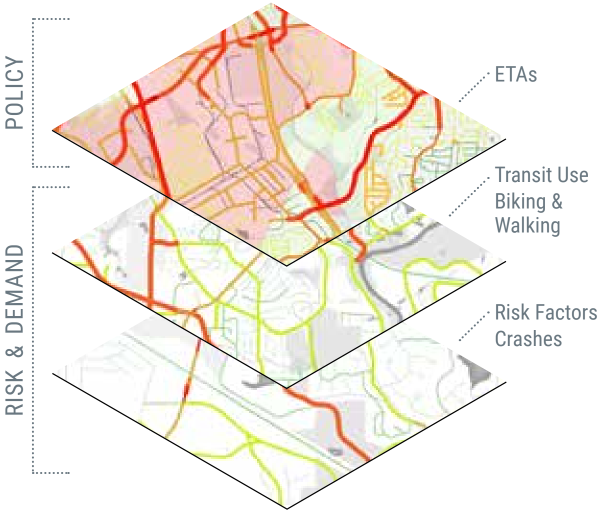
Demand

ARC's regional estimates of pedestrian and bicycle miles traveled, as well as frequency of transit service, were used to show the relative level of walking and bicycling along street segments.

Policy Priorities

Risk factors and demand were also assessed in relation to Equitable Target Areas (ETA)—defined by ARC as communities with a high percentage of people living in poverty or high minority population—as ETA's are a priority focus area for ARC's work.

Figure 2. Data-Driven Analysis Relating Risk Assessment & Policy Priorities



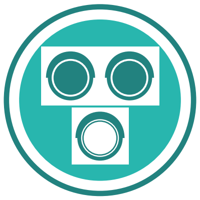
4. Use Evidence-based Countermeasures to Eliminate Risks

There are numerous proven countermeasures available to eliminate danger to people on foot and bike caused by high speed, multi-lane roads that lack crosswalks, sidewalks and protected bike infrastructure.

Safe Streets emphasizes solutions that are well documented by national agencies and organizations to address systemic design issues on roads across the region.

Many of these countermeasures are focused on pedestrian safety. However, slowing traffic down, increasing visibility, and providing better walking conditions also helps bicyclists and people accessing transit on foot.

Medians and Pedestrian Crossing Islands



Pedestrian Hybrid Beacon

Road Diet

Sidewalks

Changing Speed Limits

Leading Pedestrian Interval

Rectangular Rapid Flashing Beacons

Crosswalk Visibility Enhancements

Street Lighting

Separated Bike Lanes

Neighborhood Greenway/ Bike Boulevard

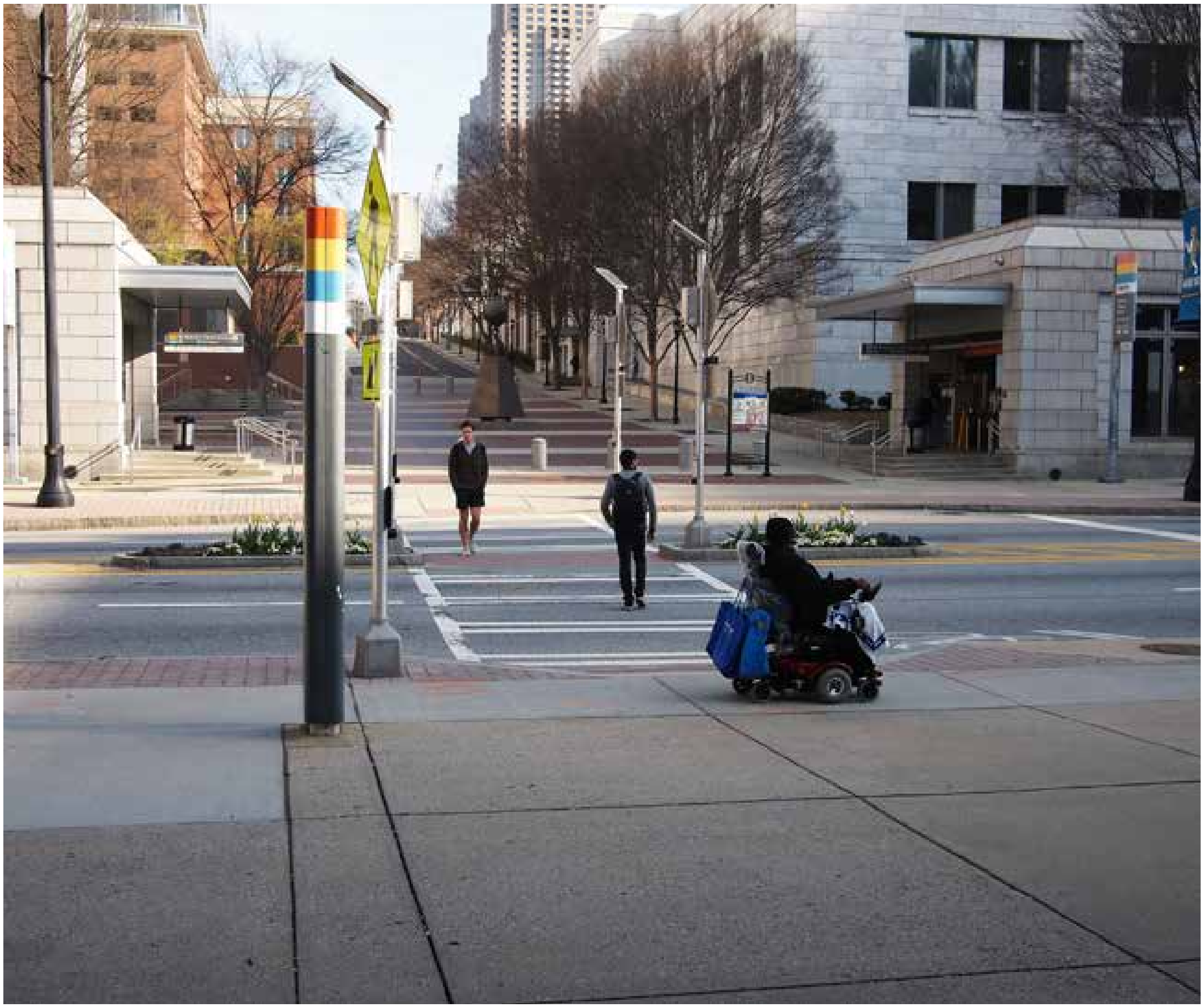
Traffic Calming

5. Short-term: Focus Regional Funding on Safety

ARC oversees the development of the region's Long-Range Transportation Plan (LRTP) and short-term Transportation Improvement Program (TIP). The agency has direct programming authority for $100 million in federal funds and influence on other transportation funding in the region.

There are three ways in which the agency can use the MPO process to generate more and better projects that use these proven safety countermeasures to eliminate roadway risks.

1. Direct more funding to high-risk corridors and communities.
2. Ensure that all funding supports safer designs by incorporating evidence-based countermeasures.
3. Promote better local project development, design, and implementation.



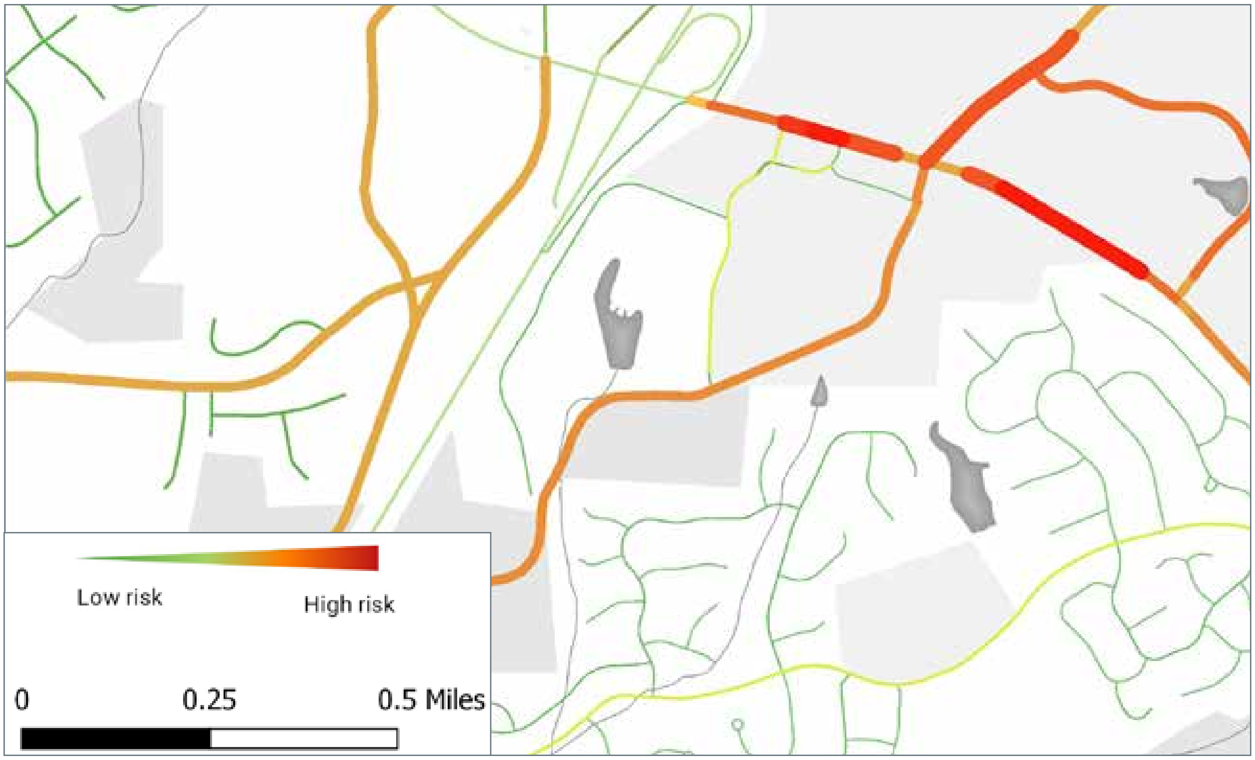
Safe access to transit, for people of all abilities, is a regional priority supported by ARC's funding process

6. Medium-term: Support Better Projects

Safe Streets focuses on the ways in which ARC can most effectively use its role as a regional convener to support local projects that increase safety.

ARC will provide technical assistance to its member jurisdictions and:

1. Support local agencies that take advantage of tools, policies, and programs to systematically eliminate known risks for pedestrians and bicyclists on area roadways.
2. Provide technical assistance, funding, and data to help member jurisdictions develop transportation plans and projects that have a strong safety element.
3. Provide regional opportunities for engagement or techniques for local agencies to use outreach and engagement strategies to go beyond the crash data.
4. Provide guidance and training on the applicability and availability of proven countermeasures to eliminate roadway risks.
5. Provide examples of effective Vision Zero and Complete Streets policies and action plans.
6. Identify funding sources and strategies for safety projects at the federal, state, and local level.



Pedestrian Risk Assessment map showing the relative risk of area roads based on roadway design elements, crash history, demand factors, and policy priorities.

Strategies for Action

7. Long-term: Champion Complete Streets Implementation

Every year in the Atlanta region, hundreds of miles of roads are reconstructed; new urban and suburban development continues in one of the fastest-growing regions in the country. Each project is an opportunity to eliminate roadway designs or development patterns that increase risk for all road users.

Safe Streets recommends ARC champion a Complete Streets approach to planning communities and building roadways. ARC will actively support agencies in the region who design and operate roads for safe use by people on foot and bike and build safer communities.

To support this long-term strategy, ARC will:

① Champion Complete Streets policies and implementation.

② Promote safer arterials, where risks and regional priorities converge.

③ Advance strategies that slow speeds or separate modes.

④ Support the regional transit system with complete streets connections.

⑤ Encourage compact communities that are walkable, bikeable, transit-accessible, and foster shorter trips.

Table 3. A new approach to roadway design.

	CONVENTIONAL APPROACH	COMPLETE STREETS APPROACH
Roads are:	Built for the free-flowing, high-speed movement of cars and trucks, with minimal interruptions	Designed with safe access for people walking, biking and driving, including people with disabilities
Streets are:	Designed for the perspective of people traveling at 55 mph (or more)	Sensitive to the context of adjacent land uses, street classification, and multi-modal systems
The system:	Rewards long distance, single-occupant travel	Rewards short trips and transit use
The network:	Funnels vehicles onto a limited number of high-capacity roadways with minimal access and no realistic alternatives	Supports more connections that offer more choice
The result:	Divides and overwhelms communities in favor of mobility	Responds to and is respectful of community engagement

8. Support Improved Data Collection, Crash Analysis, and Evaluation

Safe Streets for Walking and Bicycling is based on a data-driven, safe system approach to traffic safety. However, there are significant limitations in the available data and ARC recommends future research and analysis that will assist regional efforts to eliminate fatal and serious traffic crashes. These include:

1. More definitive and complete information on the cause or contributing causes of crashes.
2. The inclusion of information on non-auto crashes, near misses, and the perception of safety.
3. Further research into the traffic safety impact of the development patterns and built environment fostered by the Livable Centers Initiative.
4. Developing a better understanding of the intersectionality of race, poverty, housing, access to jobs, health, and traffic safety.

Evaluation

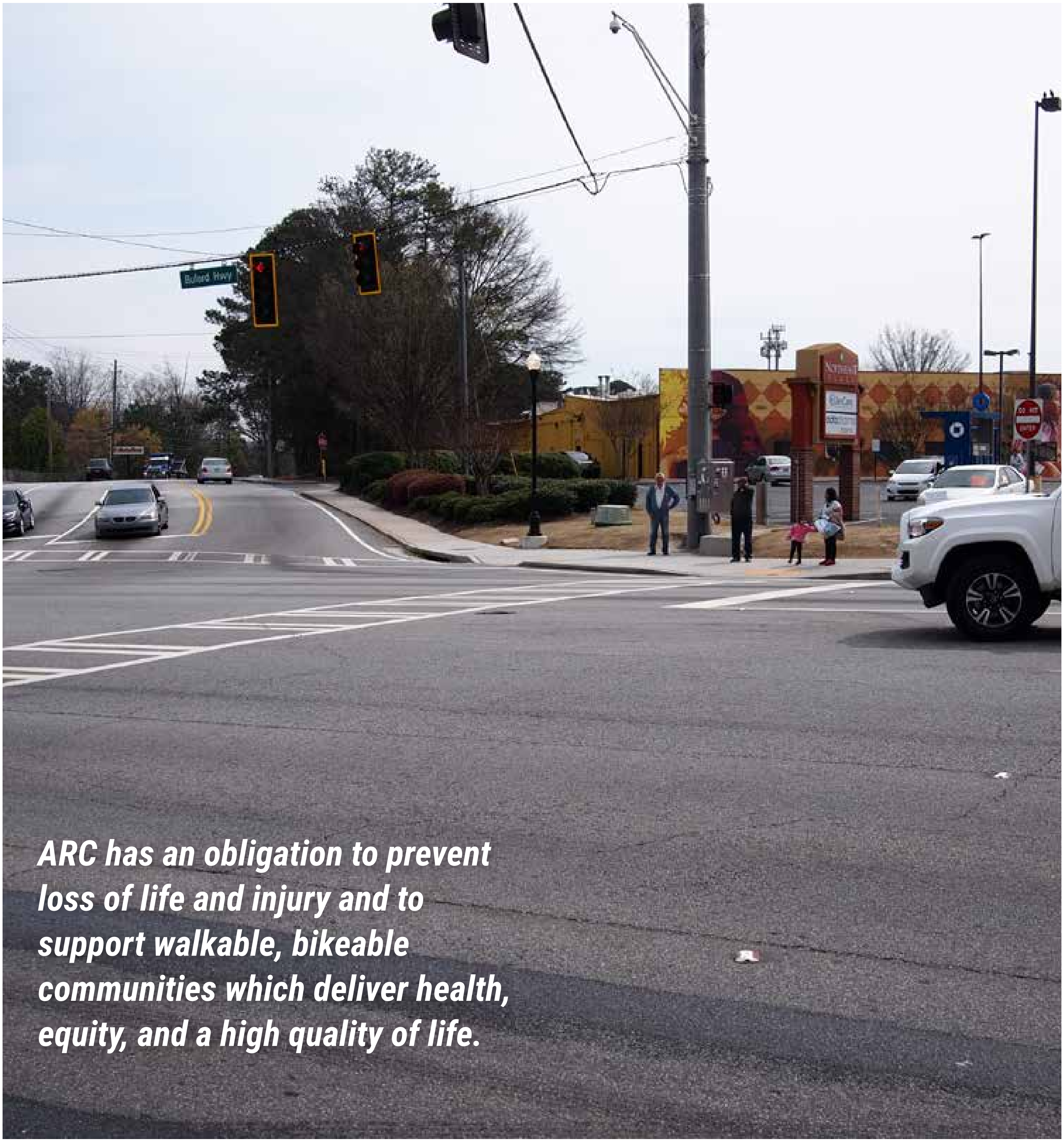
Tracking non-motorized fatalities and serious injuries will help determine whether the region is moving towards zero traffic fatalities and will support the future establishment of more aggressive targets.

ARC will track regional performance measures via the Regional Transportation Plan using metrics including:

1. Number of non-motorized fatalities and non-motorized serious injuries.
2. Anticipated effect of the Transportation Improvement Program (TIP) toward achieving adopted targets.

Tech Parkway safely connects Georgia Tech's downtown campuses for people on foot and bicycle.

TARGET AND APPROACH



ARC has an obligation to prevent loss of life and injury and to support walkable, bikeable communities which deliver health, equity, and a high quality of life.

1. Set a Target: Zero Fatalities by 2030

Current Trends

Between 2006 and 2015, the total number of crashes in the Atlanta region involving pedestrians and bicyclists steadily increased from an annual combined average of 1,685 to 2,581, an increase of 53% (Figure 3). Most of this increase was due to a dramatic rise in pedestrian crashes (from 1,408 in 2006 up to 2,510 in 2015). The number of people killed or seriously injured also increased by 26% from 2012-2105 compared to the earlier years of 2006-2010.

This increase in pedestrian and bicyclist crashes, fatalities and serious injuries can only be partly explained by population growth—there was an increase of 9.5% in the number of pedestrian and bicyclist fatalities and serious injuries per 100,000 population (Figure 4). The only bright spot in current trends is that the percentage of pedestrian crashes resulting in a fatality or serious injury has declined from 20% to 15% (Figure 5).

Figure 4. Total Pedestrian and Bike Crashes in ARC Region, 2006-2015*

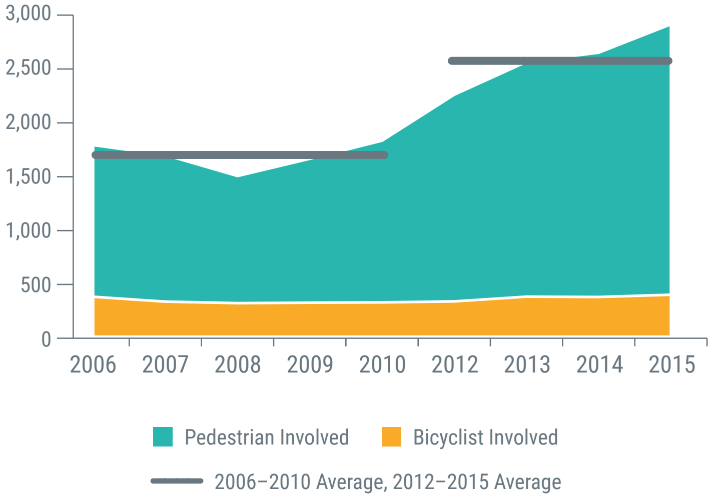


Figure 3. Pedestrian and Bicyclist Fatalities and Serious Injuries per 100,000 Population, 2006-2015*

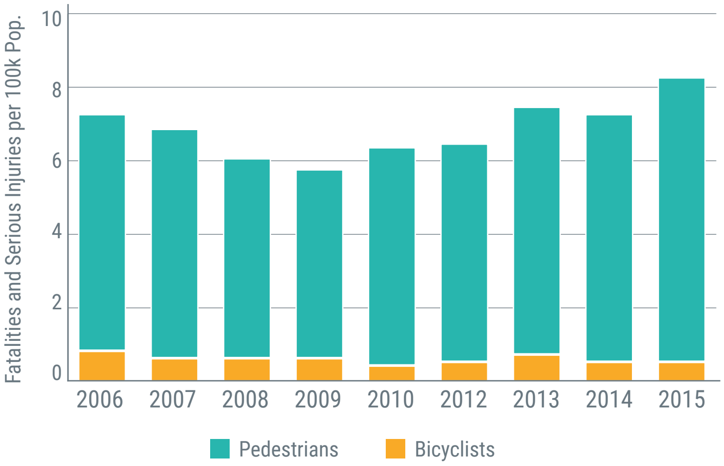
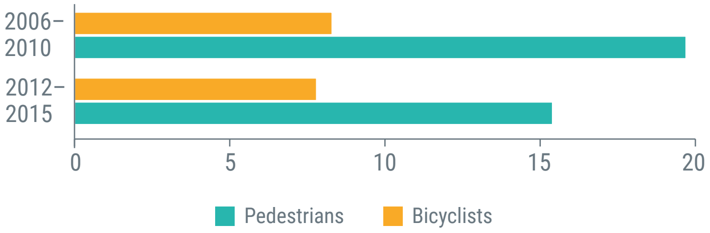


Figure 5. Pedestrian and Bicyclist Fatalities and Serious Injuries as a Percentage of Total Crashes, 2006-2015*



*2011 data omitted due to inconsistencies in reporting.

Establishing Performance Measures

In 2016, the Federal Highway Administration established a requirement for State Departments of Transportation and Metropolitan Planning Organizations (of which ARC is one) to establish targets for overall traffic safety and for the number of nonmotorized fatalities and serious injuries. Since roughly half of Georgia's pedestrian and bicycle fatalities occur in the Atlanta region, the State and MPO targets are inextricably linked—and in February 2018 the ARC board approved adoption of the statewide targets for nonmotorized fatalities and serious injuries in the region.

Unfortunately, because of the forecasted significant increase in nonmotorized fatalities and serious injuries in 2017 and 2018—from 1,002 statewide in 2016 to 1,231 in 2018—the "target" of 1,027 for 2018 represents an actual increase in the number of fatalities and serious injuries statewide. In a resolution adopting these targets ARC, "recognizes the challenges of setting statewide targets and believes it can best assist GDOT in reversing recent upward trends in overall fatalities and injuries by identifying the causes and locations of the most critical safety issues in the Atlanta Region and focusing ARC's efforts and resources on those issues." ARC is also committed to the "long term goal of slowing and eventually reversing recent trends."

GEORGIA'S STRATEGIC HIGHWAY SAFETY PLAN

Every State Department of Transportation is required to develop a Strategic Highway Safety Plan (SHSP) to focus and coordinate traffic safety initiatives across different statewide agencies. The Georgia Department of Transportation adopted its current SHSP in 2015 and is scheduled to update the plan in 2018. The document, Towards Zero Deaths, consolidates the highway safety plans of the DOT, the Governor's Office of Highway Safety, the Department of Public Safety and the 15 Metropolitan Planning Organizations that encompass 65% of the state's population.

Since 2016, the SHSP is also expected to contain the Federally-mandated Safety Performance Measures developed by the GDOT in consultation with its partners. For 2018, these statewide performance measures and targets are:

- Number of fatalities: 1,662 annually
- Rate of fatalities: 1.33 per 100 million vehicles miles traveled (VMT)
- Number of serious injuries: 19,643 annually
- Rate of serious injuries: 16.32 per 100 million VMT
- Number of non-motorized fatalities and non-motorized serious injuries: 1,027 annually

ARC currently programs projects to help ensure statewide targets are met. As the Atlanta region accounts for almost half of all traffic fatalities in the state, the goal of Safe Streets is for the region to exceed these targets and inspire a more aggressive timeline to the elimination of fatalities on Georgia's roads.

Figure 6. Projected Non-motorized Fatalities and Serious Injuries

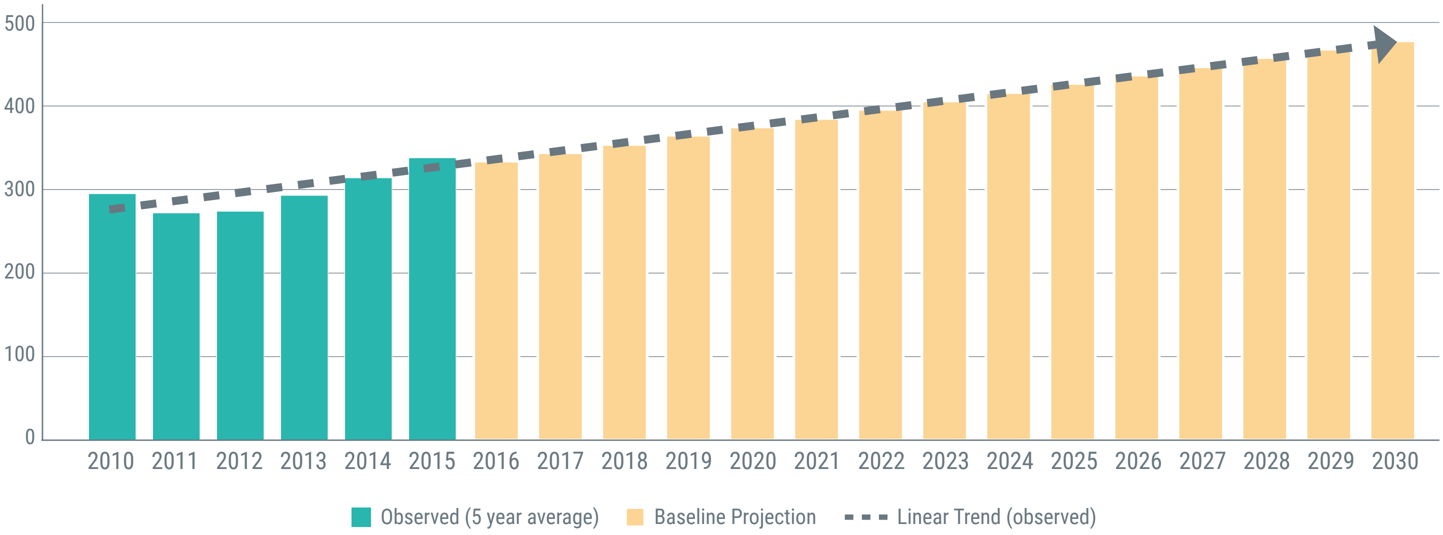
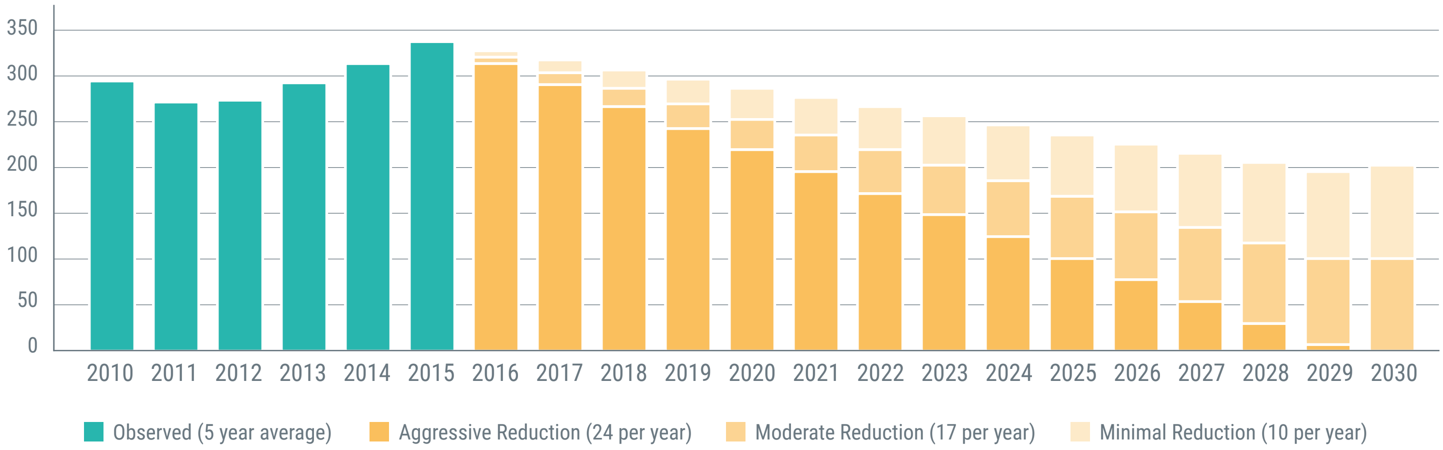


Figure 7. Non-motorized Fatalities and Serious Injuries Target Options



The statewide and regional targets were based on five-year rolling averages of pedestrian and bicyclist fatalities and serious injuries. The observed trend for the region since 2011 is alarmingly upward and if realized would result in 150 additional fatalities and serious injuries in 2030 over 2016 (Figure 6). This projection strengthens the case for taking bold action to reduce pedestrian and bicyclist crashes.

The Path to Zero

Safe Streets lays out three scenarios for reducing the actual numbers of fatal and serious injury crashes to zero (Figure 7). Each of the scenarios is a significant departure from the baseline projections (which may mean that progress is not immediate) and will require a very different approach to tackling traffic safety from what has gone before.

Taking the initial steps to adopting a target of Zero traffic fatalities and serious injuries within a generation is a bold move, but not without precedent. Across the United States, communities are adopting Vision Zero goals, policies, and action plans based on the simple belief that no loss of life is acceptable in our transportation system—we don't accept anything other than zero in the aviation, railroad and shipping sectors, or on building sites and manufacturing plants.

Achieving the goals of the Vision Zero initiative is predicated on the commitment to creating a "Safe System" where fatal and serious injury crashes are methodically engineered out of the transportation system and not accepted as inevitable.

2. Embrace a Safe System Approach

Traffic safety is a constant concern and a primary focus of every transportation and public works department in the region. Significant investments of time, money and creative work go into public information and education campaigns, as well as enforcement and engineering projects to reduce the number of people killed and injured on our roads. Despite that, the number of crashes and victims remains stubbornly high. So, what is different about Vision Zero and a Safe System approach?

The Vision Zero Network, a national network of cities committed to eliminating traffic fatalities by a set date, identifies six key elements that sets Vision Zero apart from conventional road safety efforts.

i. **Traffic deaths are preventable.** Zero is upheld as the only acceptable number of traffic fatalities and the word “accident” is eliminated from the traffic safety vocabulary. Serious and fatal crashes are entirely preventable; they are not accidents and they are not inevitable.

ii. **System failure is the problem.** In the Vision Zero framework, individuals are not the problem. It is flaws in the system—from planning through design, construction and maintenance—that allow roads to have no safe crossings or which set up conflicts between high-speed motor vehicles and pedestrians and bicyclists. Ticketing pedestrians for jaywalking where there are no crosswalks or sidewalks is not going to solve the issue or change people’s behavior.

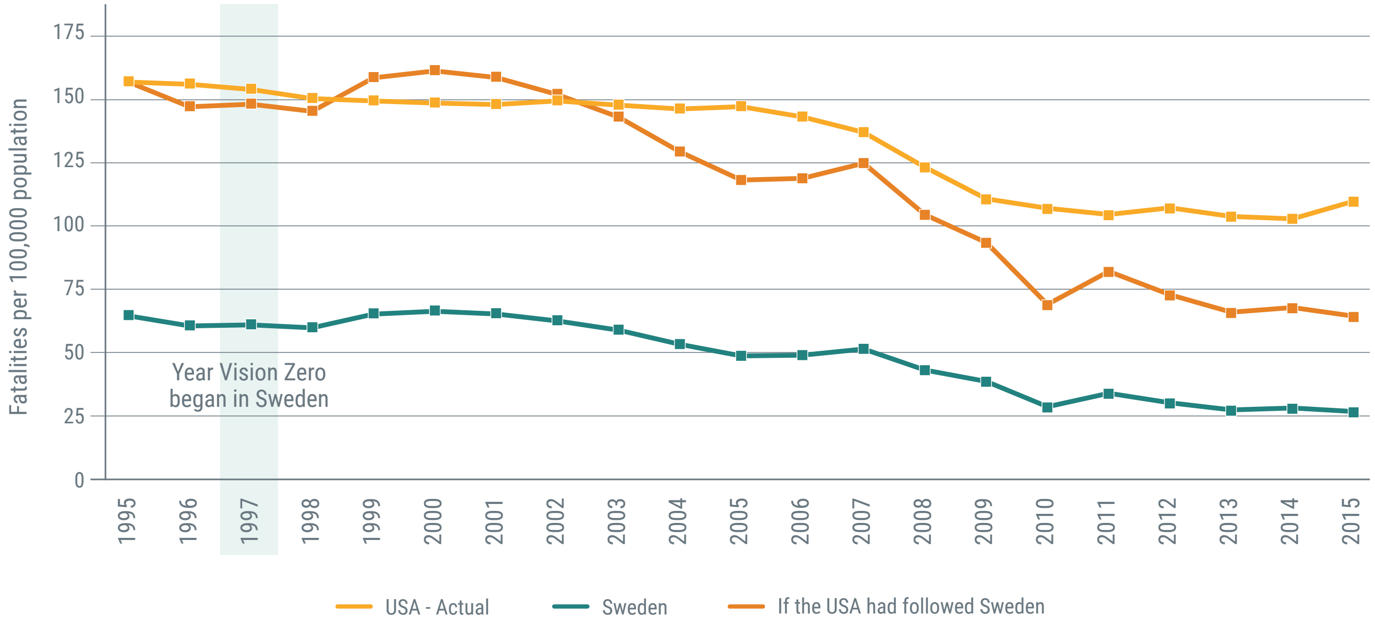
iii. **Road safety is a public health issue.** While conventional approaches to transportation safety have prioritized reducing or preventing collisions, Vision Zero focuses on preventing injuries and fatalities. Engineers are challenged to eliminate the circumstances in which a human body may be exposed to crash forces it cannot survive.

iv. **The Safe System approach is holistic.** Roadway design is a part of the issue, but so are land use and development decisions, school siting choices, housing policies, and a host of factors that affect our transportation options and choices. The tension between speed and safety in the Atlanta region is as much to do with land use as it is road design.

v. **Data drives decisions.** Vision Zero demands a relentless focus on eliminating fatalities and serious injuries first. Preventing red light running and speeding through automated enforcement, for example, may increase rear-end collisions…but reduces fatal and serious injury crashes.

vi. **Social equity is a key goal and component of Vision Zero.** Traffic crashes in the ARC region disproportionately affect vulnerable populations, particularly among those who do not have access to a motor vehicle and who are more likely to be dependent on walking, biking and transit. Communities of concern must be meaningfully engaged in addressing the safety, personal security, accessibility, and larger cultural and societal issues around road safety and community development.

Figure 8. Traffic Safety in the United States and Sweden, 1995-2015



Shifting to Systemic Safety Analysis

Effective data analysis must account for the unique characteristics of different crash types. Pedestrian and bicycle crashes are often widely distributed across a road network and occur with lower frequency compared to more common but less severe crashes. Conventional road safety programs use crash mapping to identify hotspots where a high concentration of crashes have occurred previously. A safe systems approach requires looking broadly and proactively at the underlying factors that contribute to high-risk roadways.

Hotspots often represent high concentrations but only a small portion of all crashes. Georgia DOT defines pedestrian safety hotspots as locations having 10 or more crashes per half-mile of roadway. In an analysis of crash locations in the ARC region, the hotspot approach was found to address only 13% of pedestrian and 8% of bicycle crashes resulting in death or serious injury (Table 4)—the clear majority of pedestrian and bicycle crashes happen in a dispersed pattern throughout the region. Hotspot analysis of all crashes (not just by mode) also bias towards high-frequency crashes, the majority of which are property-only crashes and tend to be less severe, and countermeasures that may reduce crashes but do not address the safety of other road users.

Systemic analysis is a complementary analysis technique increasingly used to assess crash types that are either widely distributed or low-frequency. The Federal Highway Administration (FHWA) states: **A systemic approach to safety involves widely implemented improvements based on high-risk roadway features correlated with specific severe crash types. The approach helps agencies broaden their traffic safety efforts at little extra cost.**

Safe Streets uses systemic analysis techniques to:

- Assess crash and roadway data in combination to identify high-risk roadway features
- Focus on the risks for severe crashes that do not have high frequencies or concentrations
- Account for widely dispersed crashes where location fluctuates over time
- Support proven countermeasures in wider but targeted, data-driven locations

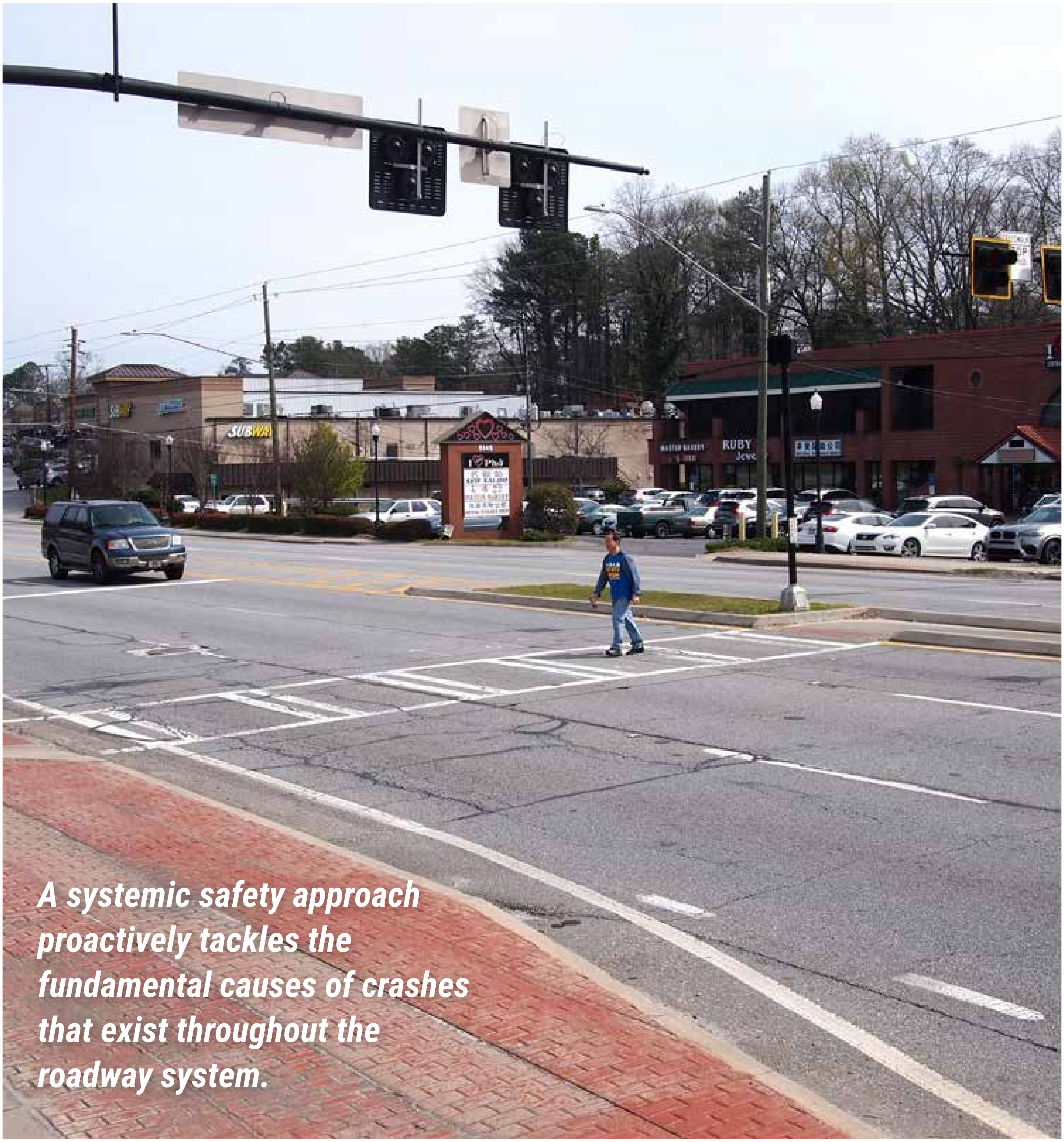
Focusing on hotspots misses most serious and fatal crashes and dramatically limits the probability of ever getting to zero serious injuries and fatalities. A systemic safety approach proactively tackles the fundamental causes of crashes that exist throughout the roadway system and prevents dangerous roadway designs from being replicated.

Table 4. Crashes inside and outside hotspots

	PEDESTRIAN CRASHES			
	Hotspot threshold: 10 crashes per 1/2 mile		Hotspot threshold: 2 crashes per 1/2 mile	
	Crashes	Percentage	Crashes	Percentage
Total crashes within hotspots	1,559	21%	5,329	70%
Total crashes outside hotspots	6,008	79%	2,238	30%
Total crashes	**7,567**	**100%**	**7,567**	**100%**
KSI crashes within hotspots	160	13%	787	64%
KSI crashes outside hotspots	1,076	87%	449	36%
Total KSI crashes	**1,236**	**100%**	**1,236**	**100%**

	BICYCLE CRASHES			
	Hotspot threshold: 5 crashes per 1/2 mile		Hotspot threshold: 2 crashes per 1 mile	
	Crashes	Percentage	Crashes	Percentage
Total crashes within hotspots	193	15%	678	51%
Total crashes outside hotspots	1,129	85%	644	49%
Total crashes	**1,322**	**100%**	**1,322**	**100%**
KSI crashes within hotspots	9	8%	46	41%
KSI crashes outside hotspots	103	92%	66	59%
Total KSI crashes	**112**	**100%**	**112**	**100%**

DATA-DRIVEN SOLUTIONS



A systemic safety approach proactively tackles the fundamental causes of crashes that exist throughout the roadway system.

3. Identify Risks, Demand, and Policy Priorities

Understanding the basic patterns, contributing factors and crash types that occur in the 20-county metro-Atlanta area is essential to identifying specific risk factors and the appropriate countermeasures to reduce or eliminate them from the system.

The four most recent available years of crash reports (2012-2015) were analyzed in detail to perform a risk assessment. The term “KSI Crash” is used in this analysis to refer to a crash in which a person was killed or seriously injured.

Where contributing factors were listed, “failure to yield” and “inattention” were the most common for motor vehicles, pedestrians, and bicyclists. Bicyclists also had “riding on the wrong side of the road” as a common factor.

Roadway and Environmental Risk Factors

Several roadway and environmental risk factors were studied to determine how they might influence pedestrian and bicyclist crash risk. The characteristics shown to be most strongly associated with crash frequency and severity were lighting conditions, the functional class of the roadway, the number of lanes and the speed limit on the road.

Figure 9. Percentage of Total and KSI Crashes by LIGHTING CONDITIONS

Crashes in dark conditions (i.e. at night) disproportionately result in severe outcomes, particularly for pedestrians. The effect is most profound in dark, unlit conditions (compared to dark, lit conditions).

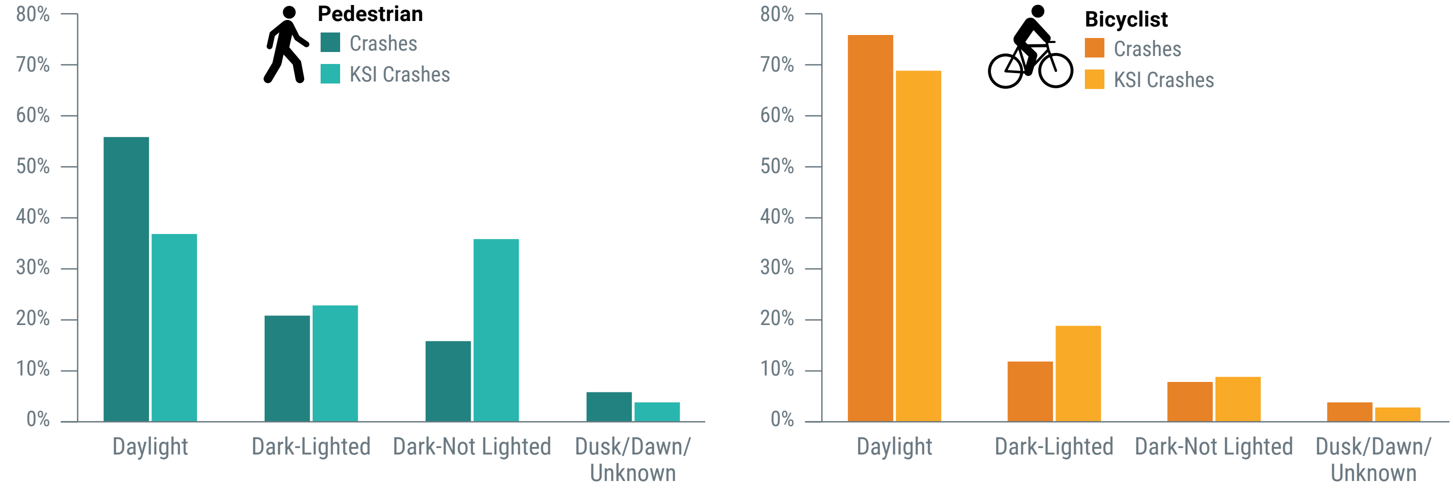


Figure 10. Distribution of Pedestrian and Bicycle Crashes by POSTED SPEED LIMIT

Considerably more than half of pedestrian and bicyclists crashes occur on streets with speed limits at or above 35 miles per hour. Crashes are more severe on higher speed streets.

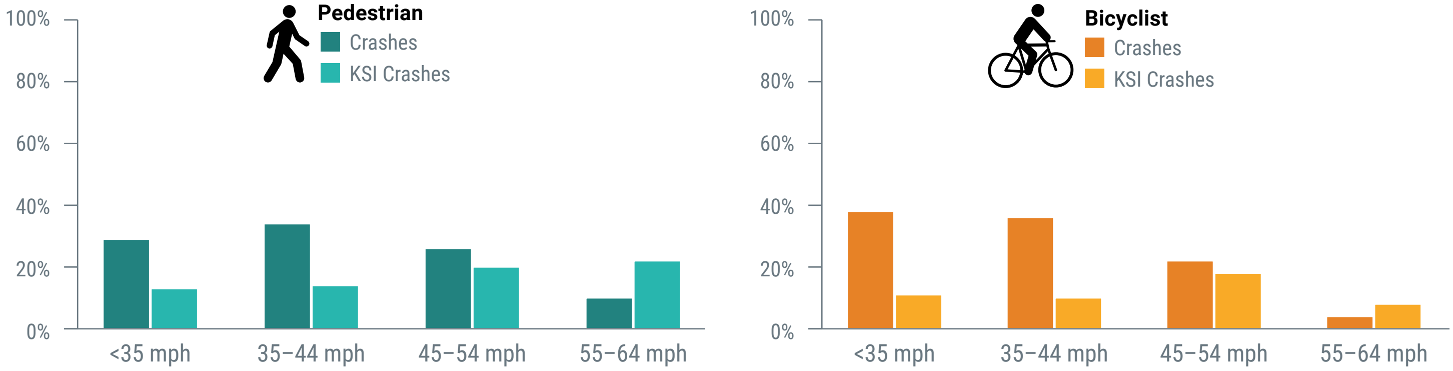


Figure 12. Annual Non-KSI and KSI Pedestrian Crashes per 100 Miles by ROADWAY FUNCTIONAL CLASS

Arterial and collector streets have the highest number of pedestrian and bicyclist crashes per mile, although local streets also account for a high number of crash locations.

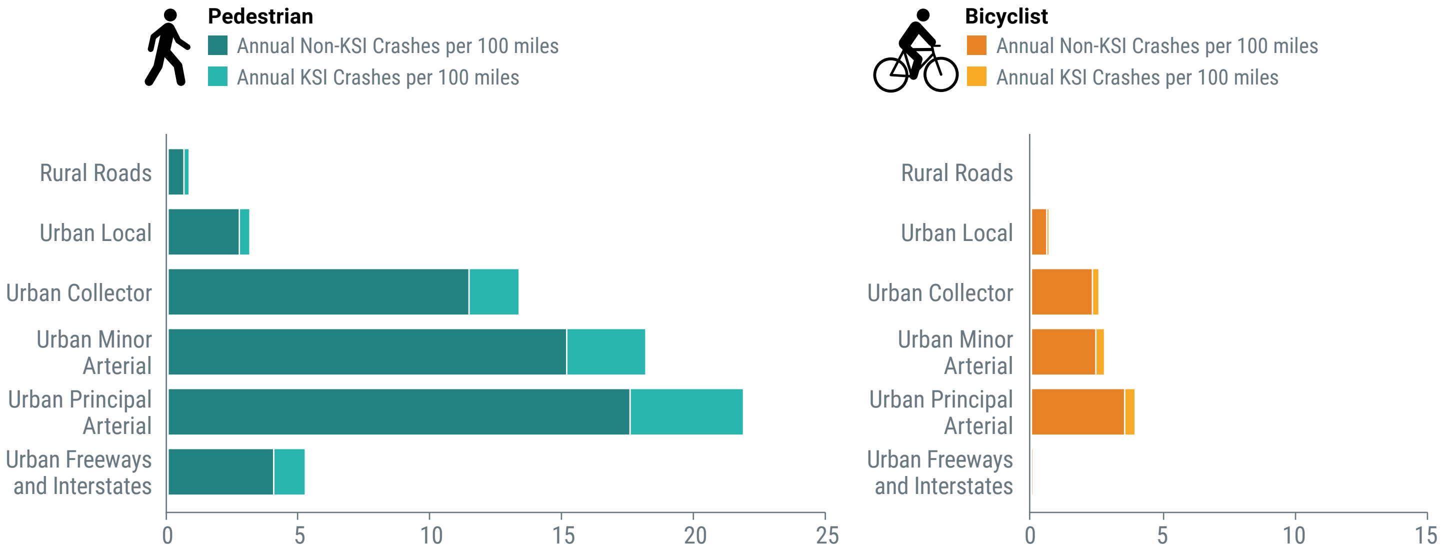
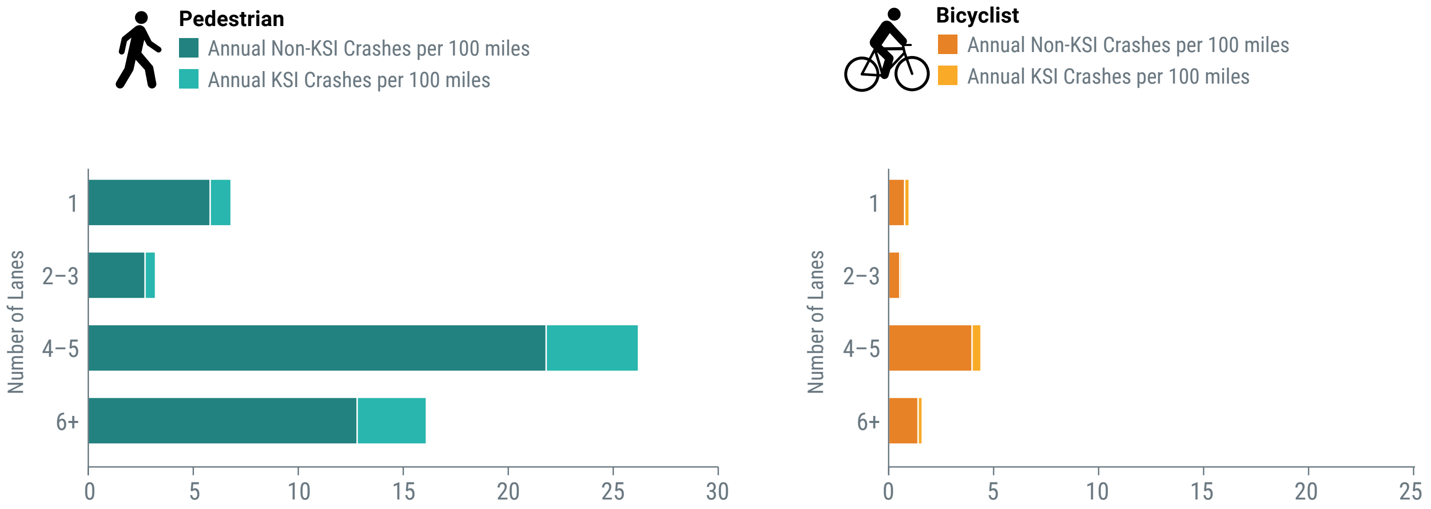


Figure 11. Annual Non-KSI and KSI Crashes per 100 Miles by NUMBER OF LANES

Streets with four or more lanes have significantly higher numbers of crashes per mile compared to streets with fewer than four lanes.



Reviewing Crash Scenarios

Understanding the types of crashes that occur at a given location or along a corridor is also essential to deploying effective countermeasures. Crash reports provide information on the vehicle, pedestrian, and bicycle maneuvers leading to the crash (Tables 5 and 6). Although this data does not provide as nuanced of an understanding as a review of crash narratives, reviewing the data at this level is a cost-effective and efficient way to begin to identify common crash patterns.

- A roughly equal number of pedestrians are hit while crossing in a crosswalk versus those hit while crossing outside of a crosswalk.
- Vehicles turning into pedestrians in the crosswalk are among the most common pedestrian crash scenarios.
- Right-turning vehicles contribute to more bicycle crashes than vehicles turning left, but crashes in which the driver was heading straight are the most likely overall.
- Crash severity for pedestrians and bicyclists is influenced by vehicle speed, with the worst crashes occurring when vehicles are operating at full speed.
- Crashes away from crosswalks and where pedestrians are walking along roads (presumably without sidewalks) result in more severe crashes than other scenarios.

The analysis of GDOT crash data highlights the continuing need to improve the quality and reliability of information that is available to local agencies. The extensive amount of missing information on contributing factors to crashes, for example, significantly hampers the ability to understand what is really happening when crashes occur.

The Georgia Department of Transportation (GDOT) crash reports include valuable information on behavioral contributing factors for each "unit" (bicycle, car, truck etc.) and for each person involved in a crash. Unfortunately, in more than 80% of cases no contributing factors were listed for pedestrians, or the report simply said "other" factors were involved without specifying anything. This was also true for 59% of vehicles in pedestrian crashes, half of all bicycles, and two-thirds of vehicles in bicycle crashes.

This highlights the continuing need to improve the quality and reliability of information that is available to local agencies. The extensive amount of missing information on contributing factors to crashes, for example, significantly hampers the ability to understand what is really happening when crashes occur.

Table 5. Number and Percentage of PEDESTRIAN CRASHES by Top Vehicle and Pedestrian Maneuvers

PEDESTRIAN MANEUVER	VEHICLE MANEUVER		
	Straight	Turning Left	Turning Right
Crossing at Crosswalk	419	531	399
Crossing, Not At Crosswalk	1,094	186	98
Darting into Traffic	659	29	18
Off Roadway	269	54	29
Walking with Traffic	308	12	5

Table 6. Number of BICYCLE CRASHES by Top Vehicle and Bicycle Maneuvers

BICYCLE MANEUVER	VEHICLE MANEUVER			
	Stopped	Straight	Turning Left	Turning Right
Straight	49	443	184	263
Turning Left	4	42	12	4
Turning Right	1	15	5	2

Identifying High Risk Corridors

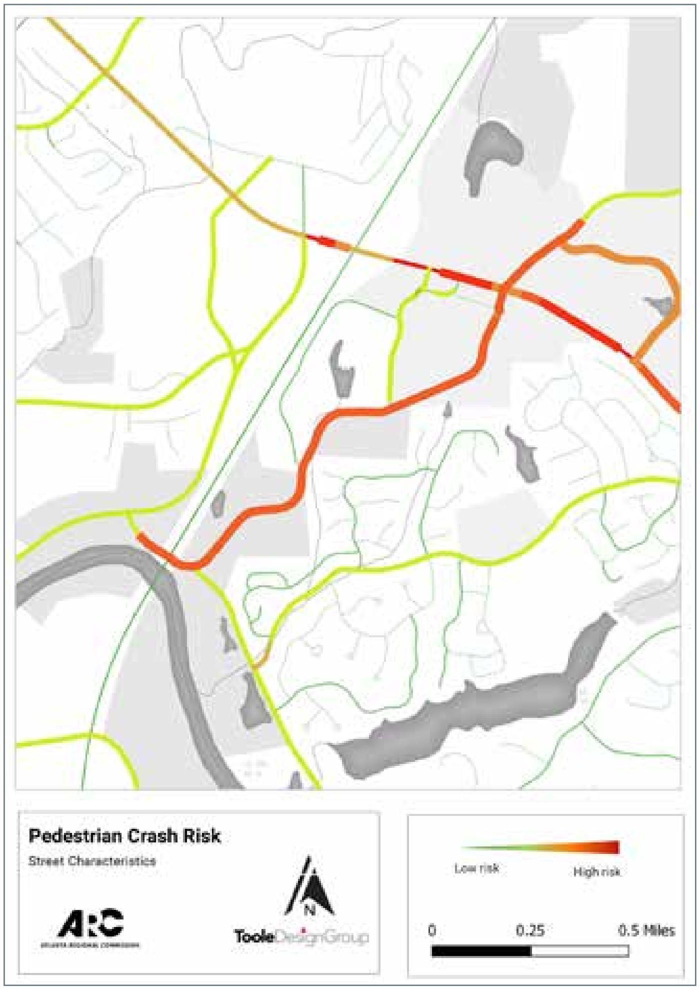
The ***Safe Streets*** analysis confirms that a number of roadway design elements and street characteristics are associated with higher crash rates and/or more serious outcomes. Separate pedestrian and bicycle crash risk scores were calculated for each roadway segment in the region. These crash risk scores were weighted by severity (fatal and serious injury crashes were weighted three times other crashes) and include a weighted crash rate per 10 miles of roadway (Table 7). The resulting crash risk scores were then transferred onto a road map to show the presence (or absence) of risk factors for every road in the region. Significantly, some high-risk segments of roadway may not have a documented history of crashes, but the presence of risk factors suggests it may just be a matter of time before a crash occurs.

Table 7. Pedestrian and Bicycle CRASH RISK SCORES for Number of Lanes

PEDESTRIANS			
Number of Lanes	Weighted Crashes	Weighted Crash Rate per 10 miles	Crash Risk Score
1	227	4.9	0
2	7,856	2.5	0
3	720	23.3	3
4	4,976	22.8	3
5	603	58.3	5
6+	1,540	17.1	3

BICYCLES			
Number of Lanes	Weighted Crashes	Weighted Crash Rate per 10 miles	Crash Risk Score
1	51	1.1	0
2	2,007	0.7	0
3	119	3.8	3
4	902	4.1	3
5	85	8.2	5
6+	145	1.6	2

Pedestrian Crash Risk Map



Looking Beyond the Numbers

The Safe Streets plan is data-driven and goes beyond the conventional approach of identifying crash hotspots to singling out those elements of roadway design that cause risk, wherever they occur. However, even this approach lacks the insight of people on the ground with a personal experience of what happens on the street every day. As part of the planning process, three representative corridors in the region were visited and studied in more detail. These corridors effectively illustrate the critical lessons learned from the data analysis and provide the opportunity to look beyond the numbers into perceptions of safety, to observe actual behavior in the roadway environment, and to gather qualitative feedback on ways in which the roadway environment affects behavior. This was also an opportunity to learn about unreported crashes and near misses.

Corridor #1: Crash hotspots do not tell the whole safety story.

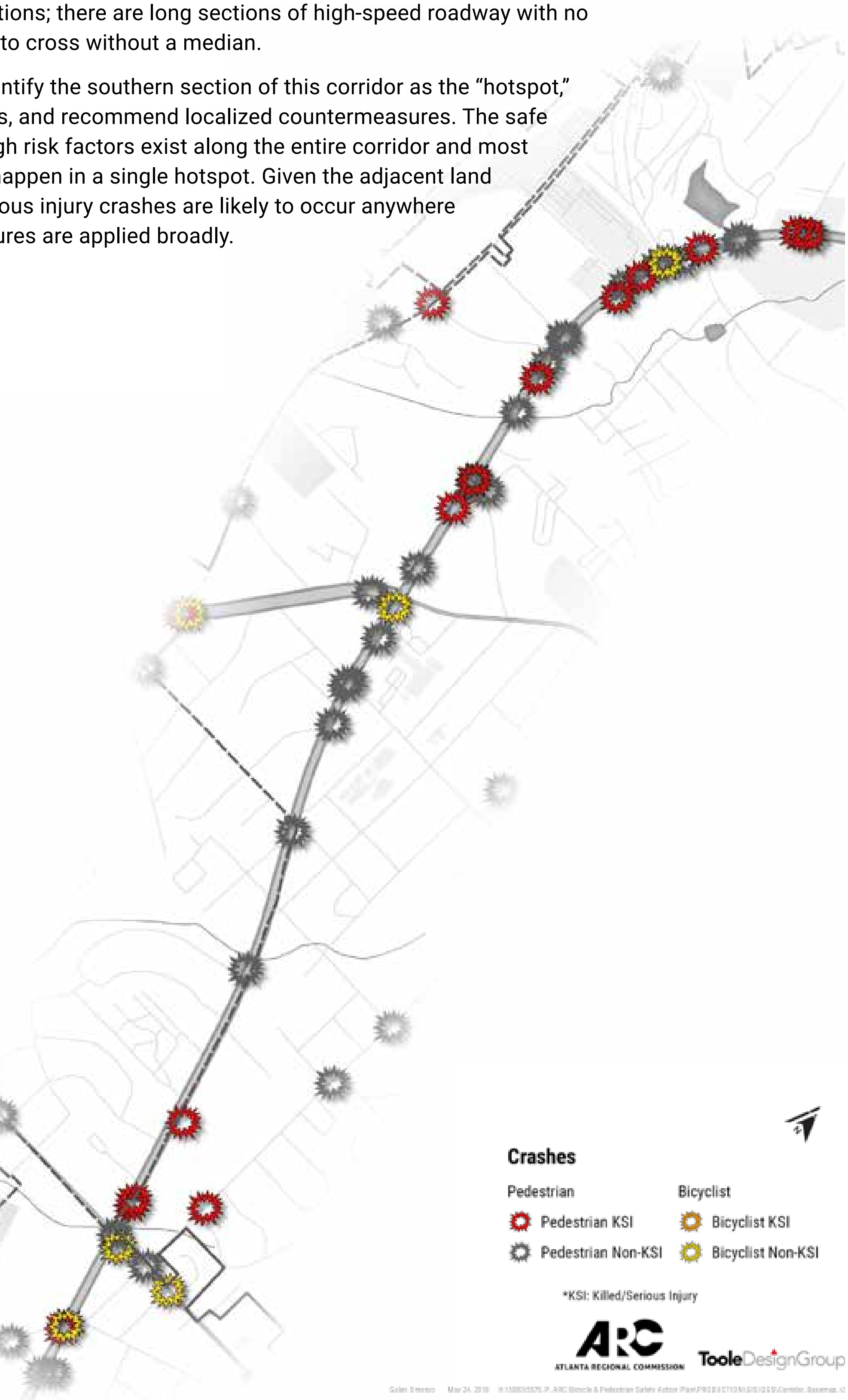
This suburban arterial serves as a regional thoroughfare while also providing access to services, schools, and a community college. The corridor is served by bus routes with signed bus stops and occasional bus shelters. Retail (including restaurants and convenience stores) along the corridor serves adjacent neighborhoods. There are infrequent and poorly lit signalized crosswalks at major intersections; there are long sections of high-speed roadway with no controlled crossings and multiple lanes to cross without a median.

A conventional crash analysis would identify the southern section of this corridor as the "hotspot," due to tight clustering of several crashes, and recommend localized countermeasures. The safe system approach acknowledges that high risk factors exist along the entire corridor and most fatal and serious injury crashes do not happen in a single hotspot. Given the adjacent land uses and demand factors, fatal and serious injury crashes are likely to occur anywhere along this corridor unless countermeasures are applied broadly.

Further north, there are four travel lanes and a center turn lane, speeds remain high, there is inadequate lighting and infrequent (i.e. no) crosswalks despite the presence of transit stops.

Occasional bicycle use is predominantly wrong way riding on the sidewalk, two of the highest risk factors for bicycle/motor vehicle crashes nationwide

The south end of corridor #1 has multiple risk factors (45 mph speed limit, 6+ travel lanes, inadequate street lighting, moderate demand).



Walking & Bicycling Demand and Exposure

Completing the high-risk corridor assessment has to account for a measure of exposure. A high number of pedestrian crashes in a particular location might be a concern per se, but might also be partially explained by a high level of pedestrian activity and high transit use, both of which ARC seeks to promote as important elements of the region's transportation vision.

ARC's travel demand model estimates pedestrian and bicycle miles traveled (PMT and BMT) for residents of each traffic analysis zone in the region. Although street-level exposure estimates (i.e., multimodal traffic volumes) are not available, these area-level estimates provide an overall indication of the level of pedestrian and bicycle activity in a given area.

To work with this data, PMT and BMT estimates were first normalized by geographic area resulting in pedestrian and bicycle "activity density" measures (pedestrian and bicycle activity per unit area), which were organized into categories ranging from 1 (low activity level) to 5 (high activity level). Street segments were then analyzed to determine whether crashes occur more or less frequently with respect to the density of pedestrian and bicycle travel in the area around the segment. Weighted crash rates were found to rise with increasing activity levels, which matches expectations, up to the point when high volumes of walking and biking increase awareness and change the behavior of drivers. Pedestrian and bicycle priority scores were assigned as shown in Table 8.

Table 8. Pedestrian and Bicycle Priority Scores for PEDESTRIAN AND BICYCLE ACTIVITY Variable

PEDESTRIANS			
Pedestrian and Bicycle Activity	Weighted Crashes	Weighted Crash Rate per 10 miles	Priority Score
1	794	1.1	0
2	1,602	2.3	1
3	3,025	4.3	2
4	7,029	10.1	4
5	3,347	27.9	5

BICYCLES			
Pedestrian and Bicycle Activity	Weighted Crashes	Weighted Crash Rate per 10 miles	Priority Score
1	171	0.2	0
2	430	0.6	1
3	669	1.0	2
4	1,343	1.9	4
5	691	5.8	5

Transit Demand

Transit frequency is also included in the high-risk corridor identification methodology. Transit service has a few implications for pedestrian and bicycle safety. For example, people walk—and to a lesser extent bike—to transit stops and are therefore exposed to traffic when accessing transit. While the area-level pedestrian and bicycle activity data discussed above provides an indication of the overall level of expected pedestrian and bicycle use in an area, transit service provides a more nuanced indication of exposure at the street level.

To incorporate transit into the risk methodology, each street segment was assigned a score based on the highest frequency route. Scores were assigned based on transit frequencies in the ranges shown in Table 9. Transit is weighted more heavily in the pedestrian risk score than for bicyclists, as walking is more commonly used to access transit.

Table 9. Pedestrian and Bicycle Priority Scores by TRANSIT FREQUENCY

Transit Frequency	PEDESTRIANS	BICYCLES
15 minutes or less	5	2
16–30 minutes	3	1
31–60 minutes	1	0
NA	0	0

Corridor #2. The most dangerous roads combine numerous risk factors and high demand.

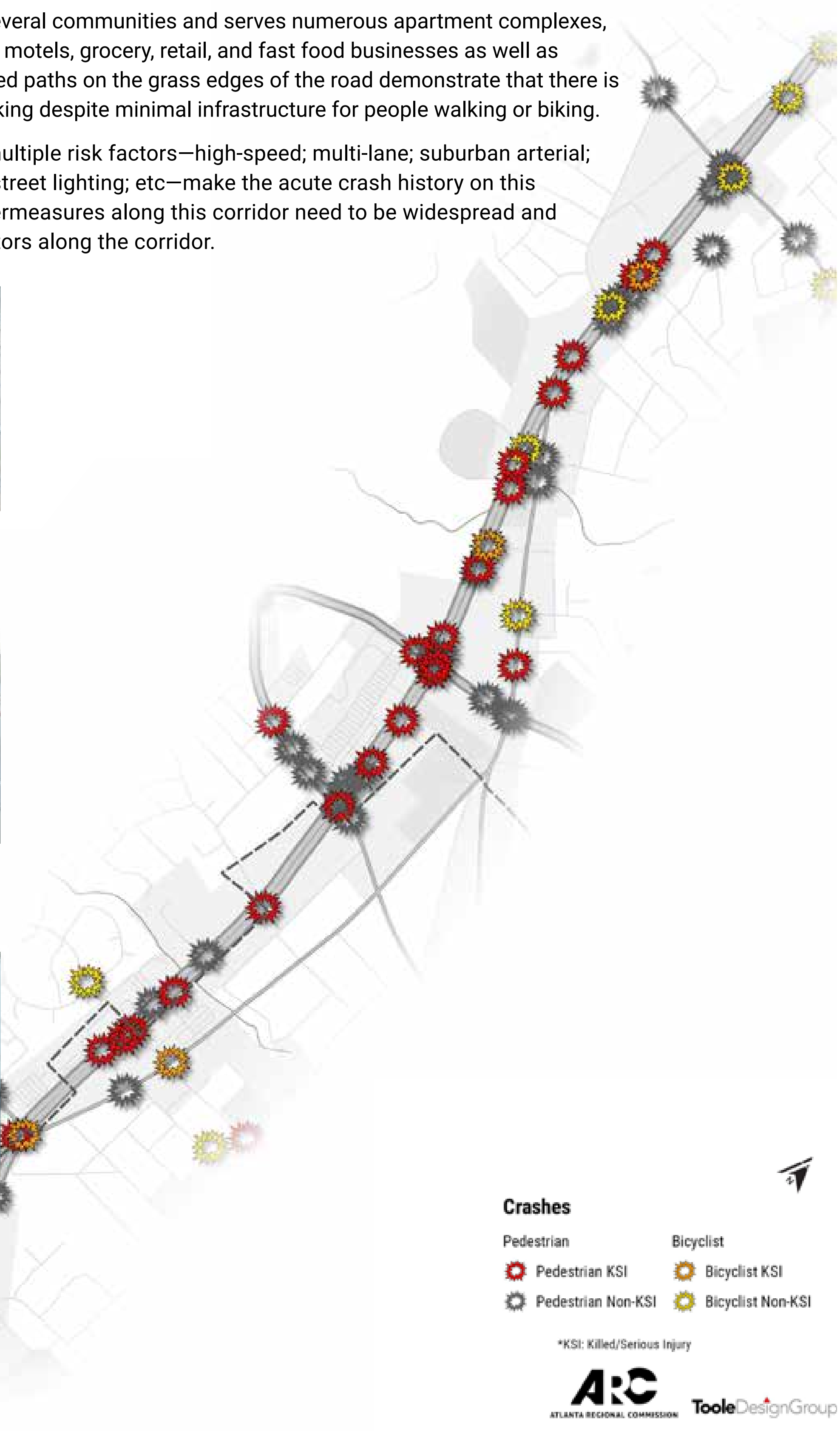
This busy suburban corridor traverses several communities and serves numerous apartment complexes, multi-family homes, long-stay hotels and motels, grocery, retail, and fast food businesses as well as carrying frequent bus service. Well-defined paths on the grass edges of the road demonstrate that there is considerable demand for walking and biking despite minimal infrastructure for people walking or biking.

The combination of high demand and multiple risk factors—high-speed; multi-lane; suburban arterial; missing sidewalks and crosswalks; no street lighting; etc—make the acute crash history on this roadway very predictable. Safety countermeasures along this corridor need to be widespread and redundant to address the many risk factors along the corridor.

Frequent transit service generates a consistent level of pedestrian activity and a need to cross the road.

Pedestrian demand is shown by well-worn paths in the grass. Incomplete and hazardous crosswalks discourage compliance.

Numerous convenience and grocery stores attract pedestrians from nearby housing units and neighborhoods.



Relating Risk Assessment to Regional Policy Priorities

The risk assessment is based on observed crash patterns as well as roadway design and behavior. However, there are also important regional policy priorities that can be overlaid onto the resulting maps to help focus and prioritize investment decisions.

For example, The Atlanta Regional Commission is careful to ensure that its policies and activities do not disproportionately negatively impact members of the community who are classified as children, low income, minority, elderly or disabled. ARC uses Equitable Target Areas (ETAs) to identify areas in the region with greater social needs. Census data is used to identify low-income and minority communities, and these variables are combined into an ETA index for the entire ARC region. The ETA index is used as input for project prioritization and evaluation, monitoring resource allocation, and assisting in decision-making.

This equity perspective is important to traffic safety, as disadvantaged groups experience disproportionate traffic safety burdens due to the fact that they are more likely to use transit, biking, and walking and live in areas without safe infrastructure. Analysis conducted for ***Walk Bike Thrive!*** found that 22 percent of residents in the Atlanta region live in an ETA, but 37 percent of bicycle crashes and 42 percent of pedestrian crashes occur in these areas.

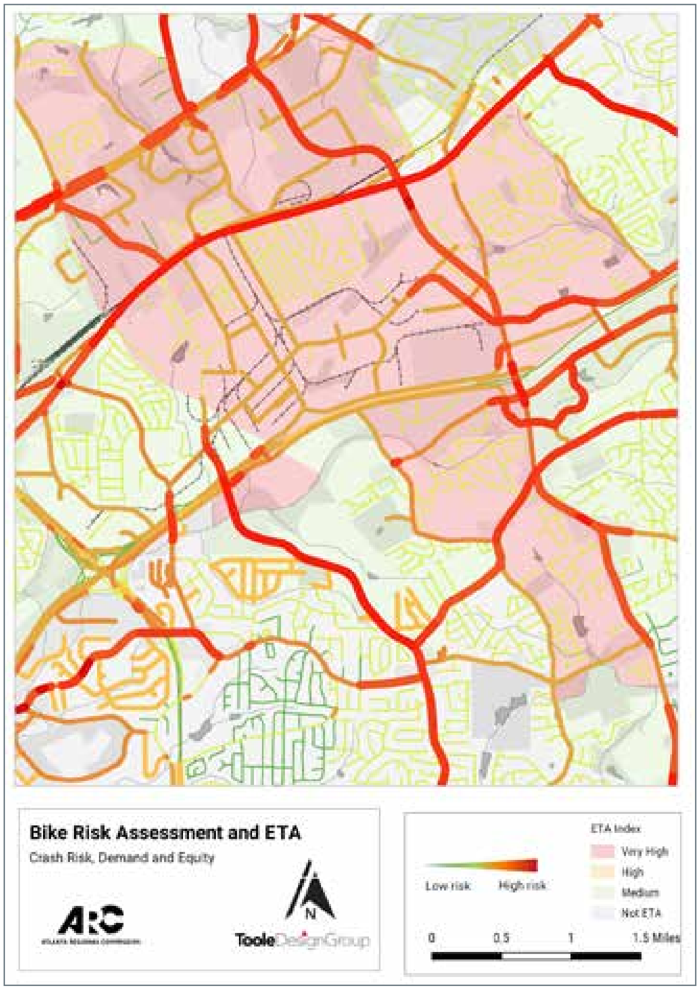
For ARC, the overlap of high-risk roadways and ETAs is an important factor in project selection and prioritization for bicycle and pedestrian safety projects. The map below compares a "very high" ETA area to the risk assessment scores to illustrate the coincidence of high-risk roadways in ETAs. Equity factors are considered in ARC's TIP prioritization process as part of KDP 2 (see page 48-49).

Local jurisdictions using this document should overlay their own policy priorities onto the regional risk assessment maps and undertake their own qualitative outreach process to gather local input into problem identification and project development.

Table 10. ARC Equitable Target Areas Index Rankings

ETA INDEX
Very High
High
Medium
Not ETA

Bike Risk Assessment with ETA



Corridor #3. Equitable Target Areas frequently overlap with high risk, high demand roadways.

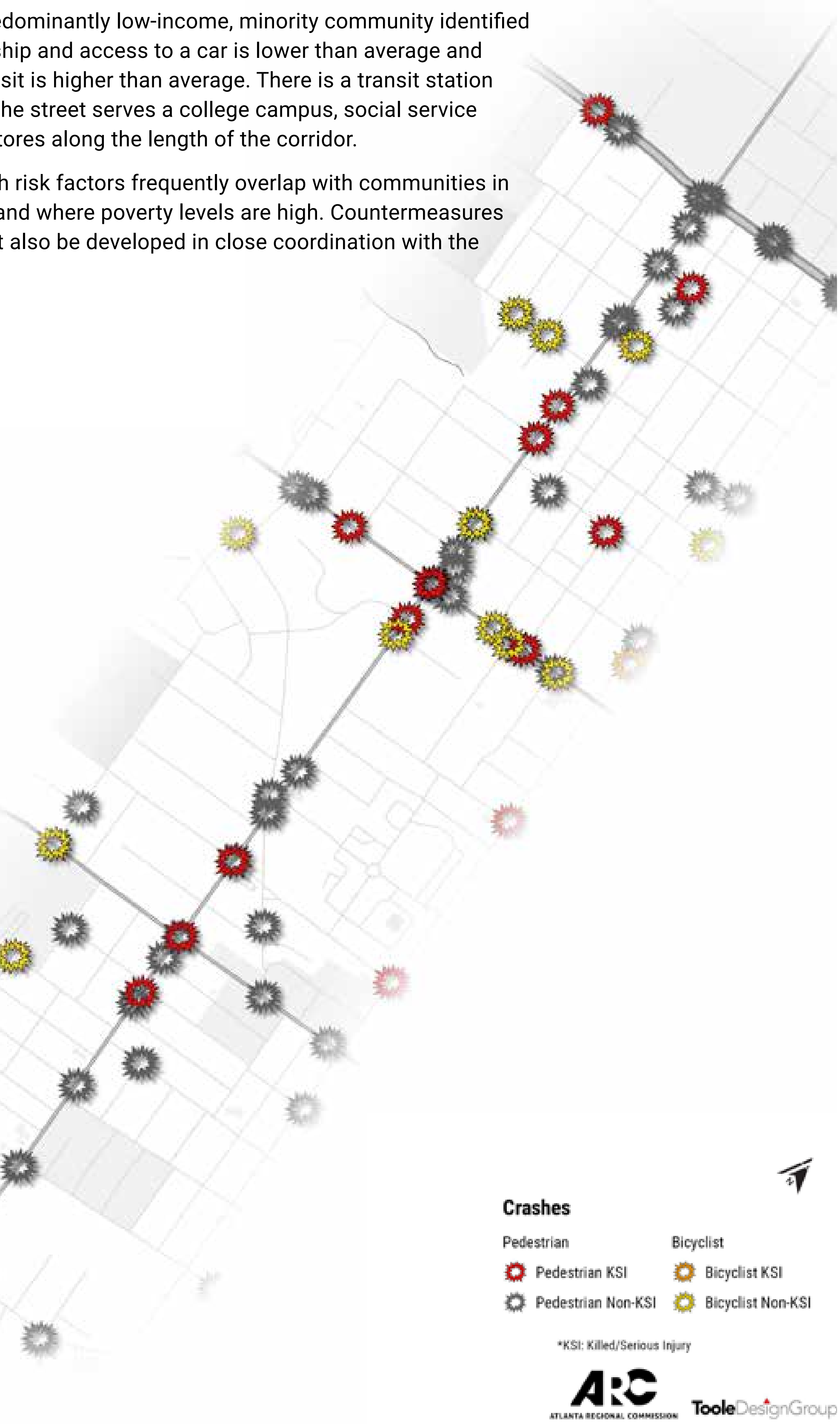
This urban arterial street traverses a predominantly low-income, minority community identified as an Equitable Target Area. Car-ownership and access to a car is lower than average and dependence on walking, biking, and transit is higher than average. There is a transit station at the southern end of the corridor and the street serves a college campus, social service buildings, and numerous convenience stores along the length of the corridor.

High crash locations and roads with high risk factors frequently overlap with communities in which there has been underinvestment and where poverty levels are high. Countermeasures need to address corridor risk factors but also be developed in close coordination with the adjacent community and residents.

This lane configuration leaves no room for people on bicycles.

Limited pedestrian crossing opportunities are poorly marked and controlled.

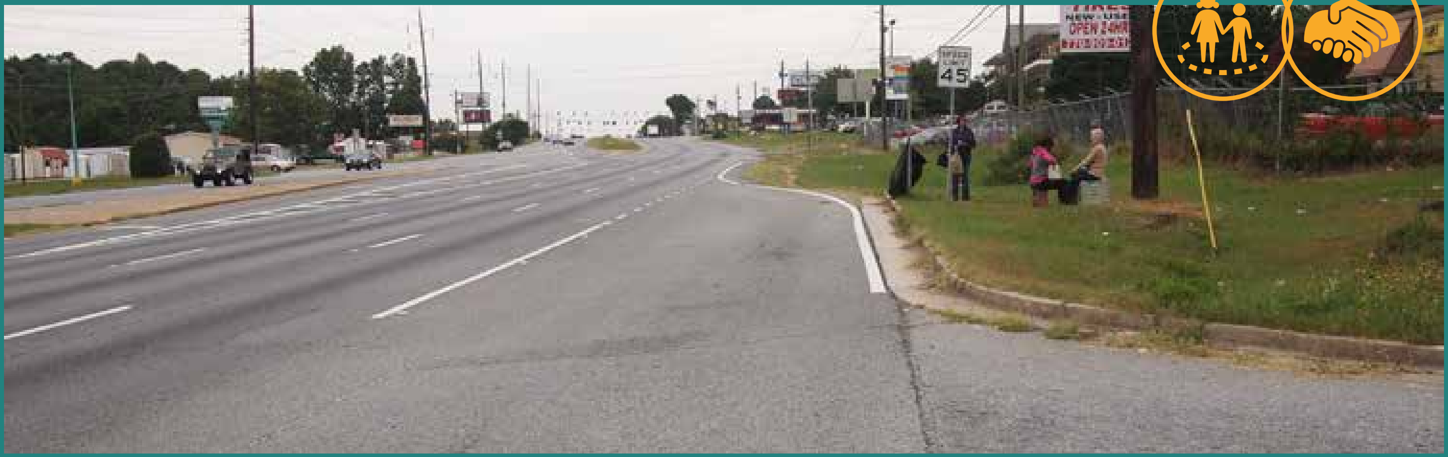
The entrance to a major transit station with no direct pedestrian crossing.



Safety and Equity

Safe transportation is fundamental to building an equitable region. Lack of safe access to jobs, education, and services is disproportionately affecting already vulnerable populations—minorities, people of color, low-income households, children, older adults, and people with disabilities. People should be able to travel safely regardless of age, race, wealth, or ability and no matter where they are in the Atlanta region.

This plan uses Equitable Target Areas (ETAs) as a data tool to identify areas with higher concentrations of vulnerable populations. A safe system must also account for the histories of communities, the lives of individuals, and current social disparities when prioritizing funding and engaging with communities around the region.



Transit users waiting at a bus stop with no sidewalk, crosswalk, seating or shelter.

Safety is a human rights issue.

Travel throughout metro Atlanta is dangerous, regardless of transportation mode. Georgia statewide traffic fatalities (per 100k population) in 2016 were 20% higher than the national average (15.1 vs. 12.5). Travel is particularly dangerous for people walking and bicycling as fatality rates have risen steadily over the past several years and the Atlanta region's Pedestrian Danger Index is roughly twice that of the national average (107.2 vs. 53.8). Transportation should be safe for everyone and roadway designs should benefit everyone.

Safety is an issue tied to race.

Transportation risk is disproportionate for minority communities and people of color. Nationally, black and Hispanic men are second and third, respectively, (behind Native Americans) in highest rates of pedestrian fatalities. Statewide in Georgia, black pedestrians are significantly over-represented in fatality data and nearly 1.68 times more likely to be killed than white pedestrians. Safe infrastructure is critical, but social bias is important also as studies indicate that drivers are significantly less likely to yield to people of color trying to cross the street.

Safety is an issue of income.

Transportation risk particularly burdens individuals dependent upon walking, bicycling, and transit. Low-income households rely significantly more on walking for trips and ride transit at higher rates than other groups. National research shows that the poorest third of neighborhoods are twice as likely to suffer pedestrian fatalities. In the Atlanta region, ETAs suffer nearly twice the rate of pedestrian collisions as non-ETAs.

Safety is an issue of displacement.

As communities change, many low-income and low-car households move to neighborhoods with less transit access or adjacent to busier roads thus increasing their risk while walking, making travel longer or logistics more difficult, and requiring a car or making transportation more expensive.

Safe infrastructure is a civil rights issue.

While risk is higher, safe infrastructure is less likely to be present in minority and low-income communities. National data indicates that streets with safer features—pedestrian-scale lighting and/or traffic calming features—are significantly less common in middle- or low-income communities than high-income areas. Lack of safe infrastructure also requires people to make riskier choices and facilitates increased enforcement, leading to both higher risk and over-policing.

Safety is a children and families issue.

Communities that lack safe infrastructure are particularly dangerous for children and families. Motor vehicle crashes are the number one cause of death for children under 18. Children are more vulnerable to collisions and require safer streets and infrastructure to navigate their communities and, as with other benefits, traffic calming is significantly less common in low-income areas. The benefits of a safe and active childhood are innumerable: better physical and mental health; reduced social isolation and more freedom; fewer burdens on families and schedules; and many more.

Safety is a critical issue for people with mobility impairments.

Roadway risks are amplified for people who have mobility impairments or rely on assistive devices. Pedestrians with disabilities and older adults face additional barriers to travel along sidewalks and to cross fast, busy roads. Lack of mobility reduces independence, limits job opportunities, and increases health risks for people with disabilities. Older adults often outlive their ability to drive safely by 7-10 years, reducing their independence and increasing the risk of depression. Building safer streets and applying universal access design standards to transportation projects especially benefit those underserved populations.

Safety is an economic opportunity issue.

Lack of safe infrastructure inhibits transportation mobility and damages the region's economic vibrancy. The Atlanta region currently struggles with maximizing economic opportunity due to issues of transportation mobility, neighborhood segregation, and access to jobs. For people who rely on walking, bicycling, or public transit unsafe conditions reduce travel choices and constrain economic opportunities for both individuals and the region as a whole. "Walkable urban places" increasingly drive regional growth while providing many benefits for local travel, but are often associated with lower measures of social equity and are not distributed evenly throughout the region.

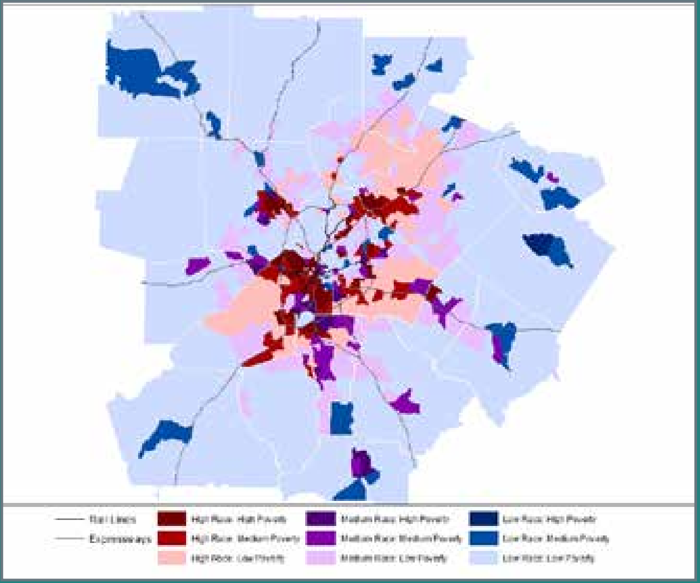
The research is clear that equity, opportunity, safety, and transportation are vitally linked. Complete streets can improve safety outcomes and this plan promotes widespread, systemic infrastructure improvements that are ever-present and user-neutral. To make this happen, planners must incorporate the needs of individuals and communities in ensuring more equitable outcomes.

Agencies should listen and be responsive to the needs of people to ensure equitable priorities and outcomes. A safe system understands that people encounter public spaces differently depending on their own experiences and personal attributes. An equitable process must incorporate the diverse perspective of individuals.

Funding prioritization must account for communities and individuals that lack the political or financial capital to press for safer streets. Safer infrastructure provides benefits to all individuals but risks and benefits are not distributed evenly. The provision of safety infrastructure is a civil rights issue and agencies must be active supporters of communities that have been traditionally under-represented and overlooked.

Planners must work with communities to first understand their needs and desires and then identify infrastructure, tools, and resources to improve safety. Safety from traffic collisions is critical, but a community may have other related concerns including personal security, housing or transportation costs, displacement, transit access, or everyday travel schedules.

Disaggregated Race and Poverty Map



ARC has mapped the intersections of race and poverty in the region. The areas of overlap with high risk corridors for people on foot and bike can help further focus investment decisions.

Interpreting Limited Crash Data

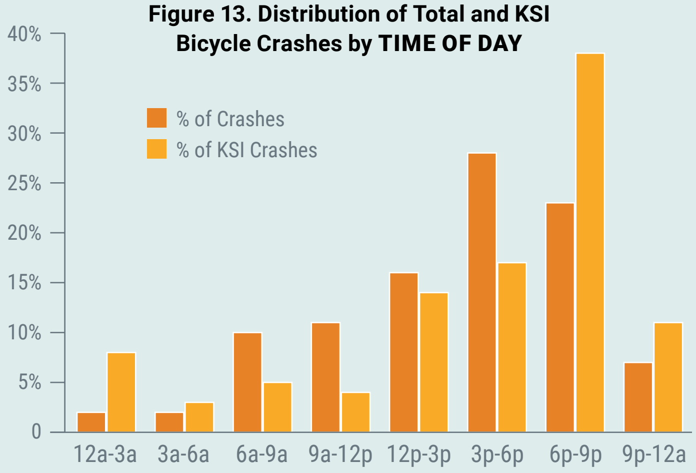
The Safe Streets crash analysis identified limitations in the available data. In addition to informing the "further research" recommendations at the end of the report, this highlighted two critical issues. First, some of the "best" data is the least useful in identifying specific countermeasures. Second, there are gaps in the definition of what constitutes a crash that are significant.

1. Using Temporal Data Wisely

Among the most reliable and consistent data points in conventional crash analyses are the month, day, and time of day at which crashes occur. In the Atlanta region:

- A higher number of pedestrian and bicycle crashes occur from 6am to 6pm, but severe crashes occur disproportionately between 6pm and 6am (Figure 13).
- Pedestrian crashes increase from October through December, while the months of May through August have the highest number of bicycle crashes (Figure 14).
- Fridays see the highest percentage of pedestrian crashes; Wednesday is the highest for bicyclists.

Figure 13. Distribution of Total and KSI Bicycle Crashes by TIME OF DAY



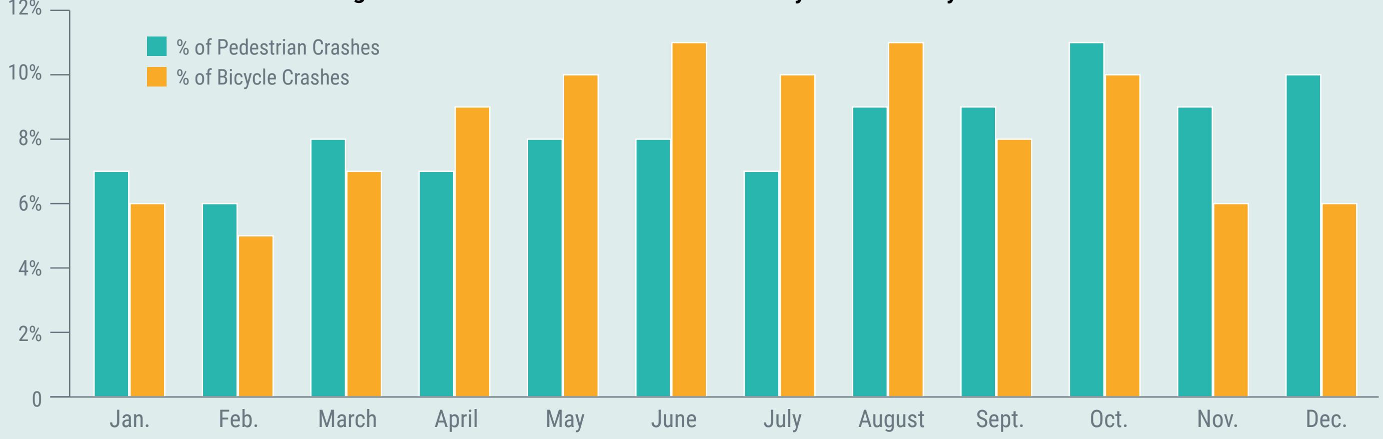
This information is interesting and can be useful in organizing outreach initiatives, however, it is not realistic to use it to tell people not to walk, bike or take transit after dark or to limit their bicycling exposure on Wednesdays, for example. Education and enforcement campaigns using this data may inappropriately target the behavior of pedestrians and bicyclists; blaming the victim, by suggesting that he or she should not have been there in the first place (e.g. riding a bicycle after dark). More importantly, solutions based on temporal data such as this ignore the fact that people walking and biking need a safe environment at all times. Engineering solutions offer that permanence.

2. Recognizing Data Gaps

The crash data are also limited in several important respects:

- although a very high percentage of fatal and serious injury crashes are captured in the police data, minor injury and property damage only collisions are significantly under-reported, especially when pedestrians and bicyclists are involved
- crash reports are not collected unless a motor vehicle is involved and the collision occurs on a public road; this excludes falls caused by broken or missing sidewalks and potholes, as well as crashes in parking lots and on private roads and driveways
- by definition, crash reports do not shed any light on near misses and on locations so dangerous and unpleasant to walk or ride that they are avoided

Figure 14. Distribution of Pedestrian and Bicycle Crashes by MONTH

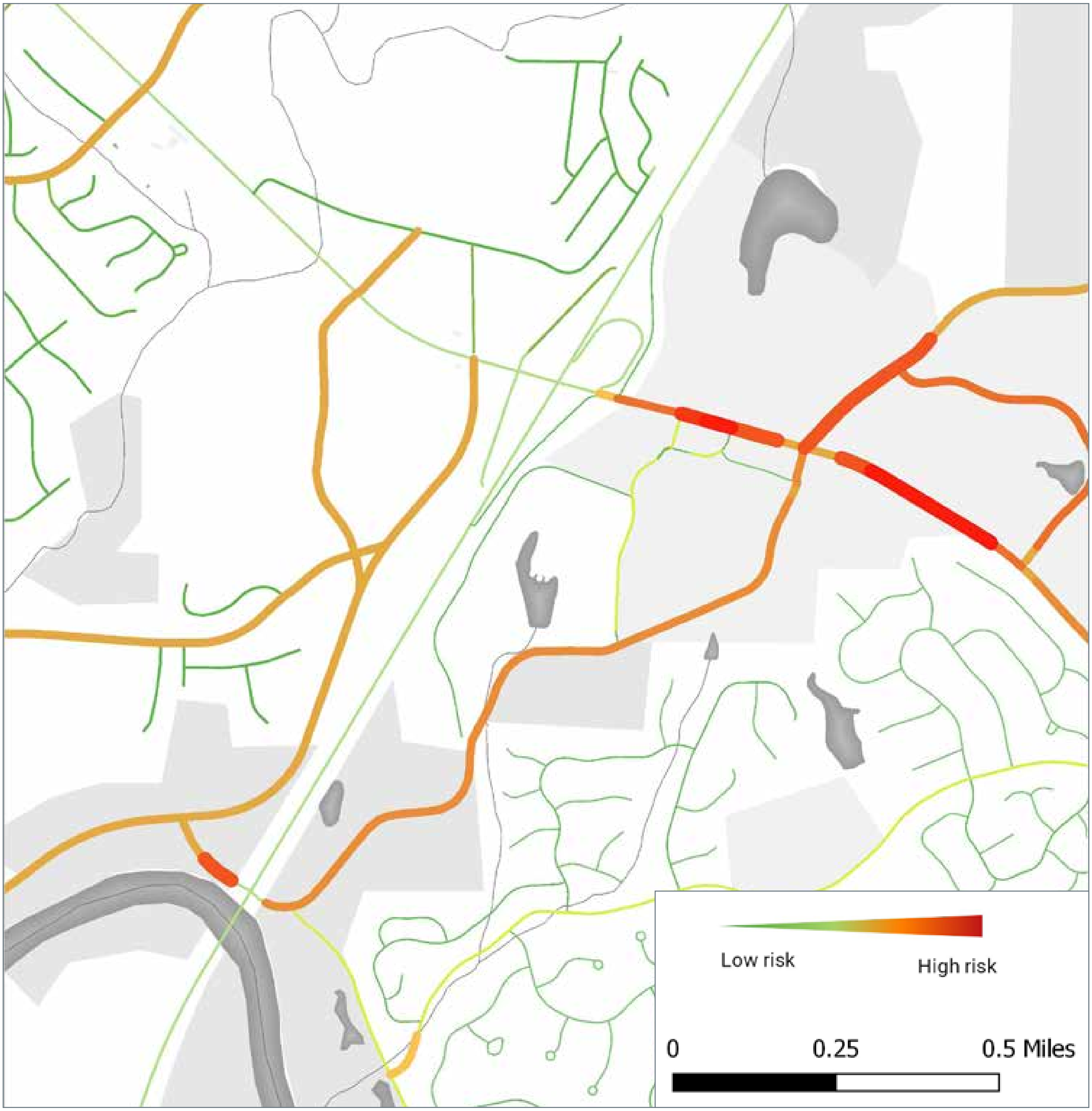


Creating A Risk Assessment Map for the Region

The result of the ***Safe Streets*** crash analysis is a powerful tool to assist ARC member jurisdictions eliminate fatal and serious injury crashes involving people on foot and bike by 2030. The layers of data showing crash risk, demand for active travel, and policy priorities such as equity, are combined into one high-risk corridor map. These maps clearly show the relative risk for pedestrian or bicyclist crashes on every segment of roadway in the ARC region.

The value of the risk assessment map is twofold. First, the maps are adaptable to each jurisdiction. In addition to having layers of data to separate pedestrian and bicyclist risk factors, the GIS-based map also allows local agencies to overlay their own policy priority areas onto the roadway safety assessment.

Pedestrian Crash Risk Map

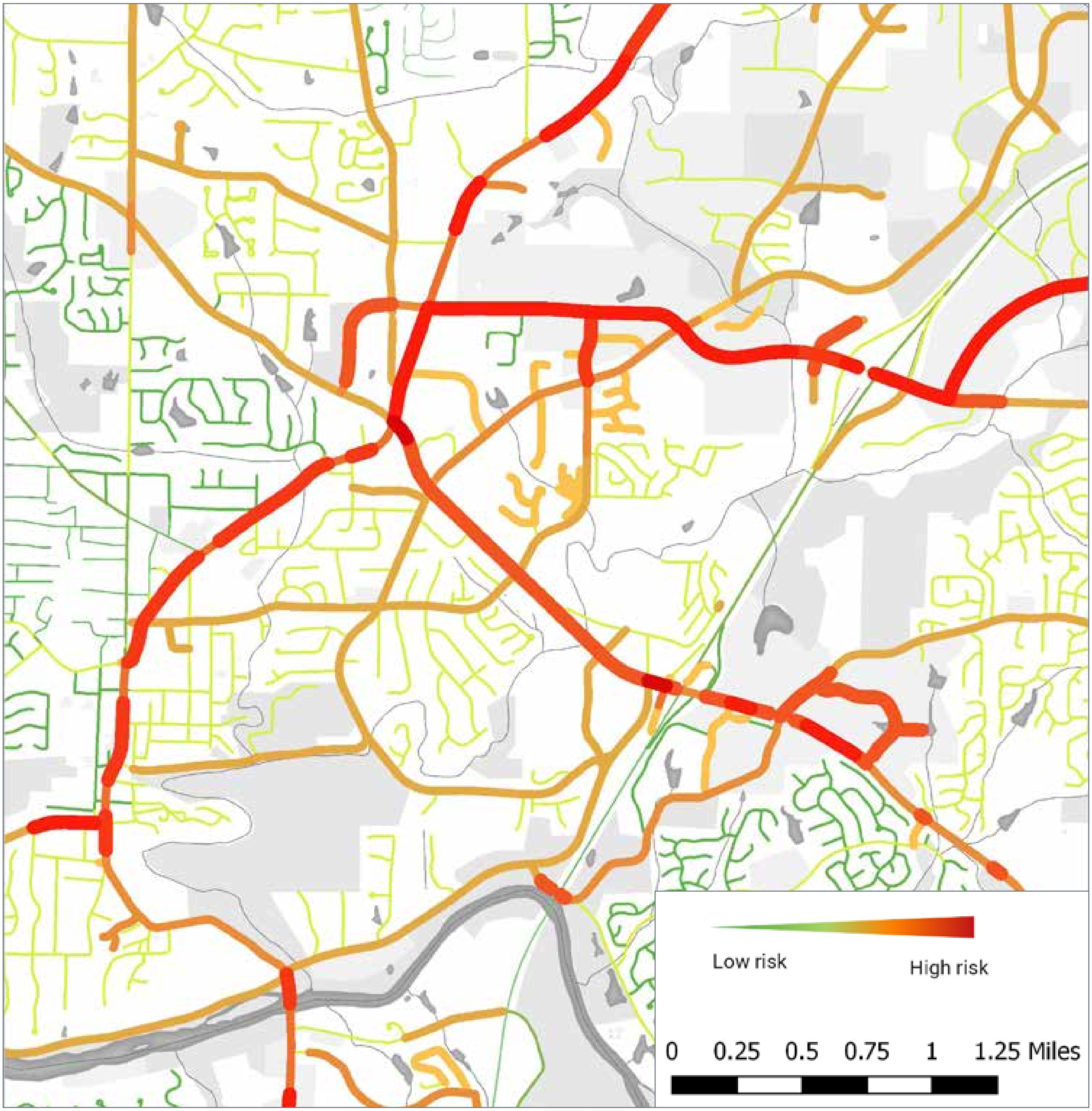


Second, the risk assessment map identifies the highest priority (highest risk) corridors in each jurisdiction—not just the crash hotspots but the systemic roadway design problems that need to be addressed in the short and the longer term.

The maps suggest an approach to identifying and implementing countermeasures that is deliberate, proactive, and different from past approaches to traffic safety that aren't working today.

On the following pages, the ***Safe Streets*** plan identifies a number of proven countermeasures that address the greatest risks to people on foot and bike, coupled with an approach to implementing these projects that can achieve the goal of zero fatal and serious injury crashes by 2030.

Bike Crash Risk Map



4. Use Evidence-based Countermeasures to Eliminate Risks

The findings of ***Safe Streets*** support the need for a new approach to the design and operation of roads in the Atlanta region, and in particular the need to prioritize pedestrian and bicyclist safety and mobility.

High-speed, multi-lane roads account for a high percentage of crashes in the region, especially those resulting in fatalities or serious injuries. Where these arterials intersect with land uses and transit activity that generate high levels of walking and bicycling, the crash risk is high. Reversing the crash trend and achieving ARC's and Georgia's long-term safety goals will only be possible with a commitment to implementing proven countermeasures as part of an overall complete streets approach that changes conditions for people walking and bicycling on major streets throughout the region.

Fortunately, many of the tools necessary to eliminate the risk factors on the region's roads already exist and have been well researched, tried and tested by Federal, state and local governments. This plan recognizes that dispersed crashes require widespread intervention and puts a particular emphasis on countermeasures that provide systemic or corridor-level safety.

The best safety solutions layer different treatments (i.e. crosswalks plus lighting) and ensure that multiple countermeasures provide redundant benefits and are mutually supportive of safer outcomes. The countermeasures in ***Safe Streets*** have been based on national research or drawn from national guidance, however planning and engineering judgement will be required to ensure that countermeasures are appropriate for their location.

Medians & Pedestrian Crossing Islands		✓	✓	✓	✓	✓		
Pedestrian Hybrid Beacons (PHB)			✓		✓			
Road diet		✓	✓	✓				
Lane diet		✓	✓	✓				
Sidewalks		✓	✓	✓				✓
Crosswalks					✓			
Changing Speed Limits		✓	✓	✓			✓	
Leading Pedestrian Intervals (LPI)		✓				✓		
Rectangular Rapid Flashing Beacons (RRFB)					✓			
Crosswalk Visibility Enhancements	✓				✓			
Street lighting	✓					✓		
Separated bike lanes		✓		✓			✓	
Traffic calming				✓		✓		✓

Medians and Pedestrian Crossing Islands

A median is the area between opposing lanes of traffic and may be created by pavement markings, raised medians or islands (often with landscaping). Typically installed along the length of a multi-lane suburban or urban street, medians can reduce head-on motor vehicle collisions and can provide a valuable refuge for pedestrians crossing a road in multiple stages. Wide medians can also be used to create a pedestrian crossing island.

Pedestrian Crossing Islands reduce crossing distances and provide a protected refuge and waiting area at intersections or midblock crossings. Pedestrian crossing islands should be at least 6' wide and are often accentuated with high visibility signs, crosswalk markings, and signals.

New medians on Buford Highway provide a refuge for pedestrians

Boulder, CO

Risk Factor and Behavior Addressed

Medians and pedestrians crossing islands address risk factors created by multi-lane roads (4 or more lanes) and higher speeds (35mph and above). They can be particularly effective on roads where there are long distances between intersections and controlled crossings; especially on roads served by transit.

Benefits

- Raised medians cut pedestrian crashes by 46%
- Crossing islands can reduce pedestrian crashes by 56%

Costs

Average $15,000 depending on the size and construction materials.

Examples in ARC region

- 10th Street at Midtown MARTA station, Atlanta, GA
- East Ponce de Leon Avenue, Decatur, GA
- Dekalb Avenue at King Memorial MARTA station, Atlanta, GA

REFERENCES

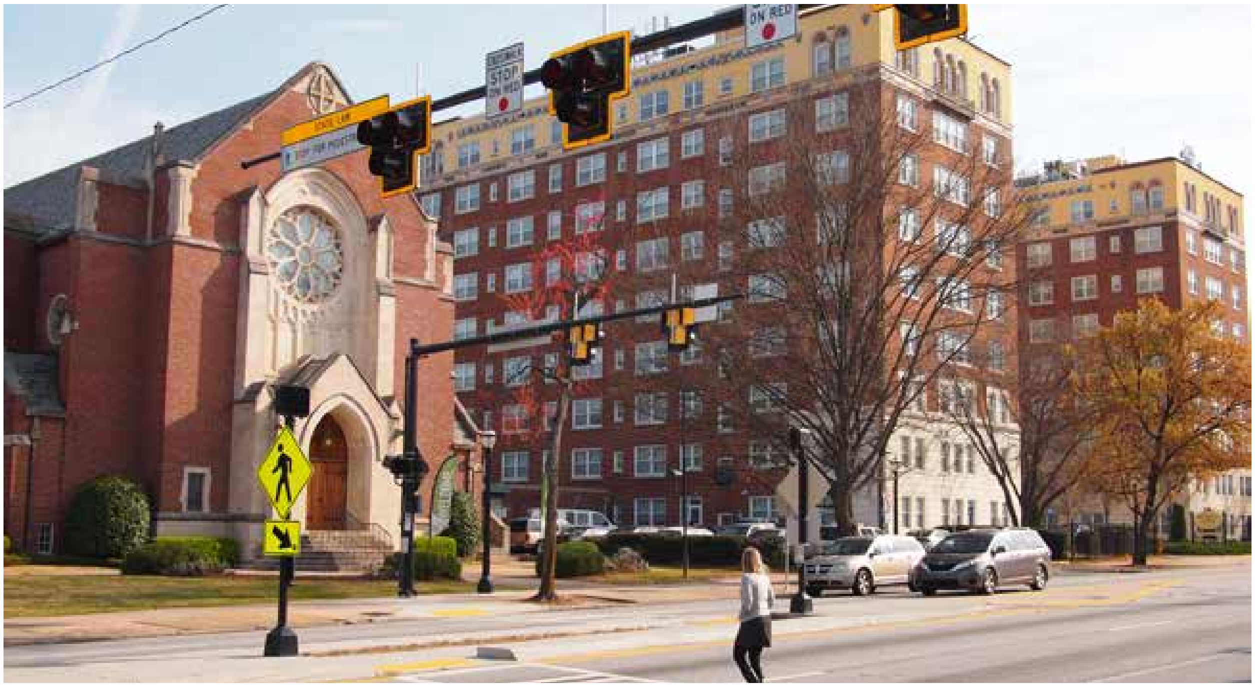
National Highway Traffic Safety Administration, Traffic Safety Facts - 2015 Data - Pedestrians. Report DOT HS 812 375, (Washington, DC: 2017).

Desktop Reference for Crash Reduction Factors, FHWA-SA-08-011, September 2008, Table 11

Pedestrian Hybrid Beacon

A pedestrian hybrid beacon (PHB) is a pedestrian-activated signal that uses flashing and solid lights to improve roadway crossing safety. When activated, the signal immediately flashes yellow to alert drivers before changing to a red stop light. When vehicles are stopped, pedestrians are given a Walk signal. PHBs are used where traditional traffic signals may not be needed, but pedestrians need to cross where vehicle speeds or volumes are high, especially at schools, shared-use paths, parks and other high-pedestrian volume areas. The PHB is sometimes referred to as a HAWK (High-intensity Activated crossWalK beacon) signal.

The PHB offers more control than a flashing beacon as it assigns right of way and provides positive stop control, however it isn't a full pedestrian signal and even allows motorists to proceed once the pedestrian has cleared their side of the roadway.



Risk Factor and Behavior Addressed

Nationally, more than 75% of pedestrian fatalities occur at non-intersection locations. In the ARC region, high risk factors for pedestrians include high-speed, multi-lane roads with limited crossing opportunities.

Benefits

- PHB's reduce pedestrian crashes by 69% and all crashes by 29%; they reduce fatal and serious injury crashes by 15%
- PHBs only operate when activated by a pedestrian. Motor vehicle traffic is not delayed if there are no pedestrians waiting to cross.

Costs

PHBs average $60,00 per crossing

Examples in ARC region

- Buford Highway (US 23/GA 13), Atlanta, Brookhaven, Chamblee, & Doraville, GA
- Ponce de Leon Avenue (US 23/GA 8), Atlanta, GA
- Candler Road (GA 155), Dekalb County, GA

REFERENCES

CMF Clearinghouse, CMF IDs: 2911, 2917, 2922.

National Highway Traffic Safety Administration, Traffic Safety Facts - 2015 Data - Pedestrians. Report DOT HS 812 375, (Washington, DC: 2017).

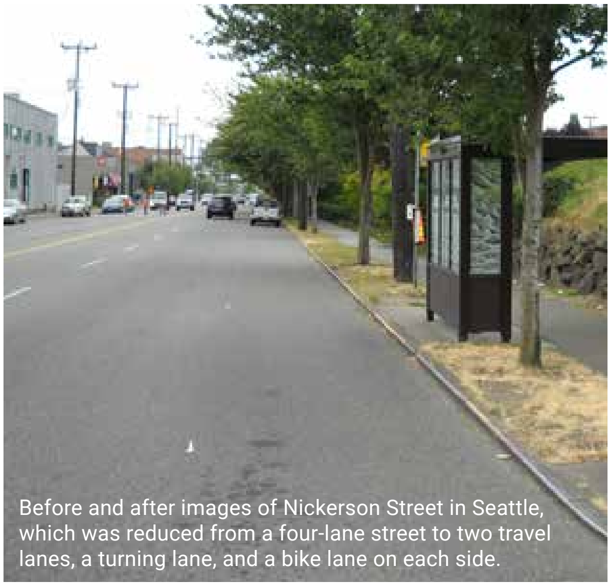
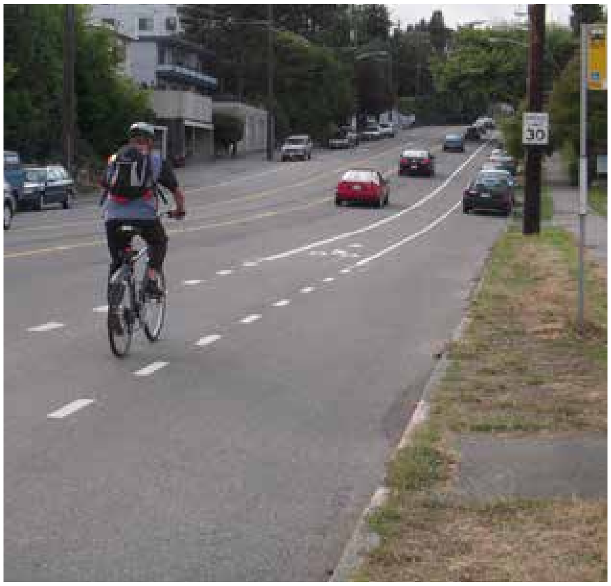
AASHTO Guide for the Development of Bicycle Facilities (2012)

NACTO Urban Street Design Guide (2013)

Manual on Uniform Traffic Control Devices (2009)

Road Diet

Road diets or roadway reconfigurations changes defined travel lanes typically with new pavement markings. While leaving the width of the roadway unchanged, a lane diet creates safer travel conditions by remarking three or four-lane roadways to a two-lane roadway, with bike lanes, defined parking and a center two-way left turn lane (TWLTL). Road diets are applied where average daily traffic is less than 25,000 vehicles.

Before and after images of Nickerson Street in Seattle, which was reduced from a four-lane street to two travel lanes, a turning lane, and a bike lane on each side.

Risk Factor and Behavior Addressed

Road diets address many risk factors in the ARC region including high-speed urban arterials and collectors that have no dedicated space for people on bikes. Road diets also increase the opportunities for pedestrians to cross streets safely.

Benefits

- Total crash rates are reduced by between 19% and 47%
- Improve pedestrian conditions by reducing crossing distances, adding medians and pedestrian crossing islands; bike lanes also provide a buffer between pedestrians and cars.
- Improve conditions for bicycles by creating space for bike lanes or buffered bike lanes.
- Improve conditions for motor traffic by reducing travel speeds and weaving, and by increasing the opportunity to turn without blocking moving traffic.
- Can be achieved with simple restriping and minimal construction (e.g. raised median, buffered bike lane)

Costs

Road diets vary in cost with the width and length of the roadway. Per mile, road diets vary between $25,000 and $40,000. Road diets incorporating curb extensions or median islands can increase costs to $100,000 per mile.

Examples in ARC region

- Ponce de Leon Avenue (US 23/GA 8), Atlanta, GA
- Church Street, Decatur, GA
- Decatur St. at Georgia State University, Atlanta, GA
- Wylie Street, Atlanta, GA
- Dogwood Drive, Hapeville, GA

REFERENCES

Evaluation of Lane Reduction "Road Diet" Measures on Crashes, FHWA-HRT-10-053.

FHWA Road Diet Informational Guide

AASHTO Guide for the Development of Bicycle Facilities (2012)

NACTO Urban Street Design Guide (2013)

Sidewalks

Sidewalks, or walkways, are spaces reserved for those travelling by foot or wheelchair including sidewalks, shared-use paths and roadway shoulders. Accessibility is a required element of good sidewalk planning and design.

Risk Factor and Behavior Addressed

The absence of sidewalks leaves people to walk in the roadway where they come into conflict with motor vehicles. This is particularly dangerous on high speed roadways. In the ARC region, many roads served by transit don't have sidewalks or crosswalks.

Benefits

Walkways provide safe places for people to walk and reduce crash rates by 65% - 89%. Paved shoulders reduce crash rates by 71%. Walkways and sidewalks greatly improve mobility options and safety for those in wheelchairs and other mobility-assist devices.

Costs

Sidewalks vary in cost depending on construction materials and width. Sidewalks average $2 per square foot, therefore a 5-foot side, 100-foot long sidewalk will cost approximately $1,000.

Examples in ARC region

- Buford Highway (US 23/GA 13), Atlanta, Brookhaven, Chamblee, & Doraville, GA
- 2nd Ave at Charles Drew Charter School, Atlanta, GA
- Fowler Street and 10th Street (GT Campus), Atlanta, GA

REFERENCES

Desktop Reference for Crash Reduction Factors, FHWA-SA-08-011, Table 11.

National Highway Traffic Safety Administration, Traffic Safety Facts - 2015 Data - Pedestrians. Report DOT HS 812 375, (Washington, DC: 2017).

AASHTO Guide for the Development of Bicycle Facilities (2012)

NACTO Urban Street Design Guide (2013)

Changing Speed Limits

Speed limits are typically posted based on observed motor vehicle speeds (usually the 85th percentile speed), which in turn is a function of roadway design. This frequently leads to speed limits (and actual speeds) that are higher than appropriate for the surrounding land use and mix of users. USLIMITS2 is a web-based design tool which helps evaluate and assign consistent speed limits along a roadway, considering several factors including traffic speeds, volumes, setting, crash data and roadway user types such as truck, pedestrian and bicycle.

Risk Factor and Behavior Addressed

Increasing motor vehicle speeds are associated with a greater frequency of crashes and more severe crashes. In the ARC region, roads with posted speeds of 35mph and higher have a significantly higher incidence of fatal and serious crashes, especially those involving people on foot and on bike.

Benefits

USLIMITS2 is a web-based tool designed to help practitioners set reasonable, safe and consistent speed limits for specific segments of roads (excluding school zones and constructions zones).

Costs

Use of the software is free. If speed limits are changed, there is a cost associated with replacing signs and enforcement of the new limits. Reducing speed limits may also be done in conjunction with other countermeasures such as neighborhood traffic calming.

Examples in ARC region

- City of Alpharetta, GA (35mph to 25 mph)
- Ball Mill Road (35mph to 25 mph), Sandy Springs, GA

Special Note

Automated speed enforcement is an essential element of changing speed limits and managing speed. Georgia state law currently (as of 2018) allows automated enforcement within school zones. This is an important tool for communities to increase the safety of children, families, and communities. Automated enforcement can also reduce over-policing when cameras are located based on data-driven analysis and equitably distributed.

REFERENCES

FHWA

Leading Pedestrian Intervals

A Leading Pedestrian Interval (LPI) is an adjustment to traffic signal timing which provides pedestrians the opportunity to begin crossing an intersection prior to motor vehicle traffic being given the green signal to proceed. LPIs typically provide pedestrians 3–7 seconds of crossing time to establish right-of-way in the intersection and become more visible to motorists.

Risk Factor and Behavior Addressed

Conflicts with turning traffic are among the most common contributing causes to crashes between motorists and people on foot and bike in the ARC region. Even when crossing with the light, pedestrians have to contend with left- and right-turning traffic that often fails to yield. By giving pedestrians a head start, LPIs improve the visibility of crossing pedestrians and increase the chances of motorists yielding to them.

LPIs improve safety for pedestrians who may be slower to proceed into the intersection such as senior citizens and those in wheelchairs.

LPIs improve safety at intersections where left-turning vehicles are allowed to turn after yielding to on-coming or pedestrian traffic.

Benefits

LPIs reduce pedestrian-vehicle crashes by 60%

Costs

LPIs have essentially no cost as they are programmed into existing or new signals.

Examples in ARC region

- City of Atlanta, GA
- Memorial Drive at East Lake Boulevard, Atlanta, GA

REFERENCES

FHWA's Handbook for Designing Roadways for the Aging Population

Manual on Uniform Traffic Control Devices (2009)

Rectangular Rapid Flashing Beacons (RRFB)

Rectangular rapid-flashing beacons (RRFB) are pedestrian-activated signals, installed in conjunction with a marked crosswalk, which alert motorists to yield to crossing pedestrians. They are typically used in locations where a full traffic signal may not be warranted. RRFBs use an irregular flashing sequence which attracts motorists' attention to pedestrians crossing and allow pedestrians to safely cross.

Risk Factor and Behavior Addressed

The ARC region has a lot of roadways where there are no marked or signalized crossings for pedestrians, even though there is a clear demand for people to get across the road. The absence of safe places to cross the road is a major risk factor for pedestrians in the region. RRFBs are particularly useful for establishing visible marked crosswalks on roads with posted speeds up to 35mph and where high vehicle volumes create challenging pedestrian crossing conditions.

RRFBs can be used in conjunction with pedestrian crossing islands and road diets as part of a package of measures to enable people to more safely navigate multi-lane roadways with high crash risks.

Benefits

RRFBs increase motorist yield rates by up to 80%*

Costs

RRFBs cost an average of $22,000 per crossing location.

Examples in ARC region

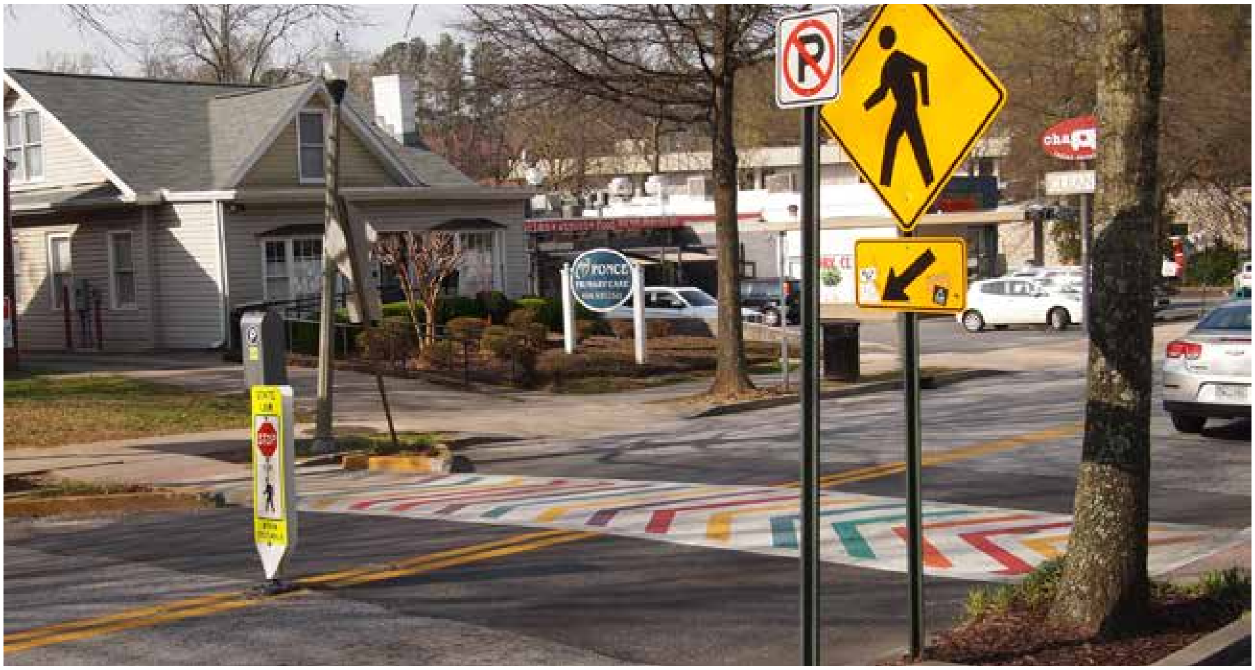
- 10th Street at Midtown MARTA station, Atlanta, GA
- Dekalb Avenue at King Memorial MARTA station, Atlanta, GA
- College Avenue (GA 10) at Agnes Scott College, Decatur, GA

REFERENCES

NACTO Urban Street Design Guide (2013)
Manual on Uniform Traffic Control Devices (2009)
CDOT Roadway Design Guide, Chapter 14 (2015)
Safety Effects of Marked Versus Unmarked Crosswalks at Uncontrolled Locations (2005)
** Efficacy of Rectangular-shaped Rapid Flash LED Beacons*

Crosswalk Visibility Enhancements

Crosswalk visibility enhancements include a variety of treatments which make pedestrian crossings more obvious to approaching motorists, including advanced warning signs and markings, overhead lighting and curb extensions. Enhancements may also include parking restrictions on crosswalk approaches, in-street stop or yield signs and ladder and continental striped crosswalks.



Risk Factor and Behavior Addressed

Motorist failure to stop and/or yield to pedestrians in a crosswalk is both a significant contributing cause of fatal and serious crashes in the ARC region as well as behavior that degrades the pedestrian experience on area roads. More prominent crosswalks, especially in combination with speed management, encourage yielding behavior. In addition, higher quality and more visible crosswalks encourage pedestrians to use these crossing locations rather than mid-block or away from a crosswalk.

Benefits

Crosswalk visibility enhancements can reduce crashes by 23%–48%

Costs

Crosswalk visibility enhancements vary in cost depending on the treatment applied. Average costs include:

- High-visibility crosswalks (pavement markings): $2,500 per crossing
- Curb extensions: $15,000 per each corner
- High visibility and advanced warning signs: $300 per sign
- In-street stop or yield signs: $250 each

Examples in ARC region

- Ponce de Leon Avenue, Decatur GA
- Edgewood Avenue at Park Place, Atlanta, GA
- Boulevard (Grant Park area), Atlanta, GA
- Mitchell Street, Atlanta, GA

REFERENCES

NACTO Urban Street Design Guide (2013)

ADA Accessibility Guidelines (2004)

Manual on Uniform Traffic Control Devices (2009)

Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way (PROWAG) (2011)

Safety Effects of Marked Versus Unmarked Crosswalks at Uncontrolled Locations: Final Report and Recommended Guidelines (2005)

Bushell, M., Poole, B., Zegeer, C., & Rodriguez, D. (2013). Costs for Pedestrian and Bicyclist Infrastructure Improvements: A Resource for Researchers, Engineers, Planners, and the General Public. Pedestrian and Bicycle Information Center.

Street Lighting

Street lighting improves safety for all roadway users by illuminating otherwise dark locations on both roadway and sidewalk areas, depending on the type of lighting provided. Street level lighting is situated over 20-feet high and illuminates the roadway, primarily for the benefit of motorists. Pedestrian scale lighting is typically 10 to 18-feet high along sidewalks or shared-use paths.

Risk Factor and Behavior Addressed

There is a dramatic increase in the frequency and severity of crashes involving pedestrians in low light conditions where there is no or little street lighting.

Benefits

Street lighting increases the visibility of all roadway users and illuminates the path of travel, which is especially important for pedestrian and bicycle travel in the hours of darkness when surface defects, signs and markings can become invisible.

Lighting can be used to highlight areas of particular concern, such as crosswalks and intersections where pedestrians are likely to be present.

Costs

The cost of street lighting varies depending on the area covered.

- Crosswalk: $11,000 - $42,000
- Block: $600,000 for 1/3 mile of pedestrian level lighting
- Operating costs should be considered which average $700 annually per intersection

Examples in ARC region

- The Beltline (ped-scale lighting), Atlanta, GA
- Edgewood Avenue between Cornelia and Krog Street, Atlanta, GA

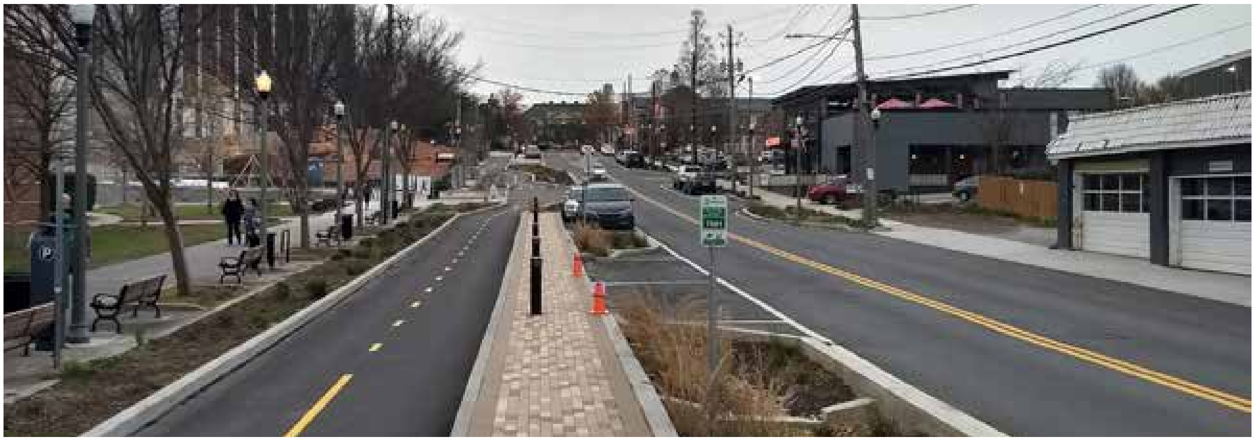
REFERENCES

APBP Lighting Webinar

Vision Zero Network Webinar

Separated Bike Lanes

Separated bike lanes, also known as protected bike lanes or cycle tracks, are exclusive bikeway facility that are physically separated from motor vehicle traffic and sidewalks. The added separation protects bicyclists from motor vehicle traffic creating a safer space for bicyclists of all ages and abilities. Separation varies in the form of flexible delineator posts, on-street parking or raised buffers and medians.



Risk Factor and Behavior Addressed

The largest number of bicycle and motor vehicle crashes in the ARC region occur with both the bicyclist and motorist going straight ahead. This suggests that both bicyclists and motorists will benefit from more physical separation, especially on busier roadways.

Riding the wrong way (i.e. against traffic) on the sidewalk remains a major contributing cause of bicyclist crashes nationwide, as well as in the ARC region. Bicyclists choose to ride on the sidewalk because busy, high speed roads with no bicycling infrastructure are not comfortable and do not feel safe.

Benefits

- Separated bike lanes reduce crash rates by 90%*
- Separated bike lanes increase bicycle traffic by creating conditions that attract bicyclists of all ages and abilities.
- Pedestrian safety is also improved by separating bicycle traffic from pedestrian space and providing additional separation from motor vehicle traffic.
- Bicyclists are much less likely to ride on the sidewalk when facilities are provided on the roadway.

Costs

Separated bike lanes cost varies depending on the separation used and if they are created in conjunction with other projects. General cost per one-way mile for separated bike lane elements include:

- Pavement markings - $50,000
- Buffers
  - Striped with pavement markings: $15,000
  - Flexible delineator posts: $22,000
  - Parking stops: $30,000
  - Parked vehicles: $12,000 (pavement markings and signs)
  - Planters: $120,000
  - Precast curb: $500,000
  - Cast in place curb: $45,000

Examples in ARC region

- North McDonough Street, Decatur, GA
- Tech Parkway, Atlanta, GA
- Peachtree Center Avenue, Atlanta, GA
- John Portman Blvd, Atlanta, GA
- Park Place, Atlanta, GA (one-way)

REFERENCES

AASHTO Guide for the Development of Bicycle Facilities (2012)

NACTO Urban Bikeway Design Guide (2014)

MassDOT Separated Bike Lane Planning and Design Guide (2015)

FHWA Separated Bike Lane Planning and Design Guide (2015)

People for Bikes, "Protected Bike Lanes Do Not Need to Cost $1 million per mile" Michael Anderson, May 16, 2017

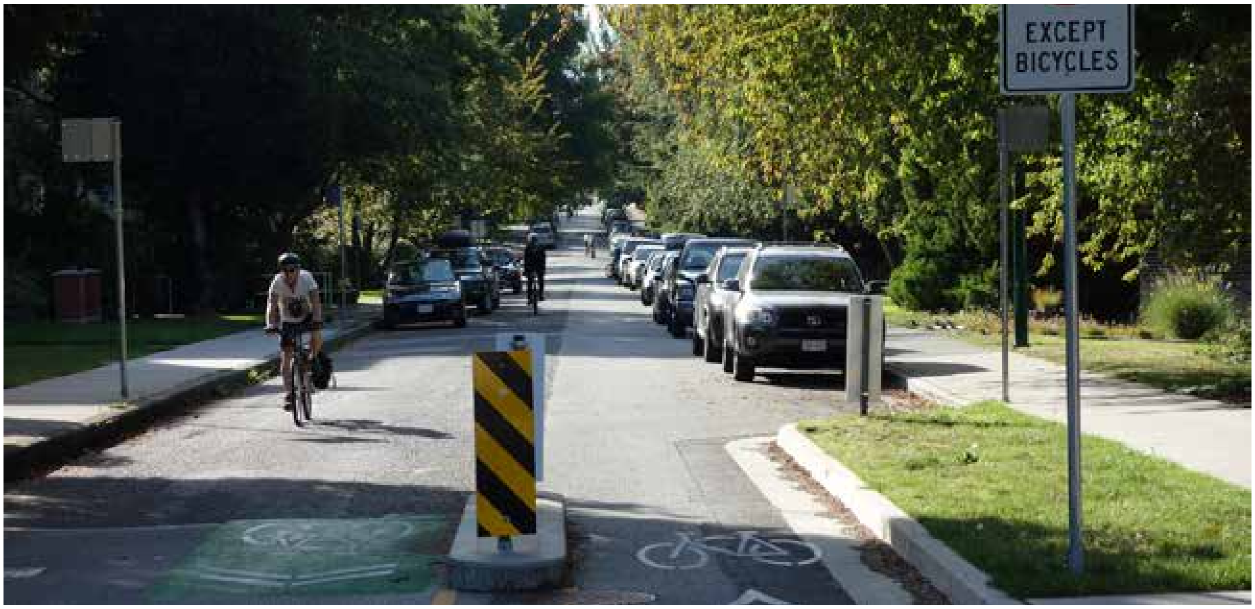
"Safety impacts of bicycle infrastructure: A critical review." DiGioia, Jonathan, Kari Edison Watkins, et al. Journal of Safety Research, 61 (2017) 105–119.

Neighborhood Greenways/Bicycle Boulevards

Neighborhood greenways, also known as bicycle boulevards, are low volume, low speed roadways that incorporate traffic calming treatments to discourage through motor vehicle traffic and encourage bicycle traffic. They often run parallel to busy major roadways or travel corridors.

Typically identified as residential roadways, neighborhood greenways employ a variety of traffic calming including traffic diverters, speed humps and chicanes to limit motor vehicle traffic access and speed. Neighborhood greenway improvements should be applied to roadways with less than 3,000 vehicles per day and target motor vehicle speeds of 20 mph or less.

High-quality crossings of major roads or barriers are key to the success of neighborhood greenways.



Risk Factor and Behavior Addressed

Neighborhood greenways attract bicyclists away from busy, high-speed and high-volume parallel roads where much greater risk factors are present.

Neighborhood greenways also improve conditions for bicyclists and area residents by applying measures which reduce motor vehicle traffic speeds and discourage cut-through traffic.

Benefits

Neighborhood greenways benefit bicyclists by reducing the amount and speed of motor vehicle traffic along the corridor.

Property values generally increase along neighborhood greenways due to the improve conditions.

Costs

Costs of neighborhood greenways vary depending on the traffic calming elements applied. Average costs of traffic calming features include

- Speed humps: $4,000
- Speed humps (bicycle-friendly): $5,000
- Speed tables: $12,000
- Traffic diverters: $20,000
- Shared-lane markings: $300 each or $11,000 per mile or two-way roadway

Neighborhood greenway intersections with major roadways may require pedestrian hybrid beacons (PHB) or rectangular rapid flashing beacons (RRFB)

REFERENCES

AASHTO Guide for the Development of Bicycle Facilities (2012)

NACTO Urban Bikeway Design Guide (2012)

Manual on Uniform Traffic Control Devices (2009)

Fundamentals of Bicycle Boulevard Planning & Design (2009)

"Safety impacts of bicycle infrastructure: A critical review." DiGioia, Jonathan, Kari Edison Watkins, et al. Journal of Safety Research, 61 (2017) 105–119.

Traffic Calming

Traffic calming includes a variety of horizontal and vertical street treatments that reduce the speed and volume of motor vehicle traffic. Traffic calming is typically applied to residential, collector and minor arterial streets. Safety is improved because of slower speeds which improves driver awareness, and shortens stopping distances. Traffic calming treatments include speed humps, speed tables, chicanes, raised crosswalks and raised intersections.

Risk Factor and Behavior Addressed

Speeding and failure to yield, even on relatively minor roads, continue to increase the frequency and severity of crashes involving pedestrians and bicyclists in the ARC region.

Benefits

Traffic calming improves safety and comfort for all roadway users by reducing crash rates, injuries and fatalities. Area-wide implementation of traffic calming measures helps to avoid shifting problems from one location to a nearby or neighboring street.

Pedestrians have a 13% likelihood of fatality or severe injury in collisions with vehicles travelling 20 mph or less but 75% likelihood in collisions with vehicles travelling 40 mph.

Costs

Costs of traffic calming elements applied may vary. Average costs of traffic calming features include

- Speed humps: $4,000
- Speed humps (bicycle-friendly): $5,000
- Speed tables: $12,000
- Traffic diverters: $20,000
- Raised crosswalks: $12,000
- Raised intersections: $25,000–$70,000 depending on size of intersections
- Chicanes: $10,000
- Curb Extensions: $13,000

Examples in ARC region

- Bulb outs: Ponce de Leon Avenue, Decatur, GA
- Curb Extensions: McLendon Avenue, Atlanta, GA
- Speed humps: Second Ave, Decatur, GA
- Speed humps: Sisson Ave, Atlanta, GA
- Traffic circle: Park Plaza, Alpharetta, GA
- Speed table: Beltline (Old Fourth Ward), Atlanta, GA
- Speed tables: E. Lake Boulevard, Atlanta, GA
- Two-lane slow point: N. Park Drive, Tucker, GA
- Traffic circle: Ashford Crossing, Dunwoody, GA
- Roundabout: Grady Avenue and Beauregard Boulevard, Fayetteville, GA
- Curb extensions: Sycamore Street, Decatur, GA
- Speed tables: Cherokee Avenue at Milledge Avenue, Atlanta, GA

REFERENCES

FHWA The Effects of Traffic Calming Measures on Pedestrian and Motorist Behavior (2001)

ITE Traffic Calming Web site

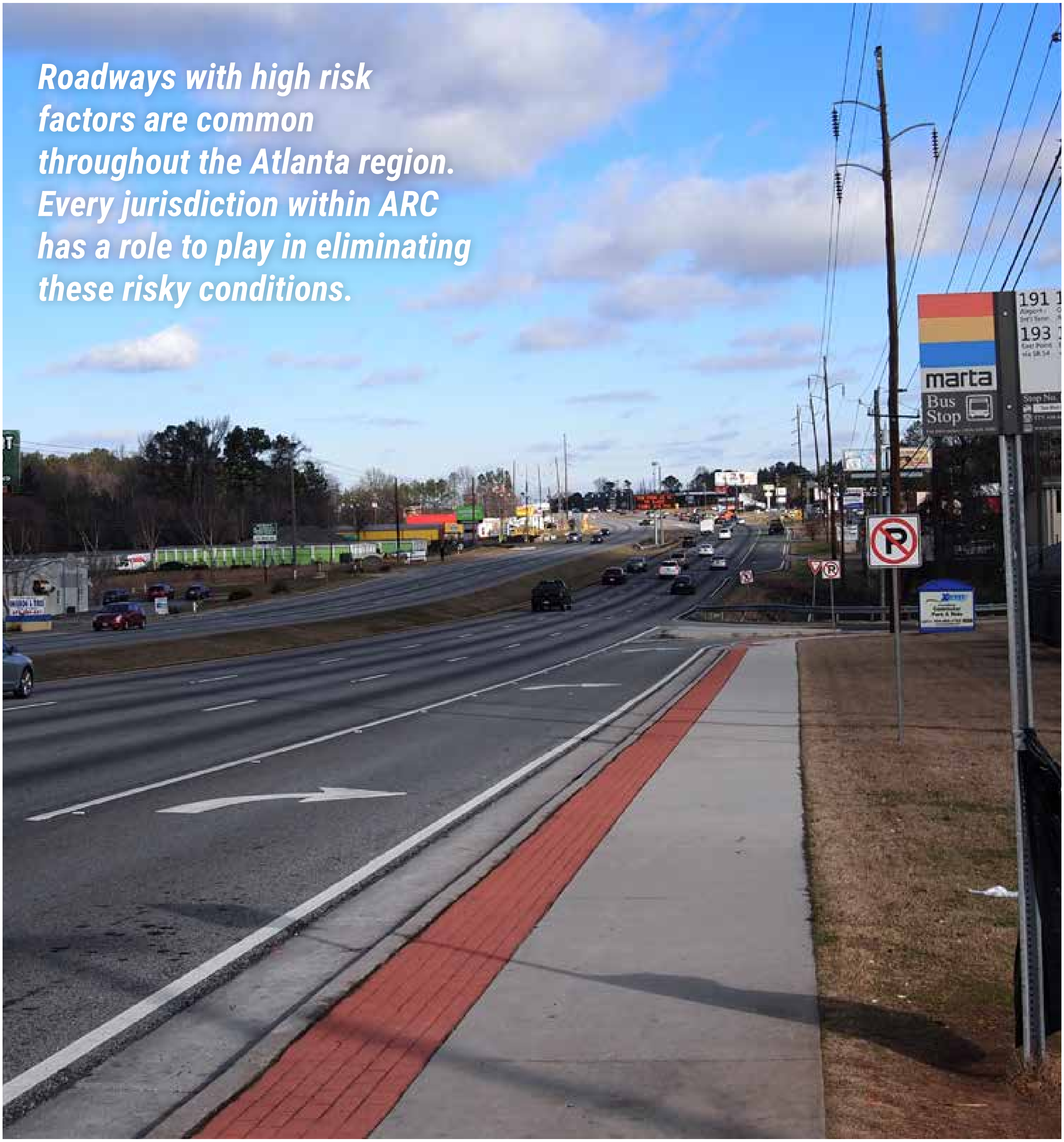
NACTO Urban Street Design Guide (2013)

Traffic Calming Device Implementation Guidebook, City of Atlanta

Tefft, Brian C. Impact speed and a pedestrian's risk of severe injury or death. Accident Analysis & Prevention. 50. 2013.

STRATEGIES FOR ACTION

Roadways with high risk factors are common throughout the Atlanta region. Every jurisdiction within ARC has a role to play in eliminating these risky conditions.



5. Short Term: Focus Regional Funding on Safety

The Atlanta Regional Commission programs millions of dollars of transportation funds each year through the Transportation Improvement Program (TIP) process. These dollars represent a significant percentage of overall transportation spending in the region and play a catalytic role in local project development and funding decisions.

In the context of traffic safety, ARC can use its process to:

- Direct more funding to high-risk corridors and communities.
- Ensure that all funding supports safer designs by incorporating proven safety countermeasures.
- Promote better local project development, design, and implementation.

Embed Safety in Project Selection

ARC's **Project Evaluation Framework** is used to develop the TIP based on a three-step Key Decision Point (KDP) process that supports the agency's commitment to performance-based planning and decision-making. Eliminating fatal and serious injury crashes on the region's roads should become an integral part of every project in the TIP.

Regional Policy Filters (KDP 1): ensure safety is a clear regional policy goal and supported by all projects in the TIP. All roadway projects submitted for funding should emphasize "safety countermeasures that contribute to reducing fatal and serious injury traffic crashes".

Project Scoring Criteria (KDP 2): ensure relevant project types incorporate countermeasures and advance safety:

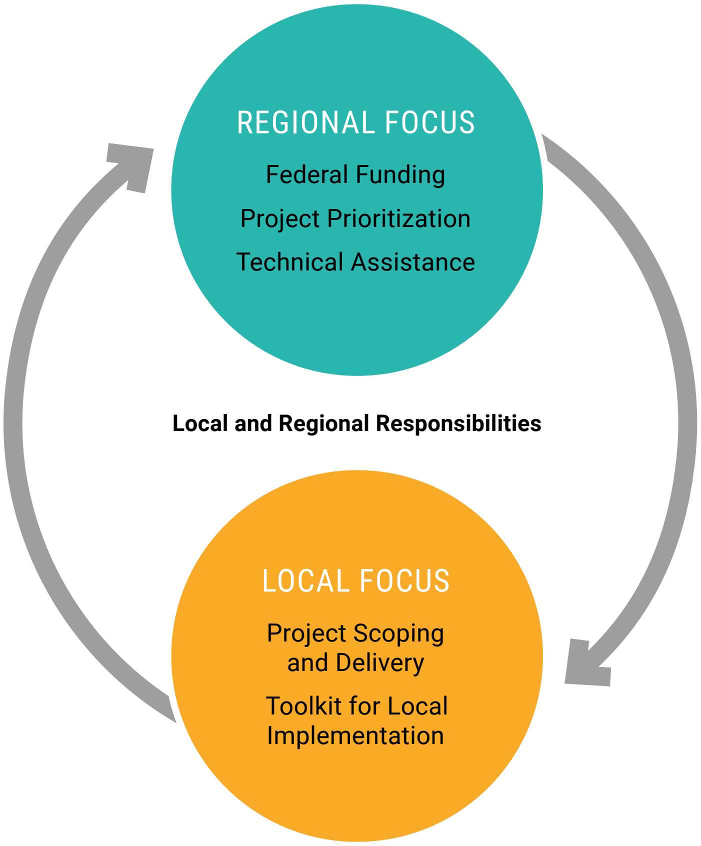
<u>Active Transportation Projects</u>: Bikeway and walkway projects can address specific safety issues and support increased travel. Funding priorities should balance:

- Safety needs along higher-risk roads
- Segments that fill existing network gaps
- Accessing high-demand locations or transit
- Supporting walkable centers and safer land patterns

<u>Roadway Expansion Projects</u>: Roadway projects form the foundation of the region's transportation network. Roadway capacity projects can mitigate safety risks through complete street elements as well as provide new opportunities to walk or bike or address a current network gaps:

- Safety risks for all modes should be assessed for all roadway expansion projects. Countermeasures for roadway expansion projects should include bicycling and pedestrian treatments.

Policy Focus


REGIONAL FOCUS
Federal Funding
Project Prioritization
Technical Assistance
Local and Regional Responsibilities
LOCAL FOCUS
Project Scoping and Delivery
Toolkit for Local Implementation

- Negative points should be awarded for projects that increase risks for people on foot and on bicycle (for example projects that add lanes and increase motor vehicle speeds without any appropriate countermeasures).

<u>Other project types</u>: Maintenance, transit, etc should incorporate similar criteria to advance safer outcomes.

Project safety assessment: All projects should be assessed for their current safety risk, especially for people walking and bicycling, and any related safety measures proposed:

- Does the project incorporate proven safety measures? Do those measures address current or anticipated risks? Do measures effectively reduce crashes (i.e. CMFs)?
- Does the project prevent fatalities or serious injuries for all roadway users?
- Does the project specifically reduce risk for people walking, bicycling, or riding transit?

Criteria Weighting: The project safety scores are weighted to reflect the relative importance of safety versus other policy criteria (e.g. network connectivity, social equity, and mobility

Speed Versus Safety

In a landmark 2017 report, the National Transportation Safety Board (NTSB) identified speeding as one of the most common factors in motor vehicle crashes in the United States and concluded that "the current level of emphasis on speeding as a national traffic safety issue is lower than warranted."

The findings of the study confirm that speed increases both the likelihood of serious and fatal crash involvement as well as increasing the severity of a crash. More than 31% of crashes in the United States identify speed as a factor, a number that is underestimated in the view of the NTSB.

The report singles out automated speed enforcement as an effective but hugely underutilized countermeasure to reduce speeding-related crashes, fatalities and injuries, noting that many states have laws that prohibit or restrict the use automated speed enforcement. After reviewing current techniques for setting and enforcing speed limits (including the 85th percentile rule), the NTSB concludes that "the Safe System approach to setting speed limits in urban areas is an improvement over conventional approaches because it considers the vulnerability of all road users".

The NTSB is concerned that the current level of emphasis on speeding as a national traffic safety issue is lower than warranted, and that is certainly evident in the Atlanta region. One potential reason for this is that speed is often equated with free-flowing traffic and a lack of congestion—there is a perceived conflict between safety and speed. As a result, speed reduction measures are rejected for fear of causing congestion and delay. Not only does this ignore research that slower speeds can improve traffic flow and efficiency (e.g. with dynamic or variable speed control systems) but frequently pits the temporary convenience of motorists against the safety and accessibility needs of neighborhoods, especially those more reliant on walking, bicycling, and transit.

ARC's own policies reflect this unresolved tension. On the one hand, regional transportation priorities and local community concerns are dominated by discussion of congestion relief and the cost of congestion; on the other hand, the agency expressly notes in the regional transportation plan that "ensuring people arrive at their destination safely must be given as much consideration as reducing congestion and motorist travel times…".

& congestion). This weight can be adjusted to increase the prominence of safety as factor for prioritization, especially for project types that have disproportionate, negative impacts on pedestrian and bicycling safety. Weights should be balanced between advancing safer outcomes and supporting increased mobility in high-demand areas.

Other Criteria:

- Multimodalism: Assess complete streets elements included to accommodate other modes than the primary project purpose. Complete street elements support safety but where projects detract from safety they should be assessed and scored accordingly.
- Social equity: Assess the impact of projects on ensuring a fair and equitable transportation system. Specifically account for safety outcomes to ensuring safe and dignified access to regional transportation.
- Project deliverability: Criteria to ensure projects are feasible and can be built on time and budget. Anticipate how safety features may affect implementation (for example by requiring a variance or exception) and ensure they are not excluded later in the life of the project.
- Livable Centers Initiative (LCI): LCI communities are key areas to support safety and travel via complete streets, walkability, access to transit, economic outcomes (ladders of opportunity), and social equity. This section can be updated with additional safety countermeasures.

Regional Factors (KDP 3): account for less tangible and more subjective project selection factors such as regional balance, cost-effectiveness, and deliverability that may come into play once an objectively prioritized list of projects has been developed. ARC staff and stakeholders should consider how the project list will contribute to achieving the goals of the State's Strategic Highway Safety Plan. Projects can also be re-distributed to ensure that funding is fairly allocated to vulnerable or underserved communities.

Support Safety in Project Development

ARC processes and TIP funding prioritization should continue to address common pitfalls in how transportation funds are used to advance safety:

Design: Incorporate detailed project design into prioritization assessments (i.e. require concept reports prior to funding) in order to determine specific countermeasure placement and their relationship to documented safety risks.

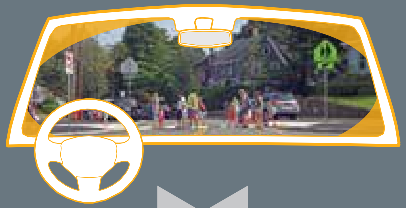
Tracking: Continue to track and champion projects throughout planning, design, outreach, and construction to ensure safety elements are maintained throughout project implementation.

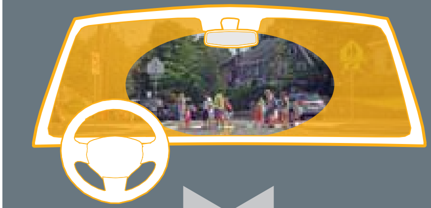
Evaluation: Record crash risk scores and proposed countermeasures for funded projects to help ARC assess the long-term effect of the region's TIP towards achieving federal and state performance targets (see page 57).

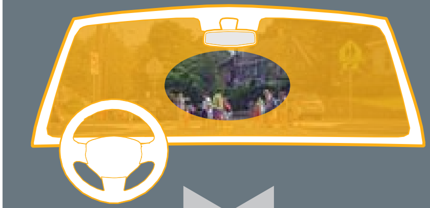
Vehicle and Pedestrian Collision Speed and Survival Percentage

When a vehicle is traveling at...

this is the driver's field of vision.







It takes...

45' TO STOP

85' TO STOP

145' TO STOP

and pedestrians hit at this speed have a...

13% Likelihood of fatality or severe injury

40% Likelihood of fatality or severe injury

73% Likelihood of fatality or severe injury

6. Medium-term: Support Better Projects

People walk, ride bikes and take transit across the metropolitan area and regional traffic patterns are heavily influenced by local trips and available travel options on local streets. As a result, regional coordination and leadership is required, in addition to funding, to build a safer regional transportation system.

The ARC and each of its member jurisdictions and partner agencies has a mandate and a responsibility to build a safer transportation system for all.

- The U.S. Department of Transportation states that "every transportation agency…has the responsibility to improve conditions and opportunities for walking and bicycling".
- Federal mandates require metropolitan transportation planning agencies to "provide for consideration of projects and strategies that will…increase the safety of the transportation system for motorized and nonmotorized users".
- The ARC board directs staff to "conduct investigations into the causes and location of fatalities and injuries within the Atlanta region and recommend an appropriate course of action for the agency to follow in improving safety outcomes on our transportation system for all users…"

As a result, ARC is committed to helping local agencies develop and implement better transportation projects that increase safety for all users.

In addition to promoting the use of proven countermeasures as part of the TIP process (see previous section), ARC will:

1. **Support** local agencies that take advantage of tools, policies, and programs to systematically eliminate known risks for pedestrians and bicyclists on area roadways.
2. **Assist** member jurisdictions by providing technical information and funding to help develop community, transportation, and corridor plans with strong safety elements. Fund studies and safety audits along high-risk corridors. Provide risk assessment data (pg 32-33) to help prioritize corridors with the highest risk for serious or fatal pedestrian and bicycle crashes in the future.
3. **Engage** communities around transportation safety and provide opportunities for public discussions of safety issues. Share techniques or case studies for how local agencies can use outreach and engagement strategies to understand issues beyond the crash data.
4. **Present** trainings and provide guidance on using proven countermeasures to eliminate roadway risks. Help agencies and consultants develop expertise to identify appropriate solutions to eliminate risk as part of larger projects or as stand-alone projects and programs.
5. **Provide** model policies for effective Vision Zero and Complete Streets implementation and action plans for local jurisdictions to use as templates.
6. **Identify** funding sources and strategies for safety projects at the federal, state, and local level. Enable agencies to implement projects faster and more efficiently.

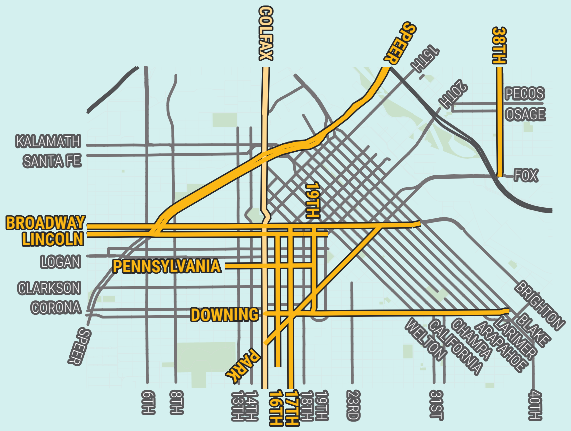
In this way, ARC will begin to fulfill the promise of ***Walk. Bike. Thrive!*** in "leading the region on moving towards Vision Zero policies for all roadways and encourage incorporation of safety elements into both roadway design and marketing efforts."

WHAT IS A HIGH INJURY NETWORK?

Several US cities have analyzed their crash data to determine whether there are particular roadways and corridors where fatal and serious injury crashes are concentrated. The City of Atlanta, for example, discovered that 72% of fatal and 42% of injury crashes occur on just 6% of the city's roadways. This helps to prioritize corridor improvements as well as highlight the types of roadways and roadway design elements that are contributing to serious traffic safety problems. The Vision Zero Network recommends creating a HIN as "this approach is helping city staff focus limited resources on the most problematic areas, while also building greater public and political buy-in for changes."

https://visionzeronetwork.org/hin-for-the-win/

http://transportationplan.atlantaga.gov/docs/ATP_Final_Report.pdf



Example of a High Injury Network in Denver, CO.

7. Long-term: Champion Complete Streets Implementation

Much of the Atlanta region has been planned and built around the automobile. In common with most metropolitan areas in the United States, land use planning and growth in the second half of the 20th Century was focused almost exclusively on a dispersed, suburban development pattern. This was predicated upon a transportation system almost exclusively designed for motor vehicles that could travel long distances at relatively high speed.

More recently, the well-documented downsides of this over-reliance on the car (e.g. pollution, obesity, physical inactivity, sprawl, and huge road safety issues) have inspired change. People are moving back into more urban and city-center locations; transit options have improved; projects such as the Beltline have transformed neighborhoods; and the Livable Centers Initiative has enabled more sustainable growth in the region.

In many communities around the United States, similar changes are being complemented by a "Complete Streets" approach to roadway design and operation. This has emerged as an effective, long-term strategy to systematically and proactively address existing roadway designs that have increased risk for pedestrians, bicyclists and motorists.

Basic Principles

For the Atlanta region, the basic principles of a Complete Streets approach mean that over time, all streets should be planned, designed and operated to provide a basic level of safe access for people using all elements of the transportation system, regardless of whether they are walking, taking transit, driving or riding a bike.

This doesn't mean that every street looks the same. Each roadway is unique and should be designed in response to its community context – that includes adjacent land uses, the function of the street within the overall transportation system (e.g. local road versus major arterial), and the role of the corridor in creating connected networks and routes for the different modes. A critical transit corridor will look and feel different from a rural road; the presence of a major bike route will heavily influence the design and operation of a roadway. The Florida Department of Transportation's recent Context Classifications for Complete Streets is a useful illustration of this point (Figure 16).

A complete streets approach provides the flexibility to enable roadway designs to achieve policy priorities and goals. In the more urbanized areas of the region, ARC seeks to encourage short trips, active transportation, and transit

WHAT ARE COMPLETE STREETS?

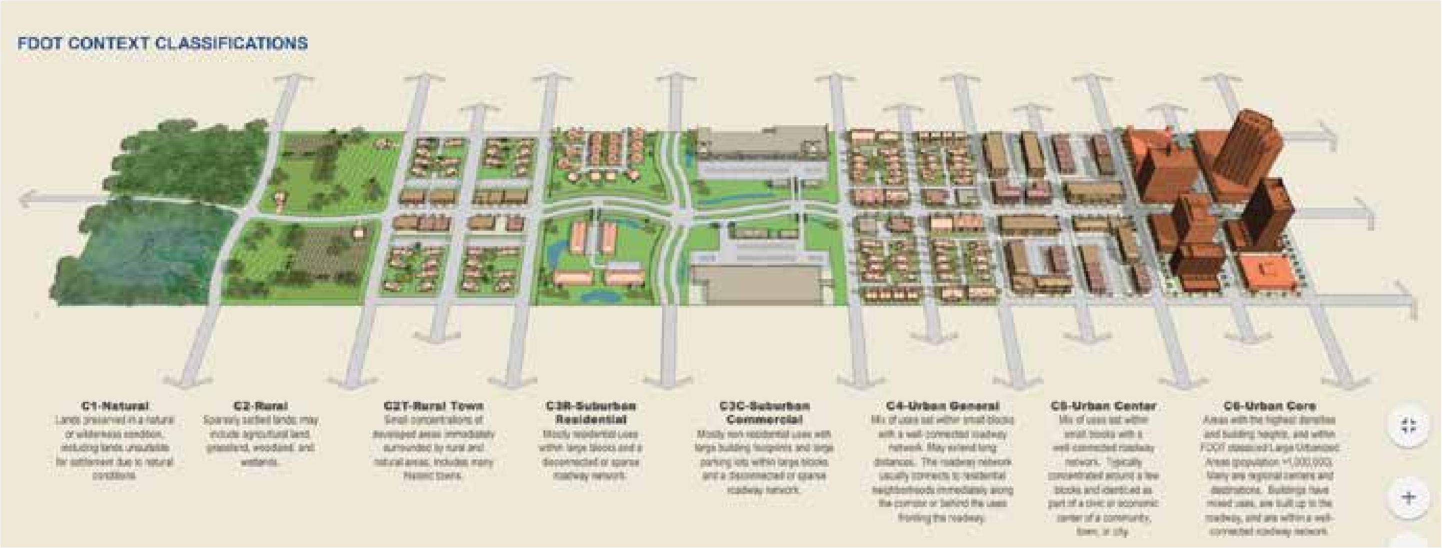
"**Complete Streets are streets for everyone**. They are designed and operated to enable safe access for all users, including pedestrians, bicyclists, motorists and transit riders of all ages and abilities. Complete Streets make it easy to cross the street, walk to shops, and bicycle to work. They allow buses to run on time and make it safe for people to walk to and from train stations.

Creating Complete Streets means transportation agencies must change their approach to community roads. By adopting a Complete Streets policy, communities direct their transportation planners and engineers to **routinely design and operate the entire right of way to enable safe access for all users**, regardless of age, ability, or mode of transportation. This means that every transportation project will make the street network better and safer for drivers, transit users, pedestrians, and bicyclists—making your town a better place to live."

Source: National Complete Streets Coalition

Before and after, Complete Street example in downtown Denison, Texas.

Figure 15. Florida DOT's Context Classifications for Complete Streets.


FDOT CONTEXT CLASSIFICATIONS
C1-Natural
Lands preserved in a natural or wilderness condition, including lands unsuitable for settlement due to natural conditions.
C2-Rural
Sparsely settled lands; may include agricultural land, grassland, woodland, and wetlands.
C2T-Rural Town
Small concentrations of developed areas immediately surrounded by rural and natural areas; includes many historic towns.
C3R-Suburban Residential
Mostly residential uses within large blocks and a disconnected or sparse roadway network.
C3C-Suburban Commercial
Mostly non-residential uses with large building footprints and large parking lots within large blocks and a disconnected or sparse roadway network.
C4-Urban General
Mix of uses set within small blocks with a well-connected roadway network. May extend long distances. The roadway network usually connects to residential neighborhoods immediately along the corridor or behind the uses fronting the roadway.
C5-Urban Center
Mix of uses set within small blocks with a well-connected roadway network. Typically concentrated around a few blocks and identified as part of a civic or economic center of a community, town, or city.
C6-Urban Core
Areas with the highest densities and building heights, and within FDOT classified Large Urbanized Areas (population >1,000,000). Many are regional centers and destinations. Buildings have mixed uses, are built up to the roadway, and are within a well-connected roadway network.

use; complete streets designs can emphasize walking, biking and transit access in those areas. Safety is a regional goal that is heavily influenced by roadway design and a complete streets approach ensures a range of appropriate proven safety countermeasures is available regardless of whether a road is urban, suburban or rural.

ARC's Role in Implementing Complete Streets

Each year, hundreds of roadway projects in the 20-county region rebuild existing roads or build new ones. New urban and suburban development continues in one of the fastest-growing regions in the country. Every one of these projects is an opportunity to implement proven safety countermeasures or change communities to those that support complete streets and eliminate fatal and serious injury crashes among all road users.

ARC does not implement projects directly; that is the role of transportation agencies, cities, counties, and other local partners. As metro Atlanta's joint MPO and Regional Commission, ARC funds transportation projects and provides technical assistance to develop local plans. In these capacities, ARC can establish balanced regional priorities and processes that support complete streets (see page 48).

ARC also promotes complete streets, livable communities, and transit. The LCI program supports coordinated land use and transportation planning to build compact centers and complete streets. ARC and partner agencies plan for a connected, convenient regional public transit network that reduces the need for driving trips and supports walking or bicycling. These regional efforts help create walkable and bikeable communities, avoid driving trips, shift trips to safer modes, and improve streets and cities to support safer outcomes.

Based on the findings in ***Safe Streets*** and current regional priorities, ARC supports Complete Streets implementation to build a safer metropolitan Atlanta and will:

1. Champion complete streets principles and actively support regional, state, and local complete streets implementation.
2. Promote safer street designs on arterials and thoroughfares where risks are particularly high and regional priorities of safety, speed, and regional movement converge.
3. Advance context-sensitive strategies that slow speeds or separate modes.
4. Support the regional transit system with complete streets that are walkable and bikeable as safe and convenient connections.
5. Encourage compact urban designs and communities that are walkable, bikeable, and transit-accessible, encourage shorter trips, and are safer for all modes.

A Spectrum of Complete Streets Project Implementation

The individual elements of a "complete street" vary based on context and range from the straightforward (marking a crosswalk) to the complex (changing adjacent land uses). There is no sequence in which these design elements and changes should occur and the transformation of a corridor into a Complete Street does not have to happen in one fell swoop. Some design elements, such as those related to universal design and accessibility, might be implemented as a stand-alone program across numerous locations; other techniques such as road diets require a more comprehensive, site-specific project.

Basic sidewalk infrastructure on major road

Delivering Basic Safety and Dignity

There are hundreds of miles of high-speed, high-volume suburban roads in the Atlanta region that may never be considered attractive destinations for a pleasant stroll. Nonetheless, they should provide an environment where people [who may have no choice] can walk or ride with dignity and safety, i.e. not in the gutter or on goat paths worn into the grass.

- **Accessible Streets:** the installation of curb ramps and detectable warnings at every location where sidewalks transition to the roadway is a straightforward and immediate need; it is also the foundation of a complete street.
- **Filling Gaps:** missing sidewalks, crosswalks and short-cut connections should be identified and filled, especially in proximity to transit service and activity generators (such as shopping centers, medical and social service facilities, recreation areas, apartment complexes, and major employment centers).
- **Safe Transit Stations and Stops:** every train station and bus stop should be accessible, safe and convenient for people on foot and bike. Stations and stops in mid-block locations or away from the traffic controlled environment of a signalized intersection should have safe, marked and controlled crosswalks, medians and lighting.

Separated bike lane installed on busy arterial road

Connecting People and Communities

Connectivity and convenience go hand in hand with creating a safe and accessible transportation system that gets people where they want to go. Pedestrians benefit from a minimum grid of safe streets and crosswalks; bicycling increases dramatically with access to a low-stress network of trails, local streets, and busier roads with protected bicycling infrastructure.

- **Controlled crossings:** as vehicle speeds and volumes increase, people need more frequent safe places to cross the road, sometimes in midblock locations. Signalized crosswalks, leading pedestrian intervals, protected turns, and HAWK signals are all available to create a minimum grid of safe, accessible streets.
- **Neighborhood Greenways:** there are a lot of local roads that are suitable for bicycling but they aren't connected and there are no safe crossings of the busier roads that separate them. Neighborhood greenways make these connections and focus on creating safe crossings; they can also provide better connectivity for pedestrians without limiting motor vehicle access.
- **Separated bike infrastructure:** most of the population doesn't feel safe riding on busy roads without physical separation from motor vehicle traffic. Protected or separated bike lanes, together with careful intersection design, can create a safer, more attractive bicycling environment. Regional trails offer a similar comfortable biking experience.

Neighborhood traffic calming

Infill development served by a regional trail

Transformational Projects

Many of the risk factors for pedestrian and bicyclist crashes—as well as motor vehicle collisions—exist because roads haven't been designed with the needs of people on foot, bike or transit in mind. More complex and transformational projects can correct this by introducing area-wide traffic calming solutions, high capacity transit corridors, and by reducing the number of lanes and lane widths to better manage traffic flow for all users.

- **Right-sizing roads:** opportunities exist across the metro Atlanta region to transform streets and neighborhoods by reconfiguring roads where lane capacity is underutilized due to relatively low vehicle volumes. Sometimes called road diets, these projects add separation and safe crossings for pedestrians, and create safer turning maneuvers and improved flow for motorists.
- **Priority Transit Corridors:** dedicated bus lanes, priority turns, and even Bus Rapid Transit projects can increase the overall capacity of a roadway and better serve adjacent neighborhoods, making more effective use of the existing right of way. In the long term, transit can be used as a tool to support community planning and building more walkable, safer communities.
- **Area-wide traffic calming:** thousands of miles of low volume roads and neighborhood streets exist throughout the ARC region that could be much safer places to walk, bike and drive if motor vehicle speeds were kept to 20-30 mph or lower. Area-wide traffic calming programs can affect change over entire neighborhoods, not just one street or location.

Achieving Long Term Change

Ultimately, complete streets are just one part of a larger, long term shift in development patterns and attitudes towards a more sustainable, safe, people- and community-centered region. During the course of the next 20 years, the Atlanta region will undergo significant change and rebuilding as the population grows and dramatic shifts in demographics, the retail environment, housing patterns and technology take hold. Choices and policy decisions we make today are essential to ensuring these changes result in a safe, sustainable and people-centered region.

- **Changing land use patterns:** the Livable Centers Initiative has set the precedent for focusing development in ways that encourage active transportation, transit and safe, connected communities rather than continuing to allow sprawling, unsustainable development that is narrowly-focused on single-occupancy car travel.
- **Embracing technology:** the exciting opportunities presented by the development of autonomous and connected vehicles must be harnessed to deliver the promise of significantly reduced car ownership, use and storage (i.e. parking), as well as a dramatically safer traffic environment. Policy should lead technology on this journey.
- **Creating a safety culture:** establishing a goal of Zero fatalities and serious injuries within a generation is going to take a commitment on the part of every single user of the transportation system, as well as policymakers, traffic engineers and community planners. That commitment exists in the world of aviation, shipping, rail, and workplace safety and must be extended to our highways and communities.

EVALUATION AND RESEARCH

ARC recommends future research and analysis into new areas of inquiry that will assist regional efforts to eliminate fatal and serious traffic crashes.

8. Support Improved Data Collection, Crash Analysis, and Evaluation

Consistent and compete data is foundational to a safe system approach to traffic safety. Throughout the ***Safe Streets*** development, limitations to data have highlighted areas that need further exploration and more detailed analysis. ARC recommends future research and analysis into new areas of inquiry that will assist regional efforts to eliminate fatal and serious traffic crashes.

Improved Data Collection and Analysis

A number of further research needs and issues were identified during the development of the Safe Streets plan including:

1. More definitive and complete information is needed on the cause or contributing causes of crashes.
2. The inclusion of information on non-auto crashes, near misses, and the perception of safety would add to the overall crash picture
3. Multi-dimensional crash analyses would offer more objective assessments of safety. For example, there are increased numbers of pedestrian crashes near transit stops—but no analysis of whether crash victims were using transit or were at that location for other reasons.
4. Further research is needed into the traffic safety impact of the development patterns and built environment fostered by the Livable Centers Initiative
5. A better understanding of the intersectionality of race, poverty, housing, access to jobs, health, and traffic safety is essential to improving traffic safety in an equitable manner.

ARC will support research initiatives to help answer these questions by participating in research efforts, writing letters of support for regional priorities, providing technical or material support in research efforts, hosting or fostering students and academics, and identifying future funding efforts for research and analysis.

Evaluation

Tracking non-motorized fatalities and serious injuries will help determine whether the region is moving towards zero traffic fatalities and will support the future establishment of more aggressive targets. The current Federal performance measures establish a clear framework for evaluating regional progress:

1. Number of non-motorized fatalities and non-motorized serious injuries.
2. Anticipated effect of the Transportation Improvement Program (TIP) toward achieving adopted targets.

A robust evaluation program is complimentary to a data-driven project selection process. The effectiveness of ARC's TIP in reducing long-term fatality and serious injury risks will depend on data available and documented during the project prioritization process (see page 48-49), as well as data collected and assessed before and after project implementation. ARC will formally track regional performance measures via the Regional Transportation Plan.

PRINCIPLES FOR AUTONOMOUS VEHICLES AND SHARED MOBILITY

The World Resources Institute recently facilitated the development of "The 10 Shared Mobility Principles for Livable Cities", produced by a consortium of international transport experts from seven organizations. The principles are designed to guide urban decision-makers and stakeholders toward the best outcomes for all in ongoing changes to transport technology, operational systems, and ownership and business models. The principles:

1. Plan cities and their mobility together.
2. Prioritize people over vehicles.
3. Support the shared and efficient use of vehicles, lanes, curbs and land.
4. Engage with stakeholders.
5. Promote equity.
6. Lead the transition towards a zero-emission future and renewable energy.
7. Support fair user fees across all modes.
8. Aim for public benefits via open data.
9. Work towards integration and seamless connectivity.
10. Support that autonomous vehicles in dense urban areas should be operated only in shared fleets.

http://www.wrirosscities.org/our-work/project-city/shared-mobility-principles-livable-cities

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ATLANTA REGIONAL COMMISSION

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Becky Katz
Bennett Foster
Claudia Bilotto
Courtney Frisch
Cristina Pastore
Elliott Caldwell
Eric Meyer
Forrest Rose
Jack Anninos
Jamie Fischer
Jimmy Dills
Kari Watkins
Katelyn DiGioia
Kemberli Sargent
Michael Kray
Michelle Rushing
Patrece Keeter
Rebecca Serna
Sally Flocks
Tracy Shandor

Primary Project Team:

Atlanta Regional Commission:	*Toole Design Group:*
Byron Rushing	Andy Clarke
Amy Goodwin	Megan Seib
Aileen Daney	Addie Weber

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Alia Awwad, Talya DiGirolamo, Regan Hammond, Sara Lynch, and Lyubov Zuyeva.

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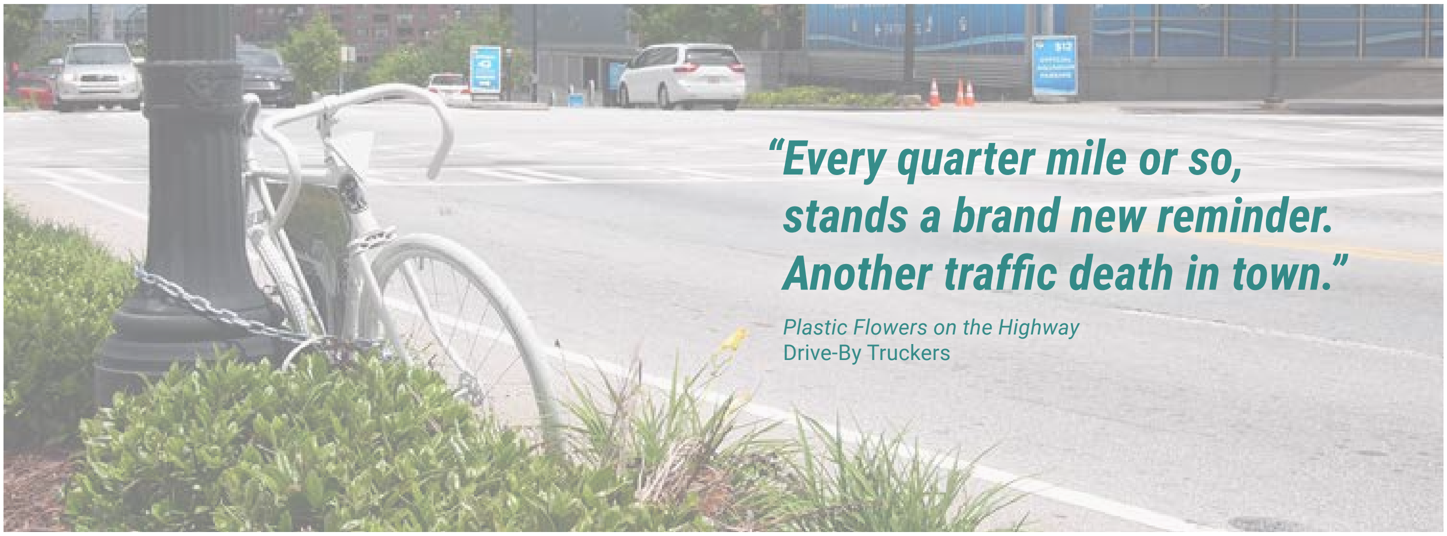
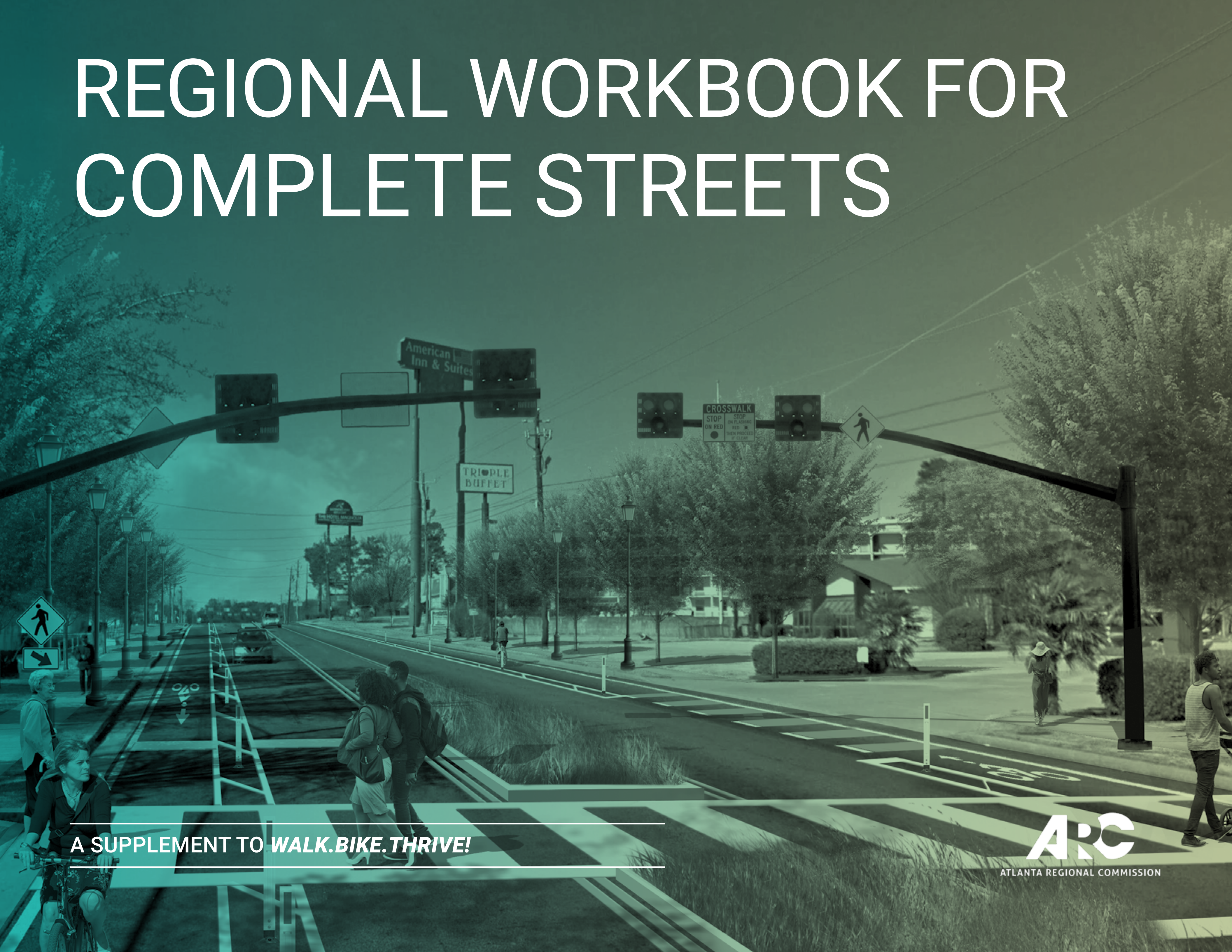


> ***"Every quarter mile or so, stands a brand new reminder. Another traffic death in town."***
>
> *Plastic Flowers on the Highway*
> Drive-By Truckers

ATLANTA REGIONAL COMMISSION

REGIONAL WORKBOOK FOR COMPLETE STREETS



A SUPPLEMENT TO ***WALK.BIKE.THRIVE!***

ATLANTA REGIONAL COMMISSION

Credits

"How are we to tame this force unless we understand it and even develop a kind of love for it?" - J.B. Jackson

This document is a supplement to the Atlanta Regional Commission's ***Walk. Bike. Thrive!*** plan and is written to support and should be considered part of ***The Atlanta Region's Plan***. This document does not constitute a standard specification or regulation.

More broadly, this document draws from many sources of inspiration that transportation policies better achieve community purposes when they balance aesthetic, ecological, communal, and civic interests. Not everybody likes the smell of gasoline.

The Atlanta Regional Commission and project staff would like to thank the elected officials, professional staffs, and citizens of the region who supported or laid the foundation for this work.

ADOPTED NOVEMBER 2019

ATLANTA REGIONAL COMMISSION

TOOLE DESIGN

TABLE OF CONTENTS

Introduction

The Atlanta region will be a cleaner, healthier, more competitive, and happier region when people make more trips by foot, bike, micromodes, or transit. However, today most trips are made by car due to long distances or lack of safe and comfortable infrastructure.

The Atlanta Regional Commission supports active transportation and uses regional strategies to increase walking, biking, micromobility, and transit for everyday travel. ARC's active transportation planning is based on two organizing principles:

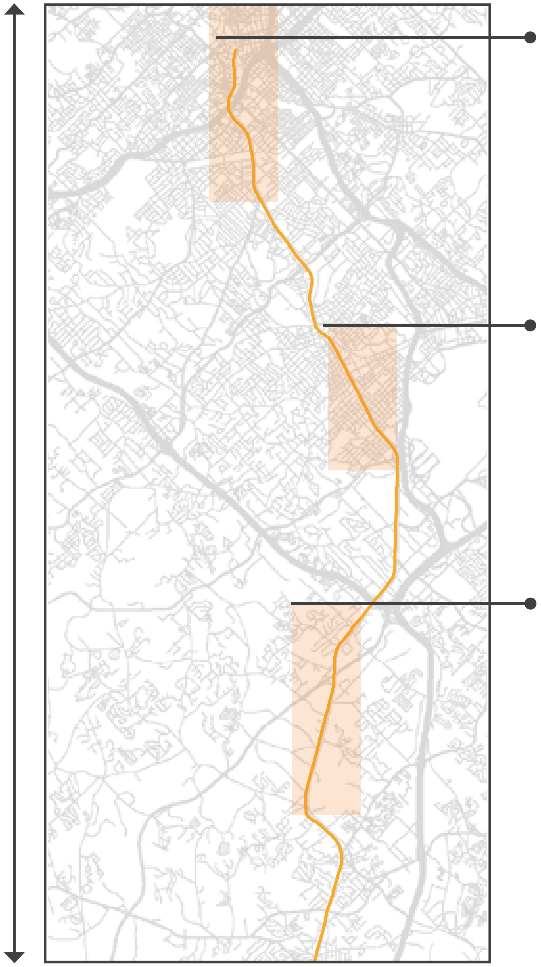
- **Supporting compact, well-connected, and diverse communities**, where the potential is greatest to enable more active transportation.
- **Increasing safety, access, and connectivity along corridors** to incrementally but systematically eliminate barriers to active transportation

ARC's ***Walk. Bike. Thrive!*** regional vision identifies lack of safety and comfort as significant reasons why people don't walk and bike more often. ARC's ***Safe Streets for Walking and Biking*** highlights common roadway design elements that cause widespread safety problems: high speeds; multi-lane roadways with poor lighting; missing or poor-quality sidewalks; few or no safe places to cross; and inadequate bike infrastructure.

Complete Streets are roadways that help provide a safe, comfortable, and accessible transportation system for everyone. Designs vary, but all incorporate context-sensitive roadway elements to proactively decrease risk and increase active transportation. While Complete Streets are natural for walkable urban areas, they also provide a set of multimodal tools for addressing safety and access along regional thoroughfares.

Many national publications address walkable urban areas, but much less guidance is available for metropolitan Atlanta's major challenge: making suburban roadways safer for people on foot and bike. Most people here live in low-density suburban communities and travel along auto-oriented corridors. Regional strategies for Complete Streets must concurrently address several scales: corridor-based multimodal planning, place-based community development, and regional growth strategies.

This ***Regional Workbook for Complete Streets*** is a supplement to ARC's plans. It is a resource for ARC and local governments to reference for project prioritization, funding, and design decisions. Each section frames common planning questions and provides research-based strategies to help build a region where it is easier for everyone to travel.


Traditional Planning
Prioritizing Access & Connections
Prioritizing Speed & Mobility
Conventional Modern Planning

Urban center with highly-connected, accessible streets; mixed uses, public space, good transit, and slow speeds. Very walkable, low risk, natural for Complete Streets.

Urban neighborhood with well-connected street grid, access to transit; more traffic and higher speeds. Walkable but moderate risk.

Suburban road carrying high-speed, high-volume traffic; low connectivity at a few big intersections; limited transit service. Not walkable and high risk, requiring multimodal safety solutions.

Complete Streets are needed throughout the Atlanta region even though regional contexts vary widely. Roadway factors and locality should inform designs that support walkable communities, make regional connections along thoroughfares, and build a safer transportation system.

SECTION 1.

UNDERSTANDING COMPLETE STREETS

What are Streets?

We have come to think of streets as infrastructure for moving cars. But traditionally, streets allowed local access and provided the largest public space within cities. Roads and highways provided travel between cities. This distinction has blurred in recent times, but the design of streets and roads remains vital to providing safe transportation and supporting great communities.

Roles of Streets

Streets and roads perform several fundamental roles in communities:

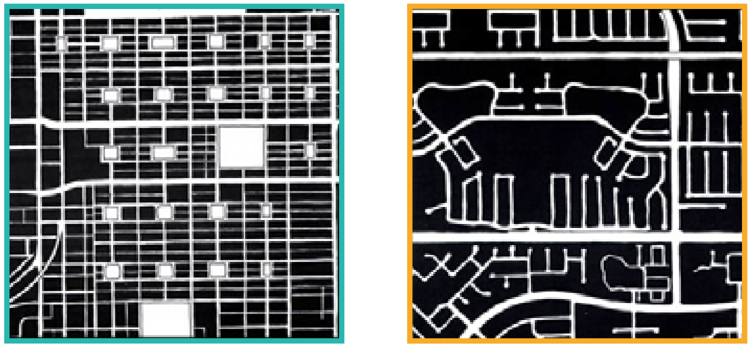
- **Form:** Streets networks determine community form by shaping how development is distributed and reinforcing patterns of travel. Connected grids of smaller streets make active transportation easier by providing walkable blocks, shortening travel distances, reducing congestion, and increasing route choices. Dendritic road networks and corridors with few crossings encourage long automobile trips, are susceptible to congestion, and create barriers.
- **Function:** The designs of streets dictate how people can travel. Comfortable facilities for walking, bicycling, micromobility, and transit access encourage those modes. Automobile-oriented designs discourage active transportation by increasing risk, decreasing comfort, and creating barriers. Elements of street designs are guided by regulations but should also be determined by community vision, data analysis, long-range planning, and public input.

Conventional transportation planning places roadways within a hierarchy that determines their transportation function. While this functional classification is useful for managing road networks, it is inadequate for design decisions as it does not indicate needs for context-sensitive elements and fails incorporate multimodal access to many destinations along major streets and arterial roads.

Streets in a Network

Network connectivity determines the utility of the transportation system. Connected streets distribute traffic and reduce congestion. Connected walkways and bikeways increase active transportation. In urban areas, intersections should be frequent and walkways and bikeways should form complete networks.

Modal plans are useful for determining design priorities, but every major roadway should provide multimodal options to meet travel needs and provide safety and dignity for people on foot, on bikes, using assistive devices, and in cars.



A traditional connected street grid (left) compared to a modern, conventional road hierarchy (right).

> "The street is the primary structural unit of the city. Streets allow us to communicate and to move about. They constitute the order within the collective whole. Streets are complex institutions with great social, political, and economic depth. Giving them over to the single function of traffic movement, as we have done over the last 100 years, depletes them of their historical depth and role."
>
> *— Doug Allen*

Transportation and Land Use Connections

Transportation facilities and adjacent land uses interact in constant feedback loops. Compact development patterns support walkable streets, bicycling facilities, and more transportation choices. Widening roads provides an incentive for dispersed commercial and residential development which strains the road network and spurs continual investment in a few major corridors. These feedback loops foster political and socioeconomic systems invested in their continued success.

Complete Street decisions should consider communities and transportation as a whole and challenge established political, economic, and cultural expectations. To support more walkable places we must build new systems.

Streets make communities. Street networks should provide connectivity and be planned as a multi-century investment. Street elements should provide comfort and safety for everyone and be made multimodal at every opportunity.

What are Complete Streets?

Complete Streets are multimodal roadways designed and operated to provide safe and comfortable access for all roadway users regardless of their age, ability, or choice of transportation mode. People on foot or bike, motorists, and transit or micromobility users should be able to safely use every street and roadway, even if one mode has priority over another on a particular corridor (e.g. a bus priority lane; bike route; or high occupancy vehicle lane). Complete Streets may be local streets or regional thoroughfares, but each features context-sensitive designs, is rooted in community vision and values, and enables communities and the region to thrive.

United States Department of Transportation

The U.S. Department of Transportation states that "**every transportation agency ... has the responsibility to improve conditions and opportunities for walking and bicycling**" and recognizes Complete Streets as a context-sensitive approach to building an accessible transportation system for all.[1]

USDOT defines Complete Streets as "… streets designed and operated to enable safe use and support mobility for all users. Those include people of all ages and abilities, regardless of whether they are travelling as drivers, pedestrians, bicyclists, or public transportation riders. The concept of Complete Streets encompasses many approaches to planning, designing, and operating roadways and rights of way with all users in mind to make the transportation network safer and more efficient."

Georgia Department of Transportation

The Georgia Department of Transportation (GDOT) policy is to "**routinely incorporate bicycle, pedestrian, and transit accommodations into transportation infrastructure projects as a means for improving mobility, access, and safety for the traveling public.**"

"GDOT coordinates with local governments and planning organizations to ensure that bicycle, pedestrian, and transit needs are addressed beginning with system planning and continuing through design, construction, maintenance and operations."[2]

GDOT's policies for Complete Streets are detailed in Chapter 9 of the *Design Policy Manual* and support complete streets in urbanized areas statewide. Projects and design elements are informed by a range of safety, context, and demand warrants and community input.

Atlanta Regional Commission

ARC uses Complete Streets to relentlessly and incrementally address uncomfortable conditions for walking and biking wherever the opportunity arises. **ARC supports the implementation of Complete Street principles on every roadway and with any project receiving federal funds.**[3]

As a metropolitan transportation planning agency, ARC must "provide for consideration of projects and strategies that will … increase the safety of the transportation system for motorized and nonmotorized users."[4]

ARC's uses a strategic approach for context-sensitive Complete Street investments on the existing roadway network. ARC utilizes or re-orients existing funding and programs to support communities and create a safer, more equitable transportation system for all.

Sources: 1. USDOT (2010); 2. Georgia DOT (2019); 3. ARC (2015);
4. U.S.C. **§ 450.306.** Scope of the metropolitan transportation planning process.

Regional strategies should consistently and routinely encourage context-sensitive roadway designs that enable safe access for all users, including people of all ages and abilities regardless of mode.

> For several decades now, movement has taken precidence over place. The form and content of urban development is now shaped largely by transportation policies. These policies can regain proper civic purpose and meaning only when they are subordinated to a larger ecological and communal project.
> — *Leon Krier*

? What do Complete Streets do?

Enabling travel and eliminating crashes involving people on foot and bike in the Atlanta region is a daunting prospect. Investments should be strategic to maximize opportunities while being relentless in implementing safe transportation options for everyone in every community. Though the Atlanta region is enormous and diverse, Complete Street projects can:

Support Communities & Improve Access:

- **Support Walkable Communities:** Urban centers are compact places that can support short trips better accomplished by walking, bicycling, and micromobility. Dense destinations and mixed land uses tend to encourage more walking and biking. Urban centers are enhanced by prioritizing Complete Streets that provide comfortable infrastructure for walking, bicycling, or using assistive devices or micromobility vehicles. ARC's Unified Growth Policy Map (UGPM) and Livable Center Initiative (LCI) program help identify centers and focus Complete Streets in conjunction with supportive development.
- **Serve High-Demand Locations:** Pockets of bicycling and walking activity occur outside of busy city and town centers throughout the Atlanta region. Complete Street projects should be prioritized for streets that are proximate to schools, parks, commercial centers, dense residential housing (e.g. multi-family or student housing), transit stops and stations, and areas with low car ownership.
- **Provide Accessiblity:** Many people choose to walk or bike to save money, increase fitness, or have fun. However, at least one-in-three people are unable to drive due age, disability, or lack of financial resources and rely on other transportation options. Complete Streets provide transportation options to help people of all ages and abilities travel safely and maintain a high quality of life.

> "Most Americans today do not live in towns or even in cities in the traditional sense that we think of those terms. Instead, most of us are citizens of the region — a large and multi-faceted metropolitan area encompassing hundreds of places that we would traditionally think of as distinct and separate communities."
> —*Peter Calthorpe*

Reduce Transportation Risk:

- **Eliminate High-Crash Locations:** In communities with high levels of walking and biking, there are often a number of locations that have a concentration of fatal and serious bicyclist and pedestrian crashes locations. A crash hotspot analysis can help identify significant locations with reoccuring crashes. These are critical locations to take measures to increase safety and begin reducing fatalities and serious injuries.
- **Reduce High-Risk Corridors:** In areas where walking, bicycling, or micromobility are less common, pedestrian and bicyclist fatalities are typically widely distributed and occur at low frequencies at any single location. Past crash locations may not be good predictors of future crash sites. Systemic analysis can show where dangerous roadway features and higher demand intersect in order to identify corridors with higher transportation risks. These roads should be higher priorities for Complete Streets.

Make Connections:

- **Connect Networks:** Complete Streets projects can provide the missing link that connects existing sidewalks and bikeways, mitigates a high-risk segment of roadway, or connects a severed street grid. Bikeway or walkway plans may help identify dangerous locations, missing network links, and priority destinations for people on foot and bike.
- **Enhance Transit Stations and Stops:** Walking, bicycling, and micromobility trips are typically short and concentrated within a community. Connections to transit services can expand walking, bicycling, and micromobility travel to encompass many regional trips. Ensuring bus stops and train stations can be safely accessed by foot and bike, particularly where busy roads must be crossed to reach a bus stop, should be a priority for Complete Streets.

Regional strategies should use Complete Street investments to achieve regional and community goals. Complete Streets provide mobility, safety, and access for people and are economically beneficial for communities.

Why are Complete Streets Important on Major Roads?

Modern metropolitan areas have largely developed along higher-traffic arterials. These roads are where regional priorities converge and often conflict: safety, speed, access, and regional movement. Major roads are critical to build as multimodal corridors and should balance both local and regional needs.

- Arterials and thoroughfares roads frequently provide the only access to a large portion of the Atlanta region's retail, commercial, and residential areas as well as many regional transit routes.
- Arterial roads account for a high percentage of crashes in the region, especially those resulting in fatalities or serious injuries.
- Conventional modern arterial designs rarely included places to walk or ride a bike and make many trips infeasible outside of a car.
- As the Atlanta region continues to grow, major roads will continue to develop or be redeveloped and provide opportunities for incremental change.

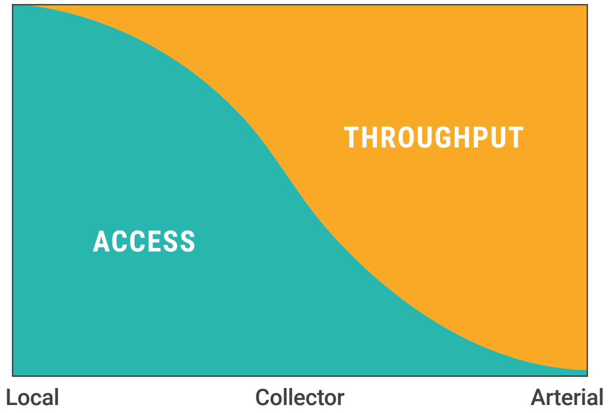
Table 1. Conventional vs. Traditional Roadway Design Values*

CONVENTIONAL	TRADITIONAL
Prioritize mobility	Prioritize access
Reward long trips	Promote short trips
Build dendritic street hierarchy	Build connected streets
Design for higher speeds	Design for slower speeds
Encourage single land uses	Encourage mixed land uses
Serve automobiles	Serve all roadway users
Assume no walking	Assume people walking

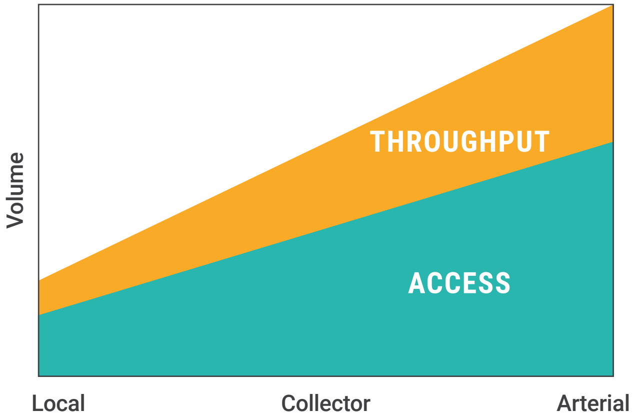
** conventional in the modern automobile-priority era; traditional for pre-automobile eras*

Regional strategies should encourage traditional roadway design values and context-sensitive roadway designs to improve safety, connectivity, and access along major corridors.

Figure 1. Restoring Streets to their Traditional Purpose



Conventional Purpose of Arterial Streets: Single-Purpose Mobility



Traditional Purpose of Arterial Streets: Multi-Modal Access

Arterial roadways often blur the distinction between mobility and access. Many modern arterials are designed only for automobile throughput, though major roads have always attracted development and served as destinations for goods and services. This tension causes safety and mobility conflicts.

Why are Complete Streets Regionally Important?

Complete Streets support walkable communities and contribute to a more walkable region. Walkable communities are small in land area, but cumulatively help shape regional growth and achieve regional goals:

- **Sustainable Environment:** Large cities often support multimodal transportation and lower per capita carbon emissions, but only above densities that support shorter trips and increased travel by low-emission transportation modes.[1] For many large urban areas, metropolitan-wide travel patterns and suburban commute trips significantly outweigh center-city efficiencies.[2]

  Reducing emissions requires investment in existing urban areas, but also regional changes in transportation and development patterns: more walkable urban centers; denser, mixed-use suburbs; and more regional transit and active transportation options.[3]

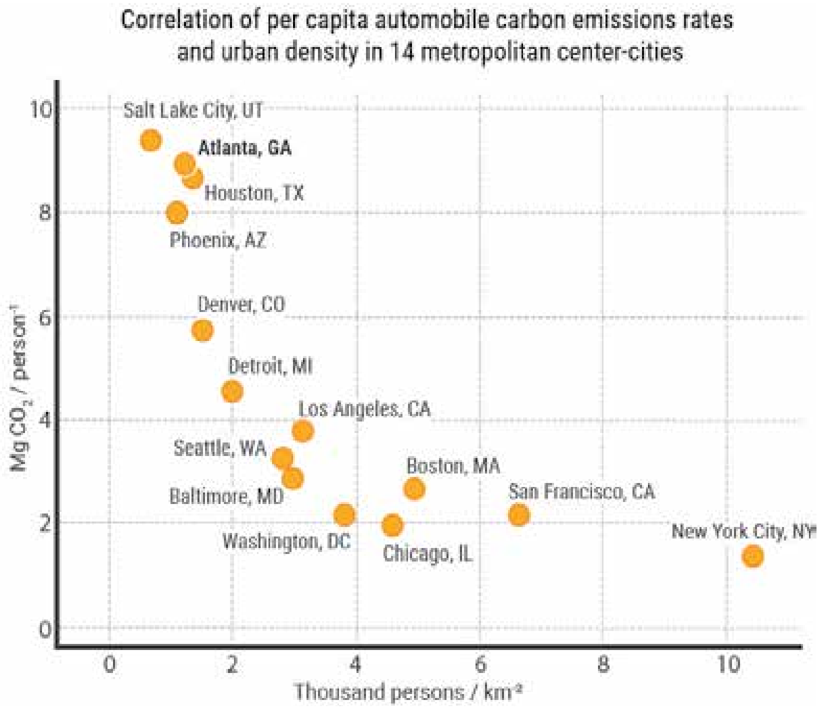
- **Social Equity:** Commuting times are the best predictor of economic opportunities and are strongly influenced by regional growth patterns. The impact of transportation on the ability of low-income families to escape poverty is most striking in areas with high degrees of segregation, income inequality, and sprawling development.[4]

  Equity solutions are complex, but intentional strategies must: create affordable and workforce housing; provide transportation options; improve education; and increase regional accessibility via increased transit, increased last-mile connectivity, and increased affordable housing within walkable communities.

- **Competitive Economy:** Walkable urban places occupy less than 1% of the Atlanta region's land area, but contain nearly 20% of the region's jobs. They generate higher values with lower long-term costs than driving-only areas.[5]

  Building walkable centers (along with improving education) is the most effective economic development strategy that the region can pursue.

Regional strategies should encourage compact, walkable, and transit-accessible communities. Compact communities provide the proper context for Complete Streets, while safe and multimodal streets better support community-scale travel.



Per-capita emissions correlate with urban densities with, but are especially reduced when densities are high enough to support low-emission travel modes. City emissions are heavily influenced by regional commuting patterns, which outweigh urban efficiencies.

Adapted from: Gately, Conor, K. et al. (2015) "Cities, traffic, and CO2: A multi-decadal assessment of trends, drivers, and scaling relationships"

INDICATORS OF LOWER CO₂ EMISSIONS (IN RANKED ORDER):

Residential:	**Transportation:**
More presence of multifamily housing	More multimodal accessibility
Decreased size of residences	Increased transit share
Increased density of housing	Shorter distance to regional activity centers
Increasd number of people per household	Higher population density
	More neighborhood walkability

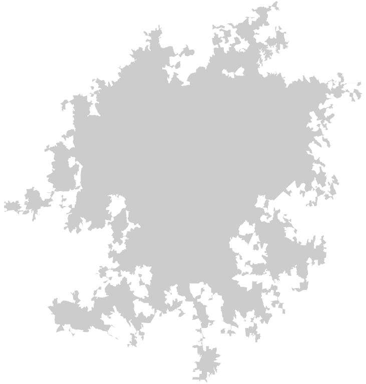
Source: Atlanta Regional Commission. (2014) "Impact of Community Design on Greenhouse Gas Emissions".

Sources: 1. Gately (2015); 2. Jones (2014); 3. Goldberg (2007); 4. Chetty (2015); 5. Leinberger (2013).

SECTION 2.

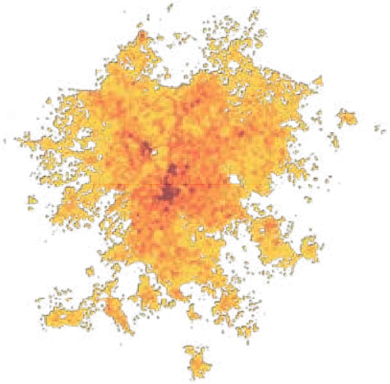
MAKING DECISIONS ABOUT COMPLETE STREETS

How Can Data and Policy Inform Complete Streets?



Regional Scale & Urbanized Areas

Urbanized areas are the scale at which modern communities function. Census-designated urban areas (including the majority of the Atlanta MPO area) represent relatively dense developed territories and determine regional travel patterns. Complete Streets should be considered anywhere within an urbanized area, though specific elements should be context-sensitive and assessed at the corridor or local level.



Walking and Bicycling Demand & Propensity

Propensity for walking and biking in the region is not evenly distributed. Density, proximity to certain destinations (such as schools or stores), and other place-based factors contribute to areas with higher opportunities for walking and biking. This data can help determine destination density along a corridor, anticipate demand for facilities, and help prioritize walking, bicycling, and micromobility infrastructure.

Regional Corridors: Multimodal Thoroughfares

Thoroughfares are locations where many regional demands converge. Major roads support a range of communities, transit service, and both local and regional trips. Many thoroughfares in metro Atlanta are high risk for people on foot and bike; building multi-modal corridors is important for regional travel or local access in challenging locations. ARC's designated Strategic Regional Thoroughfare Network and other arterials provide regional mobility and connect major activity centers.

Regional Development: Centers & Places

Regional centers and places are compact areas that are naturally (or aspirationally) appropriate for walking, bicycling, and micromobility. These areas encompass a wide range of contexts and densities, but within each center planning for pedestrians and bicyclists is of equal importance to the automobile. ARC's Regional Development Guide and Unified Growth Policy Map identify centers in neighborhoods, business districts, and small towns across the region.

What is the Regional Strategy for Complete Streets?

Use Regional Policies to Prioritize Complete Streets

Complete Streets should be considered everywhere in the metro Atlanta region. Incremental investments help build a safe and accessible transportation network by supporting walkable communities or accommodate walking, bicycling, micromobility, and transit access along suburban arterials.[1]

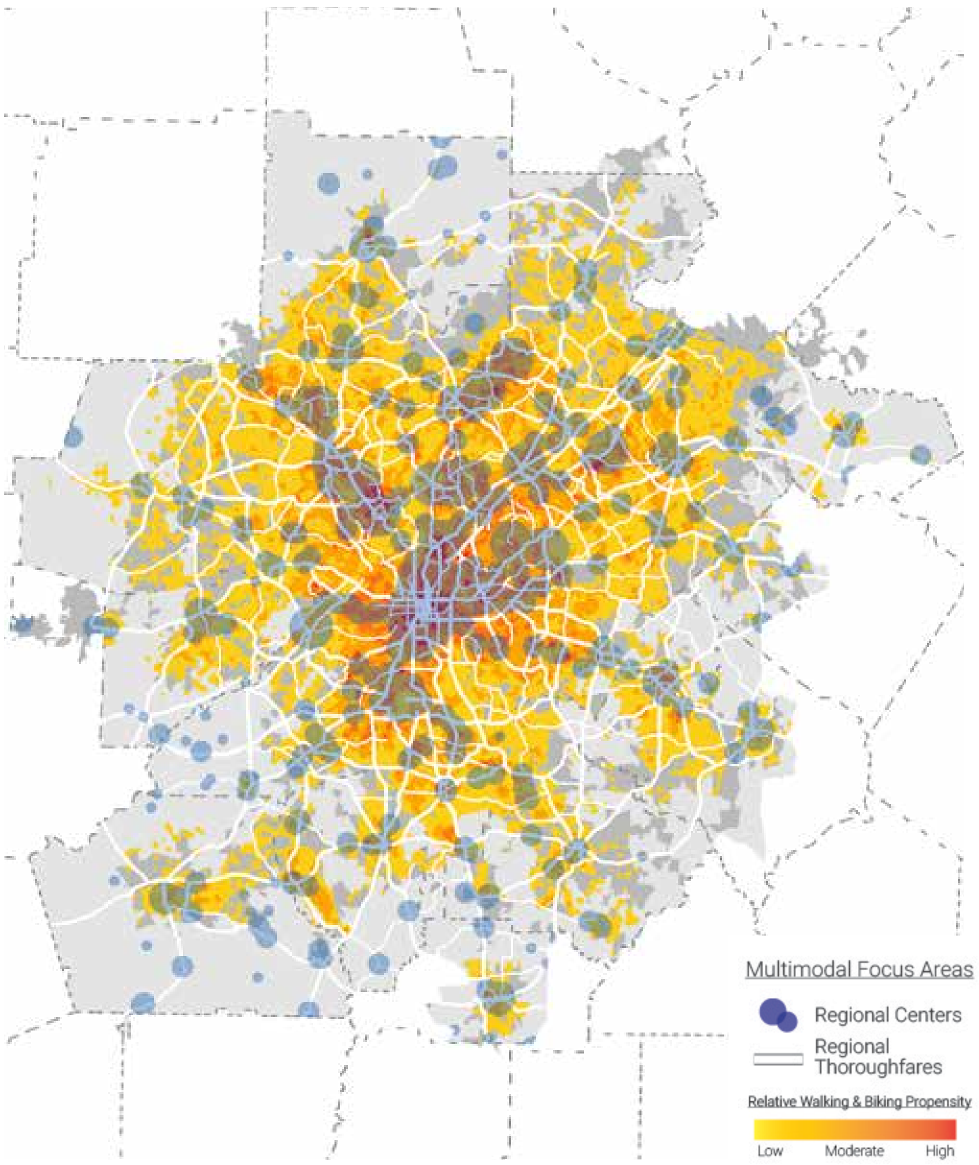
Walkable Communities: Complete Streets help make towns and regional centers walkable and bikeable. Investments in regional centers support walking, bicycling, micromobility, and transit as well as better long-term growth for the region. Transportation and development investments should focus on communities:

- Existing urban & town centers – use Complete Streets to increase travel options, meet demand, and support existing multimodal character.
- Aspirational centers – use Complete Streets and dense street networks to support multimodal options and short trips in new developments.

Multi-Modal Thoroughfares: Complete Street elements should be used strategically on regional corridors where many priorities converge – businesses, services, residences, transit routes, and traffic – in order to:

- Reduce risk and improve safety for everyone – both people walking, bicycling, or using assitive or micromobility devices as well as those driving.
- Provide access to high-priority destinations, including: schools, parks, commercial areas, residential neighborhoods, grocery stores, or community activities.
- Support existing or latent demand, especially along corridors with evidence of people walking or bicycling (i.e. a worn path along the roadside).
- Support regional transit routes.
- Connect neighborhoods and cities via walkways, bikeways, and paths.

Regional strategies should support context-sensitive Complete Streets throughout metropolitan Atlanta. Urban centers should feature Complete Streets. Regional thoroughfares should be multimodal. Complete Streets within communities are complimented by connections along thoroughfares, as well as regional transit and greenway trails for longer trips.



Sources: ARC UGPM, Regional Thoroughfare Network, WBTI

Sources: 1. adapted from ITE (2010).

What is the Regional Strategy for Complete Streets?

Use Complete Streets to Reduce Risk

Complete Street elements should be considered on every roadway in the metro Atlanta region. Incremental investments help build a safe transportation network, increase connections within and between communities, and accommodate walking, bicycling, and transit access to high-priority destinations.

Safety can be determined by crash rates or the risks that people are exposed to when traveling. Assessing risk can help communities be more proactive in preventing crashes and eliminating serious injuries and fatalities.

Factors that contribute to risk along a corridor include:

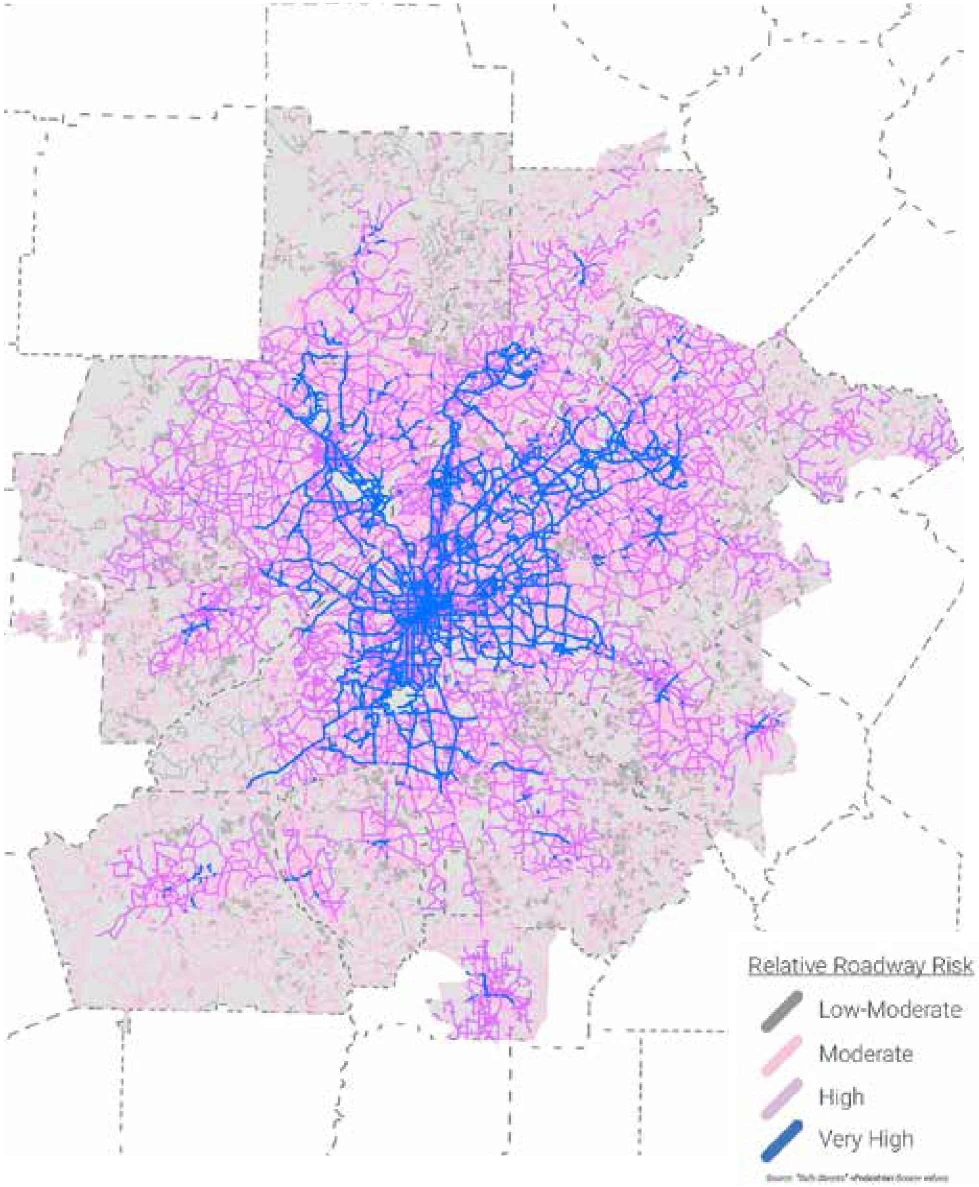
- **Roadway Characteristics:** Some roadway features are associated with higher risks for serious crashes, including: vehicle speeds, lighting, presence of crosswalks, number of lanes, and roadway classifications.
- **Travel Demand:** Walking and bicycling trip estimates and transit service indicate relative levels of travel, exposure, and risk.

Roadway design is the foundation of traffic safety, but safer elements are unevenly distributed in the region – especially for vulnerable populations and underserved communities. Community-wide exposure to risk must be assessed to determine Complete Street needs:

- **Equity & Policy Priorities:** Regional distribution of risk factors can indicate disproportionate exposure for specific geographies or populations.

Every transportation investment should incoporate proven safety measures to address risk factors. The map at right illustrates regional risk factors and travel demand for walking, bicycling, or micromobility. This data can help identify priority needs for Complete Streets.

Regional strategies should support safer roadway designs throughout metropolitan Atlanta. Every transportation investment should reduce risks for people walking, bicycling, and driving. Complete Street elements and facilities should be considered intrinsic and immutable in every project.

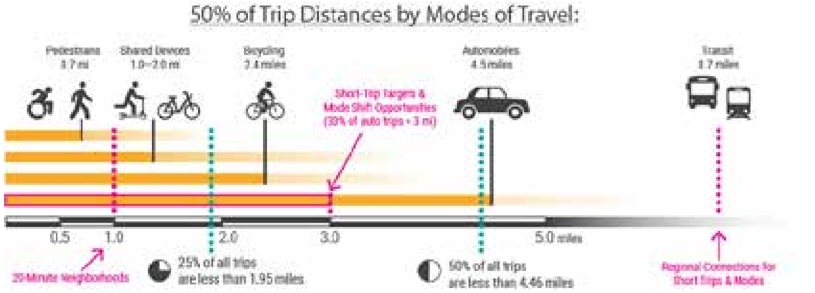


For more information, see ARC's "Safe Streets for Walking & Bicycling" (2018) report.

What is the Regional Strategy for Complete Streets?

Use Complete Streets to Support Short Trips

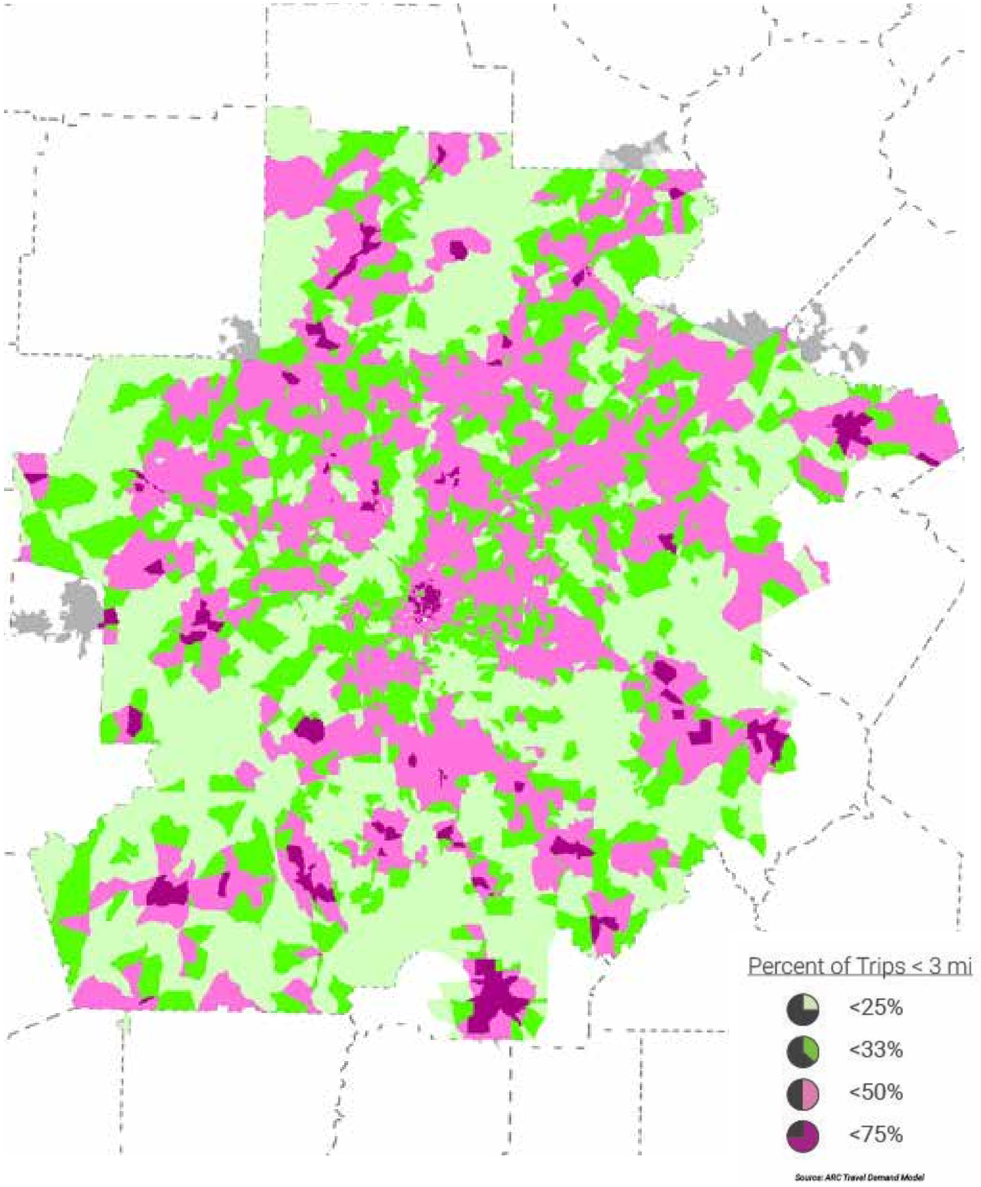
Metro Atlanta's development patterns often require long trips. Reliance on cars for long trips increases congestion, limits economic mobility, and creates stress and poor health outcomes. Walking, bicycling, and micromobility are well suited for short trips, but too many short trips still require driving due to lack of comfortable walkways or bikeways. Reducing trip distances and shifting modes requires combining compact development practices and Complete Streets.



Regional travel is complex, but areas with shorter trips often have:[1]

- **Higher Street Connectivity:** A grid of smaller streets shortens travel distances and increases route choices.
- **Higher Density:** Concentrations of residential and commerical uses enable more proximity, more walking and cycling, higher economic activity, lower infrastructure costs, lower cost of living, and environmental conservation.
- **Mixed Zoning:** Increased mixed-use zoning enables trips to be shorter and increases the number of destinations that can be accessed without driving.
- **Less Parking:** Reduced parking minimums plus market-based price strategies incentivize different travel decisions and reduce public costs of parking.

Regional strategies should prioritize short trips. Community development efforts should create compact communities and concentrate destinations. Transportation investments should support Complete Streets that provide comfortable facililties to increase walking, biking, microbility, and transit.



Source: ARC Travel Demand Model

Source: 1. Georgia Tech CQGRD (2012); SMARTRAQ (2007).

What Are the Elements of a Complete Street?

The foundation of Complete Streets are engineering elements that reduce conflicts and increase safety, including:

- Safe places to walk, travel by bicycle, or cross the street.
- Better access to high-priority destinations.
- Context-sensitive designs that support adjacent land patterns.
- Intentional strategies to manage curb-side locations and transit operations.
- Facilities that either slow speeds or separate users.

Safe Streets identified a set of twelve safety measures that address common high-risk conditions in the region (right) and should be included in roadway projects. Detailed design information for each safety measure is available from the Federal Highway Administration[1] and Georgia Department of Transportation[2]. FHWA's "Proven Safety Countermeasures" are marked with an asterisk (*).

The following pages explore general elements of Complete Streets.

Sources: 1. FHWA Proven Safety Countermeasures (2017); 2. GDOT Design Policy Manual (2019).

Medians and Pedestrian Crossing Islands*

Pedestrian Hybrid Beacon*

Road Diet*

Changing Speed Limits*

Leading Pedestrian Interval*

Rectangular Rapid Flashing Beacons

Street Lighting

Separated Bike Lanes

Neighborhood Greenway / Bike Boulevard

Sidewalks*

Crosswalk Visibility Enhancements

Traffic Calming

Safer Places to Walk

This suburban road has been reconstructed with wide sidewalks, pedestrian-scale lighting, a median and narrow travel lanes to help control speed, and controlled crosswalks (Pedestrian Hybrid Beacon) at intersections.

Potential funding sources:

- Highway Safety Improvement Program
- Surface Transportation Program Block Grant

Safer Places to Cross

Sidewalks and highly visible and accessible crosswalks at all driveways and intersections have been added to this urban/suburban thoroughfare. Pedestrian Hybrid Beacon signals are provided at intersections and mid-block locations.

Potential funding sources:

- Highway Safety Improvement Program
- National Highway System construction

Improved Access

An old, narrow bridge has been transformed by the addition of wide sidewalks, a median, and landscaping; it is still a two-lane road.

Potential funding sources:

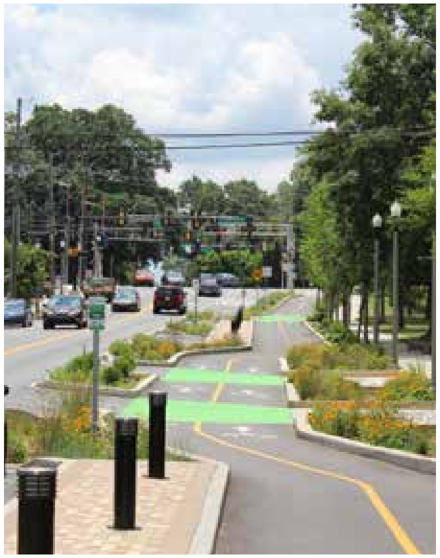
- Bridge program
- Surface Transportation Program Block Grant

Accessibility & Streetscaping

Downtown main streets benefit from well-marked, accessible crosswalks; bulb-outs and tight corners; wide sidewalks with lighting, shade, places to sit; a buffer from traffic.

Potential funding sources:

- Livable Centers Initiative
- Transportation Alternatives program
- Local transportation funds

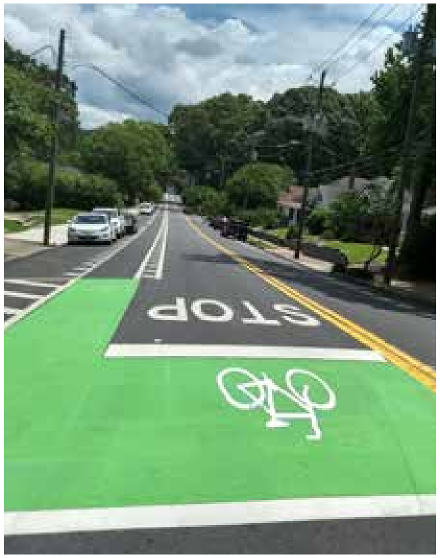


Safer Streets for Bikes

Reconstruction of this downtown street incorporated separated bike lanes, sidewalks, pedestrian-scale lighting, and streetscaping; parking and stormwater management are improved.

Potential funding sources:

- Livable Centers Initiative
- Surface Transportation Program Block Grant

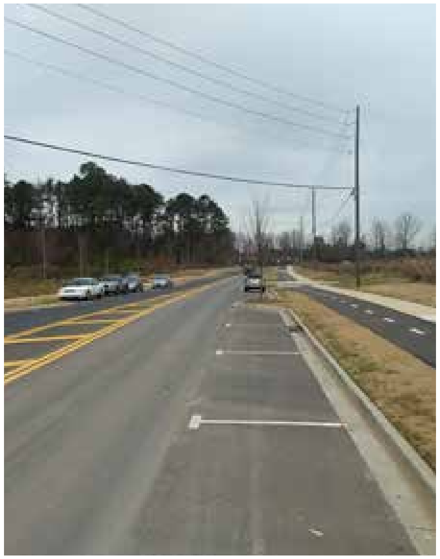


Safer Intersections for Bikes

Buffered bike lanes leading to a highly visible bike box on this suburban road provide more clarity and definition for both motorists and people on bikes, without losing parking.

Potential funding sources:

- Resurfacing projects
- Local transportation funds

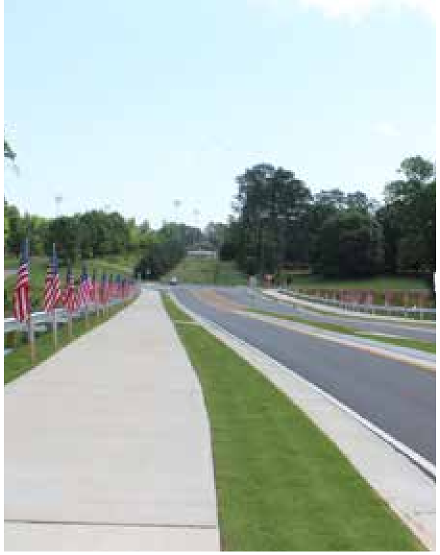


Lane & Speed Reductions

This previously overbuilt street has been rebalanced to include a sidewalk, a multi-use path, onstreet parking, and one lane of low speed car traffic in each direction.

Potential funding sources:

- New development/developers
- Local transportation funds



Multi-Use Paths

This new suburban road was built with a sidepath to accommodate bicyclists and pedestrians; it also has a median and narrow travel lanes to manage speed. Note: Mixing pedestrian and bicycle traffic should be examined carefully and separation introduced in moderate-high traffic areas or where conflicts arise.

Potential funding sources:

- New development/developers
- Local transportation funds

Do Complete Streets All Look Alike?

No. The different components of a Complete Street may vary as much as the context in which they are applied. Two parallel streets just a block away from each other in the same community may look very different because of changing land uses and differing purposes of the street. However, both streets need to provide basic levels of safety, comfort, and access for all users while responding to the needs of the street network and vision and goals of the community.

In the Atlanta region, the same road may transition from rural to suburban to urban core and back again in the space of a few miles. The American Association of State Highway and Transportation Officials (AASHTO) broadly identifies five land use types, often called an urban design transect, that a road may traverse and connect. Each zone along the transect has a different context, a different function, and thus different design needs and different community priorities even though it's still the same road. The examples that follow are from a single corridor in the region.

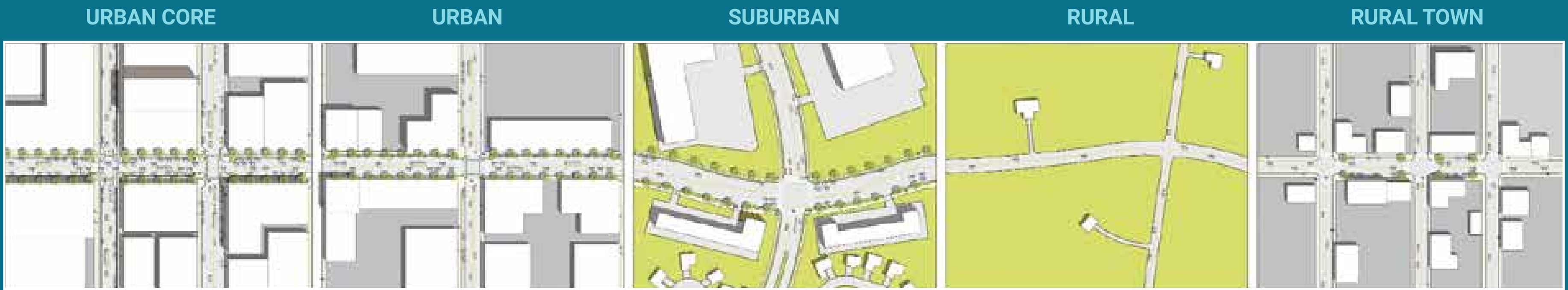
Measuring Walkable Communities

Density is needed to support walking, bicycling, and transit service. Walkable densities are seldom clearly defined and rarely follow boundaries — driveable suburban areas exist within cities and denser suburbs can support walking, bicycling, and micromobility.[i]

General metrics can help assess walkable communities:

- **300-600 feet** average intersection spacing creates walkable blocks and convenient crossings.
- **20-35 dwelling units per acre** provides densities for highly walkable districts.
- **100 blocks per square mile** indicate favorable densities for walkable areas.
- **Greater than 8 dwelling units per acre** supports both walking and transit service.
- **4,200 people per square mile (1,650/km^2)** indicate densities for declining per capita emissions.
- **70 or greater Walk Score** indicates good accessibility.

> **"The key elements needed for an active community are highly mixed land uses, short connected blocks, and high-quality infrastructure for pedestrian and bicycle traffic. Sidewalks, convenient crosswalks, bicycle lanes, quality transit service, traffic calming measures, mixed-use zoning, and connected street networks facilitate active transportation and save lives.**
>
> **However, these design elements are lacking in many parts of the region. Major changes are needed in both land use and transportation practices in order to design active communities and fund adequate multimodal infrastructure."**
>
> *— "Plan 2040 Health Impact Assessment," Georgia Tech Center for Quality Growth & Regional Development*



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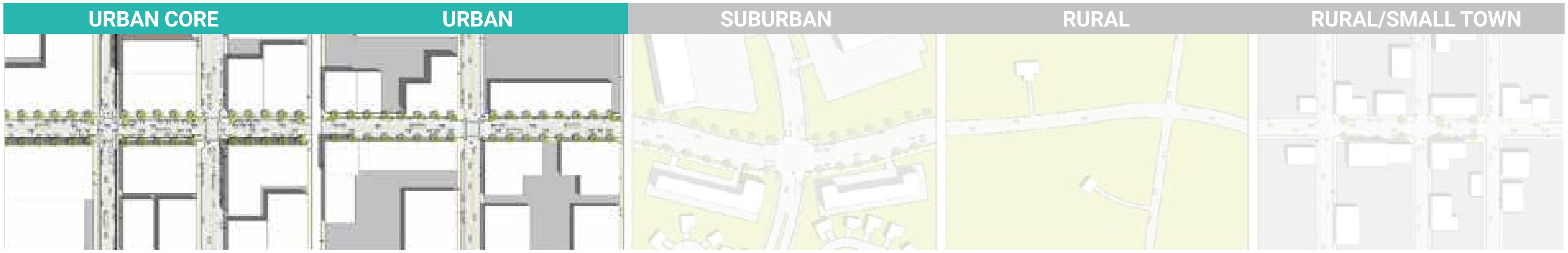
[i] *Adapted from:* ITE Walkable Thoroughfares (2010); FDOT Context Classification Guide (2017); Plan 2040 Health Impact Assessment (2012); "WalkUP Wake-Up Call" (2013); Gately et al (2015); and Reid Ewing (2002).



Urban Core – Central Districts

Urban cores are the densest contexts with a variety of land uses (e.g. retail, office, multi-family residential etc.), defined city blocks, short distances between signalized intersections, and minimal setbacks or build-to requirements to frame the public space.

Short, well-defined city blocks with office, retail, and other mixed uses generate intense pedestrian use, particularly around transit stops. Bicycle use (including bike share riders) is high. The traffic mix includes frequent buses, streetcars, scooters, shared ride services, and taxis. Short travel distances and limited parking options also encourage walking and biking. The Downtown and Midtown districts of Atlanta reflect the urban core.

Urban – Cities, Towns, & Neighborhood Centers

Urban contexts are diverse areas of dense development that offer multiple amenities and destinations, as well as a variety of mobility choices (e.g. walking, biking, transit, and personal vehicles). Shorter travel distances between destinations and signalized crossings encourage biking and walking if infrastructure is safe and comfortable. The mix of land uses support and encourage a wide range of mobility choices.

Neighborhoods adjacent to downtown Atlanta (e.g. Virginia-Highland, Buckhead, and West End), the downtowns of smaller cities such as College Park and Marietta, and new town centers including Sandy Springs and Suwannee have an urban context.

> "Streets moderate the form and structure and comfort of urban communities.
> In a very elemental way, streets allow people to be outside."
> *- Allan Jacobs*

Complete Streets in Urban Contexts

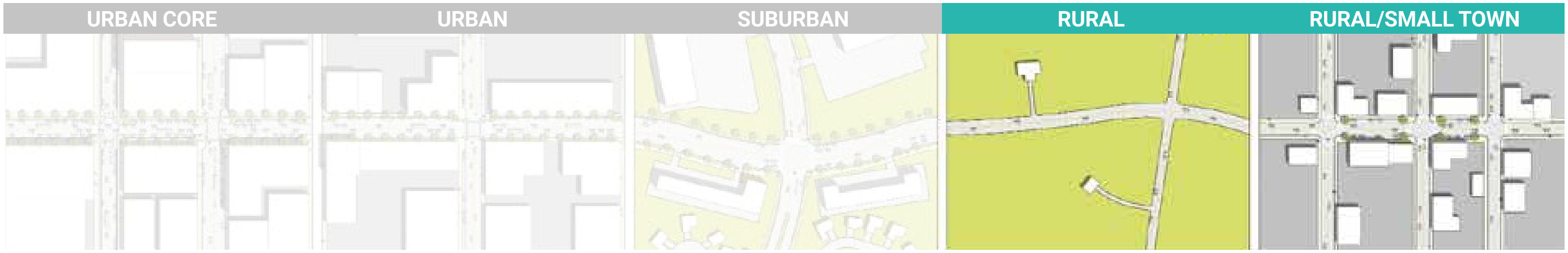
Complete Streets in the urban core and urban centers may have:

- Wide, well-lit sidewalks to accommodate many people and a range of activities.
- Short blocks with highly visible, signizalized intersections.
- Walk signals called automatically, often with leading pedestrian intervals.
- Protected crossings, including bulb-outs, curb extensions, mid-block crossings, landscaping to protect pedestrians from turning vehicles.
- Slow vehicle speeds, with traffic calming where necessary.
- On busier streets, separated bike lanes and protected intersections.
- Curbside lanes managed to balance the demand for transit service, delivery vehicles, on-street parking, and bicycle use.
- Extensive bicycle parking, including on-street corrals.

Design Information and Resources

Many urban areas should be planned as a livable center or "20-minute neighborhoods" where a high percentage of short trips can be made by foot and bike within 20 minutes. General features include short block lengths, connected street and bikeway networks, a fine-grained mix of land uses, a variety of housing types, and connections to regional transit.

- MassDOT Separated Bike Lane Planning & Design Guide (2015)
- NJDOT Complete Streets Design Guide (2017)
- Washington State DOT Design Manual (2018)
- American Association of State Highway and Transportation Officials (AAHSTO) Guide for the Development of Bicycle Facilities (currently being updated)
- National Association of City Transportation Officials (NACTO) Urban Street Design Guide (2013)



Rural – Highways & Countryside

Rural areas are characterized by large parcels used for single-family residential and/or agricultural purposes. Buildings are set back significantly from roadways. Mobility choices are limited primarily to personal vehicles because of long travel distances. Rural roadways may have paved shoulders where walking and biking can occur.

Areas of the metro Atlanta region are still quite rural, with narrow two-lane roads connecting very low-density housing, infrequent commercial locations, and farms. These roads may see little pedestrian traffic but are often popular bicycling routes.

Rural – Small Towns

A small town in rural areas is a node of compact, somewhat dense development surrounded by farms or open land. Compact development, low traffic volumes, slow speeds, on-street parking, and sidewalks may allow for enhanced walkability and bikeability. Due to the surrounding low density rural context, the rural town may be connected to a less dense road network with few signalized intersections and limited pedestrian infrastructure outside the immediate town center.

Communities such as Flowery Branch, Auburn, Palmetto, and Canton display typical rural town characteristics. They generally have a walkable street grid with low traffic volumes in the center of the town. There are usually few bicycle facilities and very limited transit service.

> "The experiential quality of the environment must be planned for at a regional scale, since thoroughfares occur for regional reasons, and people now live their lives at that scale."
> — *Kevin Lynch*

Complete Streets in Rural and Small Town Contexts

Complete Streets in small towns may have:

- Gateways or transitions into communities, from higher to slower speeds.
- Sidewalks and lower-speed street designs.
- Main streets featuring wide sidewalks, angle parking, high-contrast and decorative crosswalks, bulb-outs, and traffic calming measures.

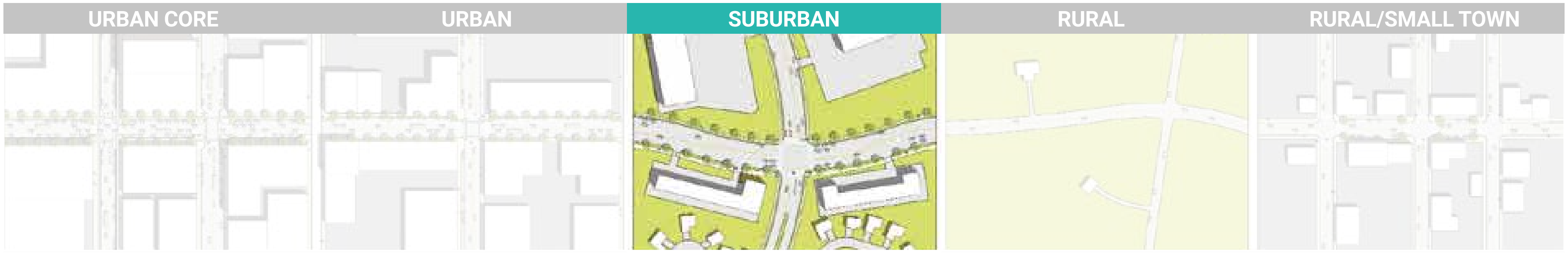
Multimodal Roads in rural areas may have:

- An adjacent multi-use path or parallel greenway trail, especially in order to connect regional destinations.
- A paved shoulder of four or more feet of ridable space (i.e. unobstructed by rumble strips or obstacles), depending on motor vehicle and bicycle volumes.
- Motor vehicle speeds managed in areas where visibility is limited.

Design Information and Resources

Although rural town centers may be smaller and less compact than their urban counterparts, they are still similar to a livable center or "20-minute neighborhood" when looking for design guidance. Most, if not all, of the population of a small rural community will live within a short walk or bike ride of the center; the emphasis for complete streets is on sidewalks, crosswalks, traffic calming, and streetscaping consistent with a more urban center.

- Federal Highway Administration (FHWA) Small Town and Rural Multimodal Networks (2016)
- MassDOT Separated Bike Lane Planning & Design Guide (2015)
- NJDOT Complete Streets Design Guide (2017)
- Washington State DOT Design Manual (2018)
- American Association of State Highway and Transportation Officials (AAHSTO) Guide for the Development of Bicycle Facilities (currently being updated)



Suburban

Suburban areas provide a variety of land use types (e.g. residential, retail, office etc.) that are rarely mixed on a single site but are connected by a network of arterial and collector streets. Commercial and industrial development is spread out on medium to large parcels with greater minimum setbacks and large surface parking lots. Suburban transportation corridors allow motorists to travel from suburban areas into more dense contexts for employment, services and/or entertainment. Biking and walking opportunities may be available through limited on-street facilities and the development of off-street trails; however, connectivity may be challenging due to increased distances between signalized intersections along arterial and collector streets.

Post-war growth in the Atlanta region has generated extensive suburban development covering most unincorporated counties and areas outside of city cores or urban centers.

Design Information and Resources

Multimodal suburban corridors are difficult to design and have challenging trade-offs between existing and needed travel modes.

The following pages of this workbook are focused on complete street elements that can be incorporated, or potentially paired with new development strategies, to introduce safer places to walk or cross the street, support regional transit, anticipate changing land uses, or reduce congestion.

Complete Streets in the Suburban Context

Multimodal thoroughfares are the great challenge of the Atlanta region. Suburban roadways are built primarily for the rapid throughput of large volumes of motor vehicle traffic over relatively long distances; the land use pattern they serve is also predominantly auto-centric. The result is an environment that is hostile to walking, biking, and transit. This is made worse by specific roadway design features (identified in *Safe Streets*) that increase risk for people on foot and on bike. Where facilities for pedestrians and bicyclists do exist, they are often inadequate and poorly maintained.

Increasingly, this development pattern is breaking down for people in motor vehicles as well. Congestion is worsening and a reliance upon driving for every trip is costly in terms of time, money, environmental degredation, and quality of life. As the region continues to add population, multimodal travel options in suburban areas are critical to increasing sustainablity, efficiency, and safety.

> “Roads no longer merely lead to places; they are places. And as always, they serve two important roles: as promotors of growth and dispersion, and as magnets around which new kinds of development can cluster. In the modern landscape, no other space has been so versatile.”
> — *J.B. Jackson*

SECTION 3.

CRITICAL QUESTIONS ABOUT WALKING & BICYCLING ON SUBURBAN ROADS

Critical Questions About Walking and Biking on Suburban Roads

There are design solutions to make suburban roads better for walking, bicycling, micromobility, and accessibility. Designs include the safety measures and components of a Complete Street shown earlier (see pages 10-11). However, these designs can seem insignificant within an extensive suburban roadway network that routinely includes design features known to increase risk. Further, application of Complete Street elements may not be clearcut and may require nuanced or subjective decisions.

In the pages that follow, this Complete Streets workbook demonstrates the value of incremental change to bringing basic dignity and inclusivness to the harshest road environments while beginning a successful transformation to more Complete Streets and walkable communities in the medium- and long-term. This workbook also tackles several critical questions that are frequently raised by planners and designers faced with making suburban roadways more hospitable and safe for people on foot and bike.

1. How To Make 4- and 5-lane Suburban Roads More Complete?

Four- and five-lane arterials are pervasive across the entire region and often provide the backbone of regional transit services, connect communities across major barriers (e.g. railways, rivers, and highways), and provide access to the majority of the destinations for every aspect of our daily lives. However, they feature many of the most dangerous design elements identified in ***Safe Streets*** and are critical priorities for safety and mobility improvements.

2. Bikes on Suburban Arterials: On-street or Off-street?

Selecting the appropriate facility to serve people on bikes is a particular challenge on suburban arterials. The workbook provides guidance on how to choose between on- and off-street options, and identifies several planning and design factors to address before making a decision.

3. Where To Put a Crosswalk?

Safe pedestrian crossings are an essential element of Complete Streets. The workbook reviews a wide variety of potential crosswalk locations and types to choose from, depending on context, demand, and risk.

4. How Do Complete Streets Support Regional Transit?

Transit trips typically start and finish on foot or bike and yet many suburban arterials, where transit services are located, have no sidewalks, bike facilities, or crosswalks to access the transit stops. The workbook highlights the problems this can cause, and identifies several solutions to increase safety around transit stops.

How to Make 4- and 5-lane Suburban Roads More Complete?

Four-lane Arterial Road

Four-lane arterial streets are among the most common types of street in the Atlanta region, particularly in urban and suburban contexts. These through streets connect communities, carry a lot of local traffic, and are often transit corridors. Four-lane arterials are frequently congested in peak hours because of busy intersections, but speeding and weaving are significant safety issues the rest of the time.

In more urban areas, where speed limits are typically 35 MPH, four-lane arterials provide access to a myriad of destinations. They may have sidewalks (at least on one side), but are often constrained by immediately-adjacent property lines. Many residential or business parcels are not connected, limiting travel between adjacent destinations and pushing more traffic onto the roadway.

In more recently developed suburban areas, where speed limits are typically 45 MPH, there are frequently no sidewalks and the adjacent land uses are larger strip retail and commercial lots with driveways and parking lots that encourage high-speed turning movements. If there are sidewalks, they often lack curb cuts and crossings that reflect best practices.

The priority given to motor vehicles on these roadways typically means there is no space for pedestrian and bicycle infrastructure; few signalized crossings are provided, even at intersections and bus stops; vehicle speeds discourage stopping and yielding for pedestrians, and speeds are high enough that crashes involving vulnerable road users are likely to result in death or serious injury.

Crash Risk Factors Present:

- Vehicle speeds of 35 MPH and over
- Limited bicycle and pedestrian infrastructure
- Missing or inadequate crosswalks, especially at transit stops
- Frequent turning vehicles at driveways and intersections

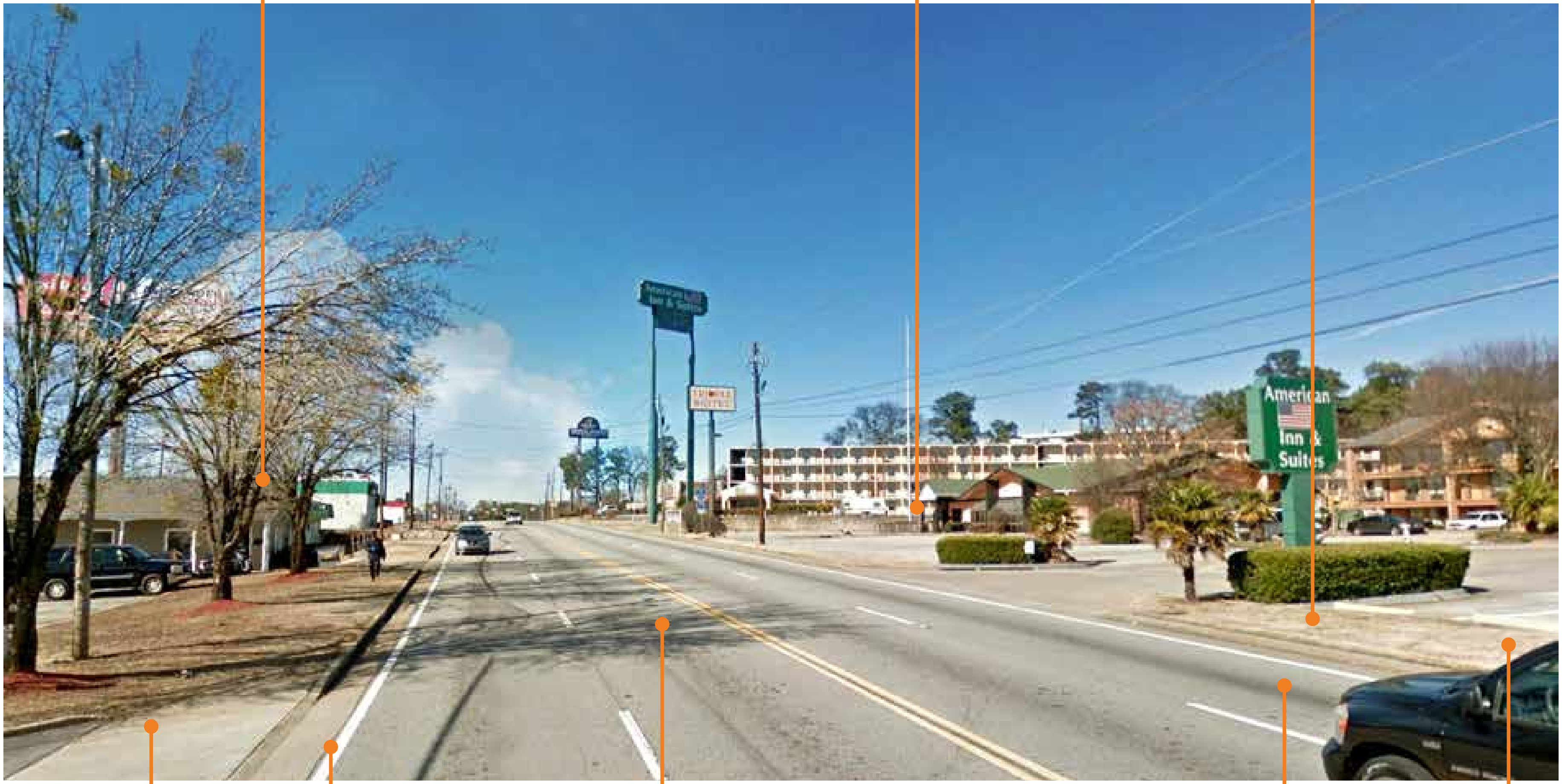
Area examples

- Northside Drive, Atlanta, GA
- Church Street, Decatur, GA
- South Cobb Drive, Cobb County, GA
- Covington Highway, Avondale Estates and DeKalb County, GA

Four-Lane Existing Conditions

NO CONNECTIONS BETWEEN BUILDINGS, PARKING LOTS

FEW OR NO BUS STOPS OR SHELTERS



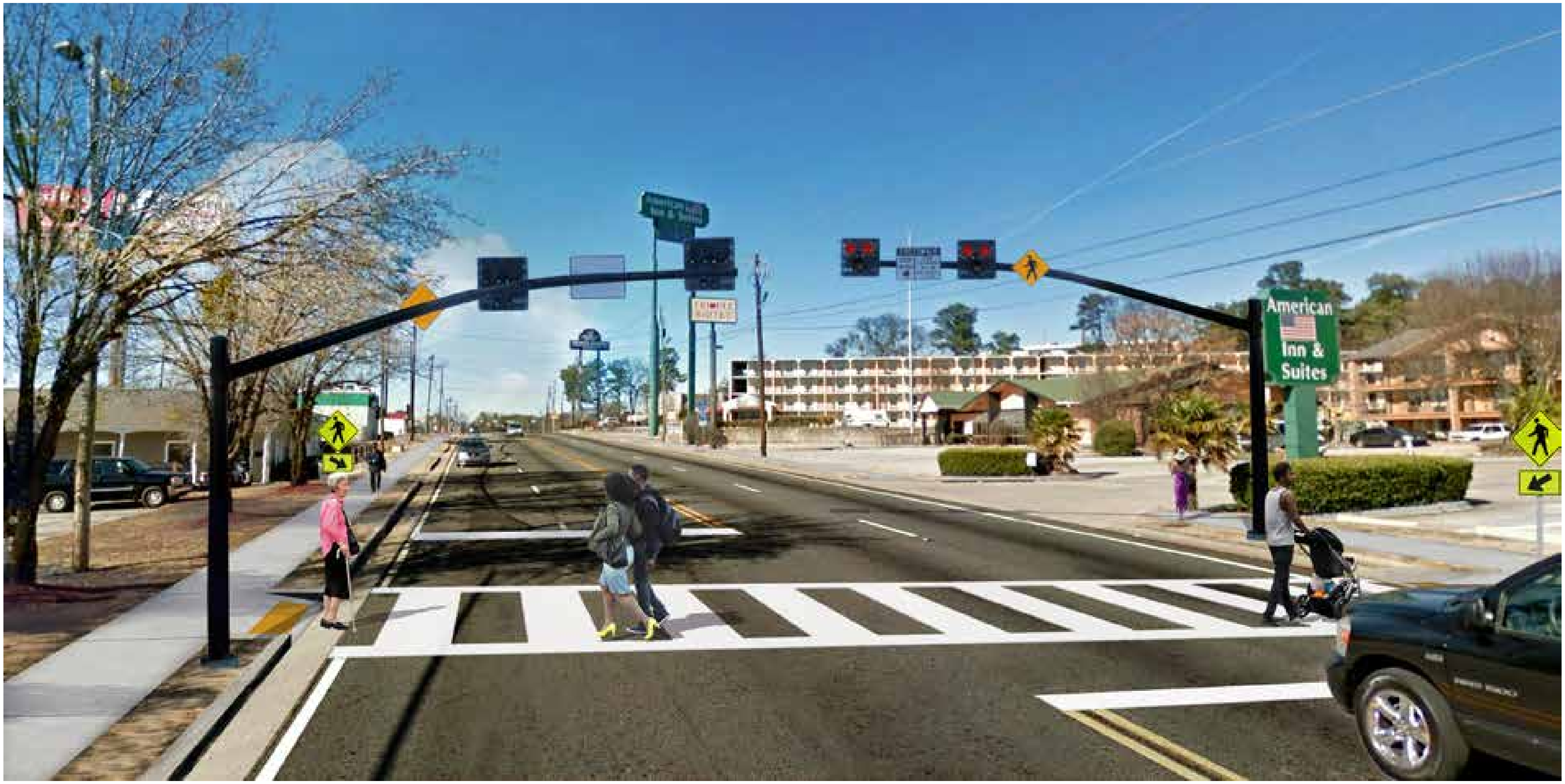
NO PEDESTRIAN REFUGE/CROSSING ISLANDS

NO BICYCLE FACILITIES

LACK OF PEDESTRIAN AMENITIES INCLUDING SIDEWALKS, CROSSWALKS, AND PEDESTRIAN-SCALED LIGHTING

Four-Lane Short-Term Solution: Deliver Dignity, Comfort, and Safety

At a minimum, four-lane arterial streets should have a sidewalk on both sides and safe crosswalks at frequent intervals along the length of the corridor. Signalized crossings should be provided at all major intersections; mid-block Pedestrian Hybrid Beacon crossings may be appropriate where signalized intersections are spaced widely apart (e.g. more than a quarter of a mile) .



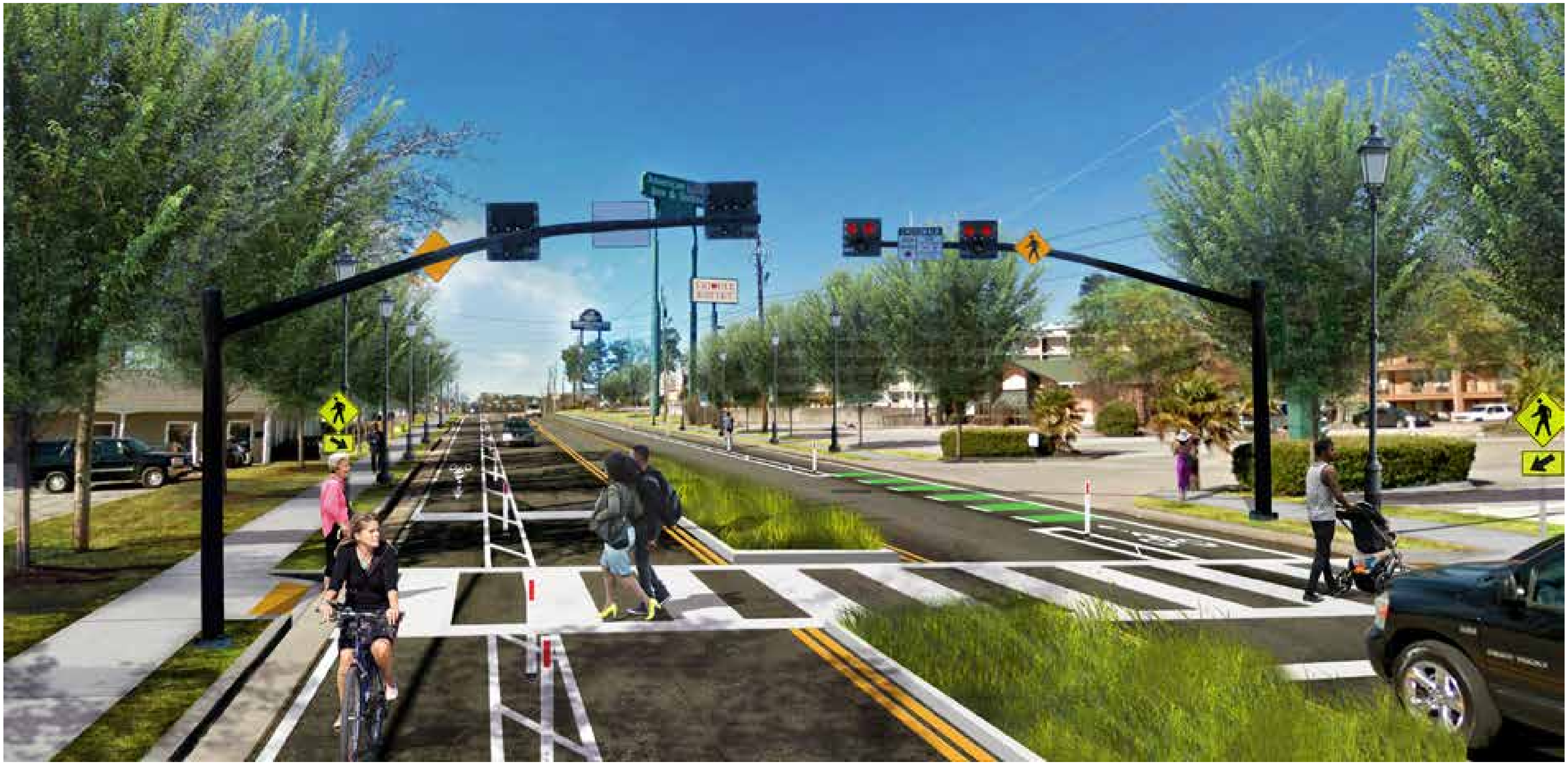
SIDEWALKS provide safe places for people traveling by foot and by wheelchair. GDOT recommends a minimum of 5-foot-wide sidewalks, while NACTO recommends a minimum of 6 feet. AASHTO also recommends a minimum 5-6ft buffer between the sidewalk and travel lane. However, the land use context, transit, and pedestrian activity should always be considered.

CROSSWALKS provide an indication to pedestrians on where they should cross the street. They also provide motorists with an indication of where pedestrians are likely to be.

PEDESTRIAN HYBRID BEACON (PHB) is a pedestrian-activated signal that alerts drivers to pedestrians crossing the road.

Four-Lane Mid-Term Solution: Safety, Comfort, and Access for All

Many four lane roads can be reduced to three lanes – with a center turn lane and bicycle lanes and/or wide sidewalks – without affecting motor vehicle capacity (Rule of thumb: 4 lane roads with 20,000 ADT or less can very often be reduced to 3 lanes). This change makes the street safer for all by reducing vehicle speeds and speed differentials; eliminating weaving and lane changing; protecting turning traffic from rear-end collisions; providing a crossing refuge for pedestrians; and adding bike infrastructure. Lighting and landscaping can also contribute to a more walkable environment.



SEPARATED BIKE LANES create a safer space for bicyclists of all ages and abilities. Implementation of a bicycle facility should be conducted as an overall bicycle master plan.

STREET LEVEL LIGHTING improves visibility for all users along a corridor, but is particularly effective in high-trafficked areas.

MEDIAN AND PEDESTRIAN CROSSING ISLANDS reduce head-on motor vehicle collisions and provide a protected refuge at intersections and midblock crossings for pedestrians. They narrow the motorist's field of vision and reduce vehicle speeds.

Five-lane Arterial Road

Five-lane arterials – two travel lanes in each direction with a center turn lane – are very common throughout the Atlanta region. They are important corridors for connecting communities, providing access to adjacent properties, providing transit services, and carrying high volumes of traffic throughout the day. They are often the only through streets that cross major barriers such as Interstates, railroads, rivers and stream valleys, and major developments.

Speed limits on these roadways are typically 45 MPH and up; they rarely have sidewalks or any pedestrian and bicycle infrastructure. Signalized pedestrian crossings are rare, even at major intersections, even though these roads may serve regional and local transit routes. Adjacent parcels tend to be connected only to the road and not to adjacent properties or side streets. Many residential, commercial, retail land uses are comprised of campus-style developments with large expanses of fully subsidized parking.

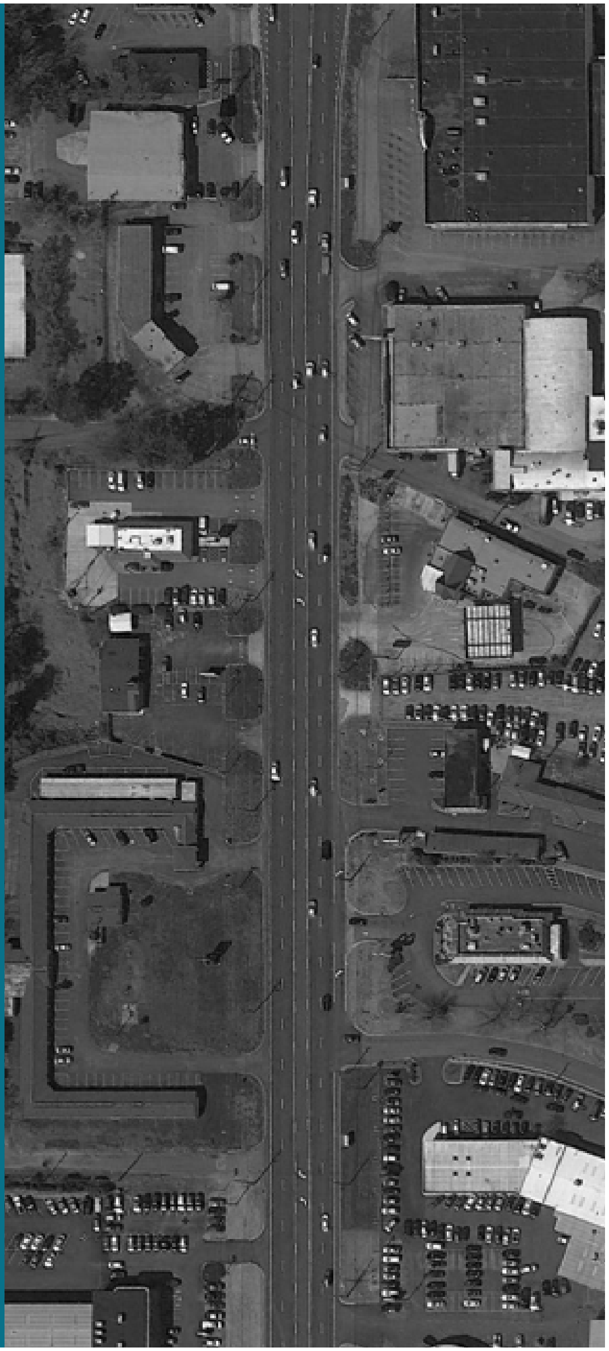
Major intersections and frequent driveways are designed for high-speed turning and the presence of pedestrians and bicyclists is not anticipated or accommodated. However, people still walk and bike on these corridors to access jobs, goods, and services. In addition, they are often the only through-streets available. The absence of sidewalks and bike infrastructure increases the likelihood that pedestrian and bicyclists will walk in the road, cross mid-block, and/or ride against traffic – all of which are known contributors to pedestrian and bicyclists crashes with motor vehicles.

Crash Risk Factors Present

- High vehicle speeds for through and turning traffic
- No sidewalks or safe crossings for pedestrians
- Long distances between signalized intersections
- No pedestrian-scale lighting
- No bicycling infrastructure

Area Examples

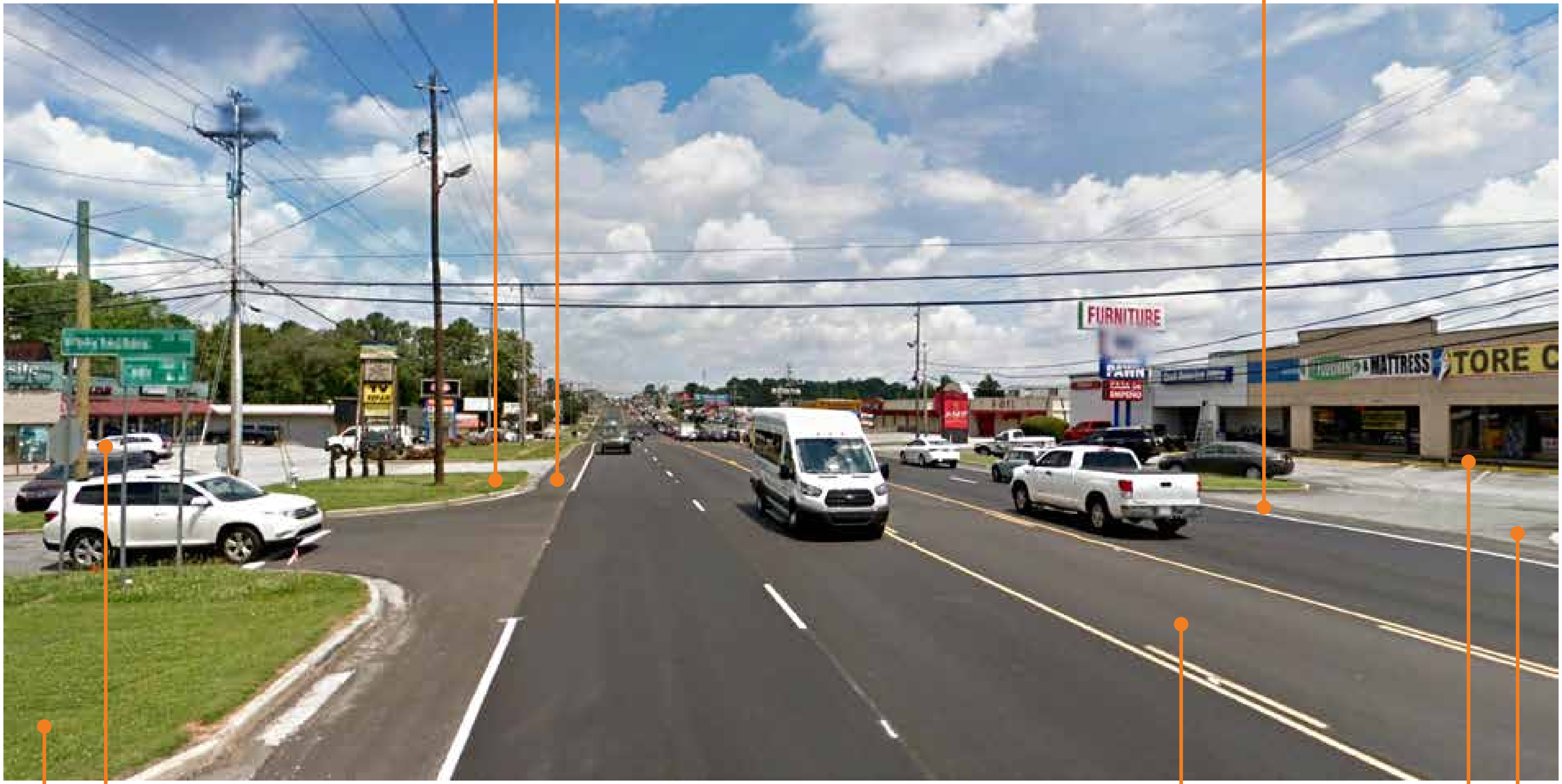
- Cobb Parkway, Cobb County, GA
- Moreland Avenue, Atlanta, GA



Five-Lane Existing Conditions

FEW OR NO BUS STOPS OR SHELTERS

NO BICYCLE FACILITIES



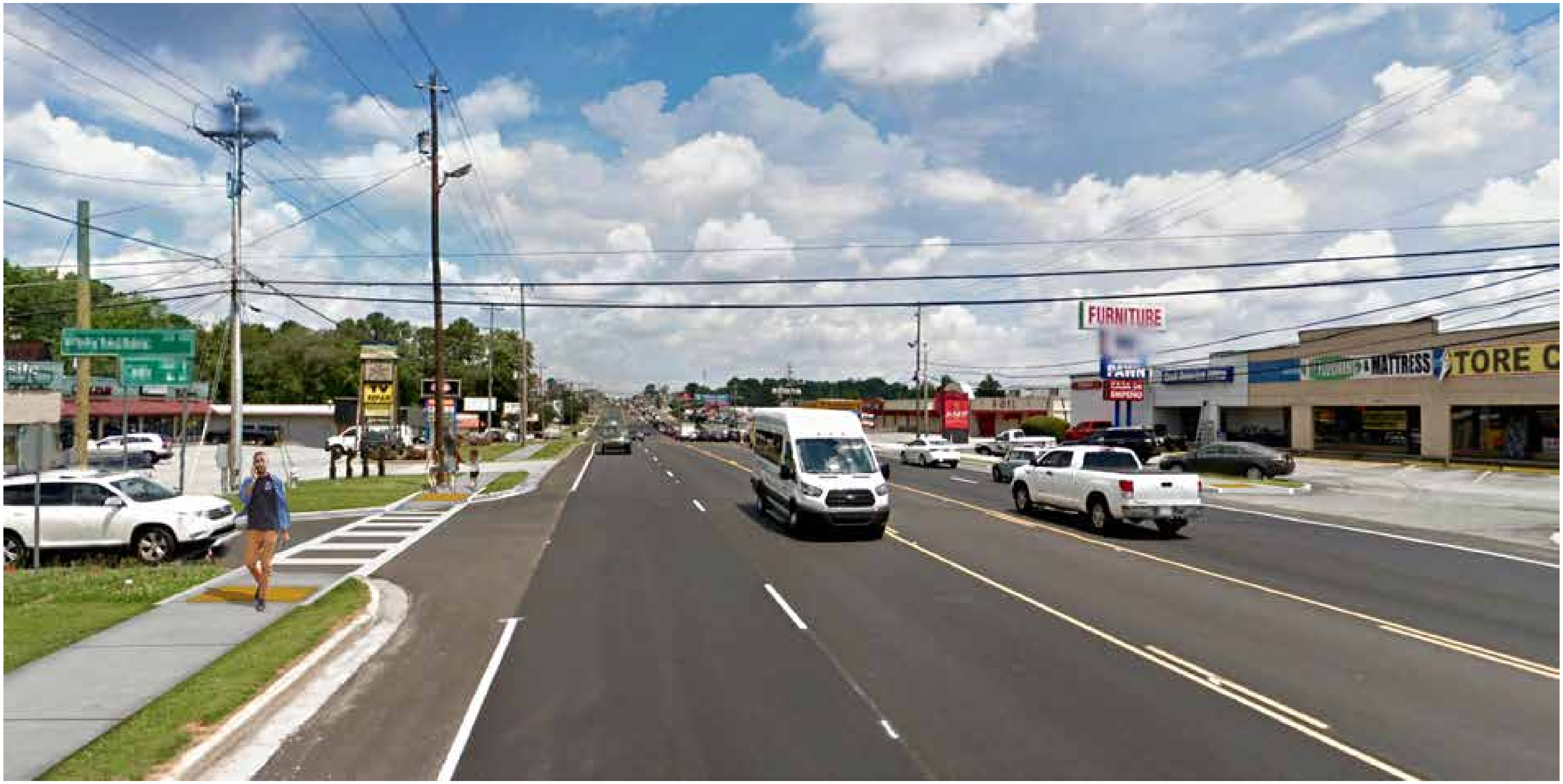
NO PEDESTRIAN REFUGE/CROSSING ISLANDS

AUTO-DEPENDENT LAND USES

LACK OF PEDESTRIAN AMENITIES INCLUDING SIDEWALKS, CROSSWALKS, PEDESTRIAN-SCALED LIGHTING, AND STREET TREES.

Five-Lane Short-Term Solution: Deliver Dignity, Comfort, and Safety

The foundation of a complete street is a safe and comfortable place for people to travel whatever their chosen mode. A continuous, accessible sidewalk on both sides of five-lane suburban arterials is essential for a basic level of safety and access. The sidewalk should be highly visible as it crosses side streets and driveways. Where possible, curb radii should be tightened to reduce vehicle turning speeds, and refuge islands should be provided in the center turn lane where there are bus stops.



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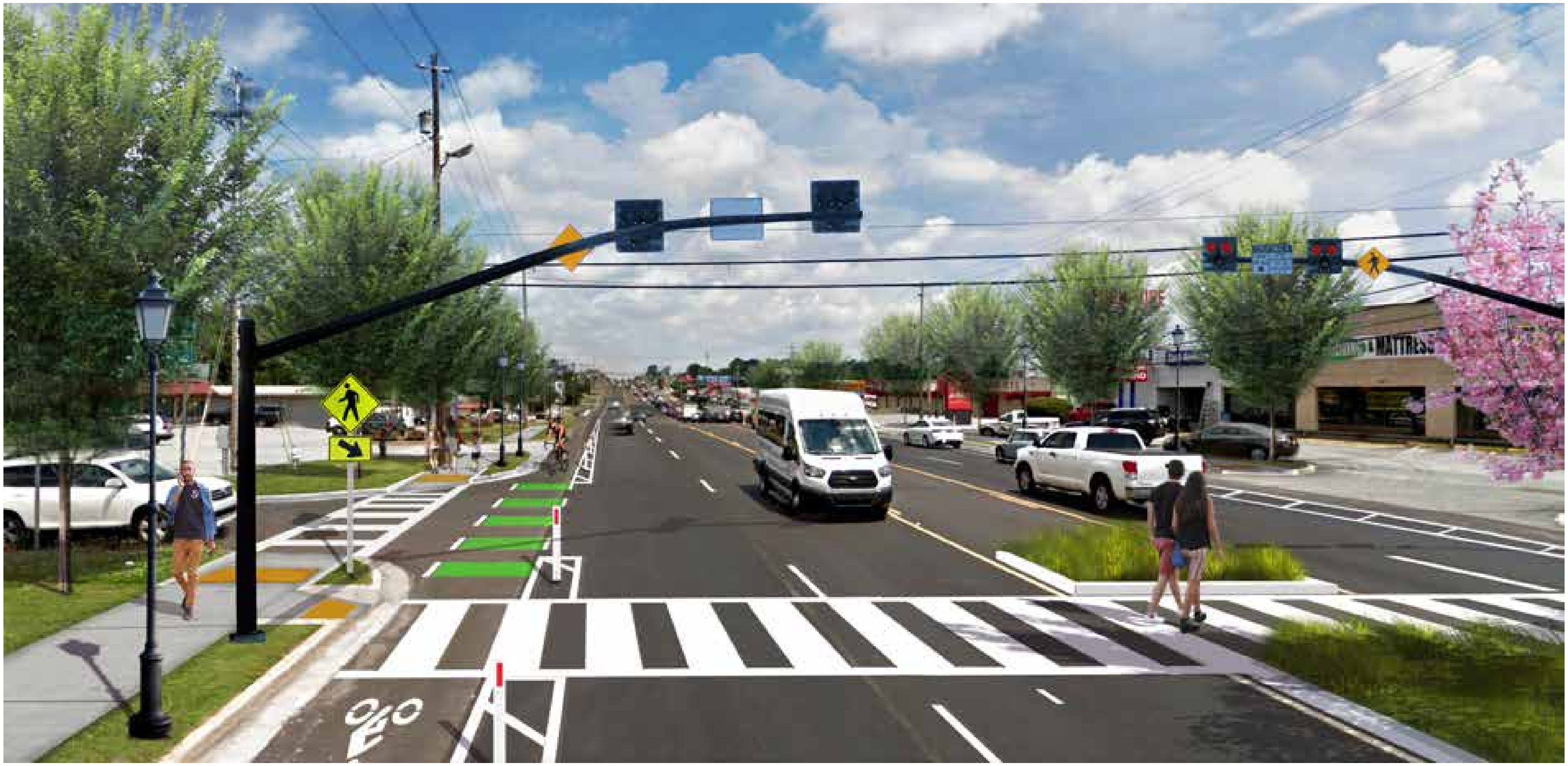
CROSSWALKS provide an indication to pedestrians on where they should cross the street. They also provide motorists with an indication of where pedestrians are likely to be.

Five-Lane Mid-Term Solution: Safety, Comfort, and Access for All

More substantial changes may be possible when roadways are reconstructed or adjacent land uses change. Reducing lane widths can often make room for on-road bicycling infrastructure while also reducing excessive speeds; sidewalks, crosswalks and pedestrian-scale lighting can transform the walking experience. Moving the curb makes wider sidewalks and raised cycle tracks an option. Crosswalks should be signalized if motor vehicle speeds exceed 25mph in this location.



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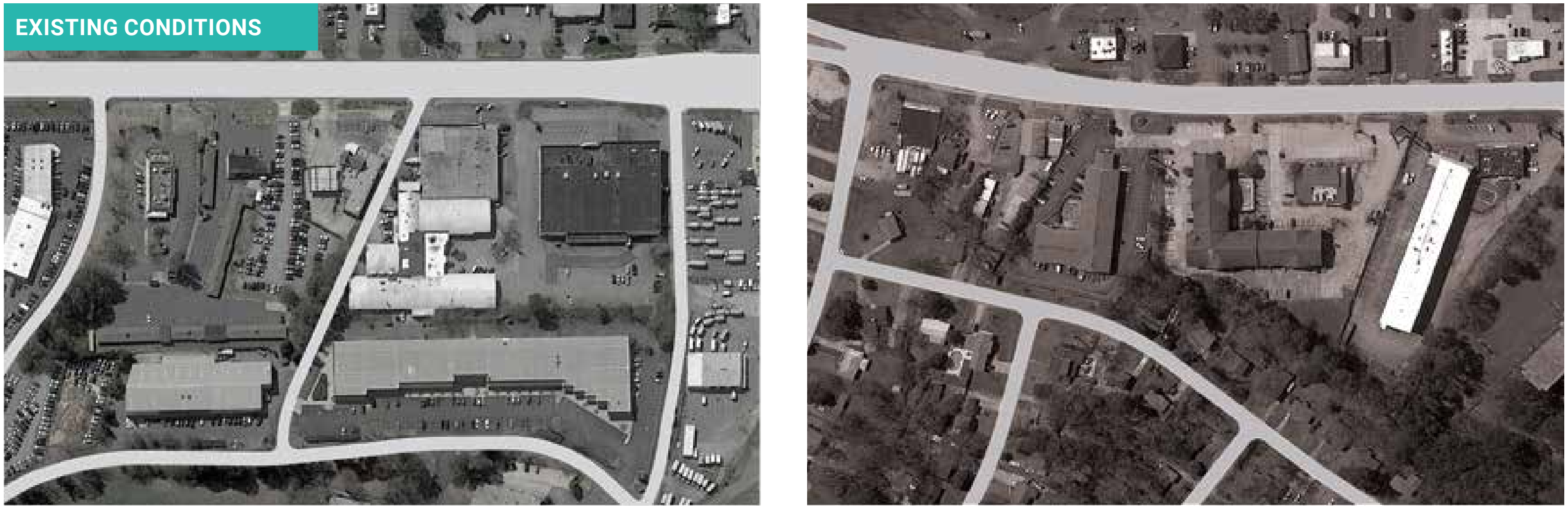
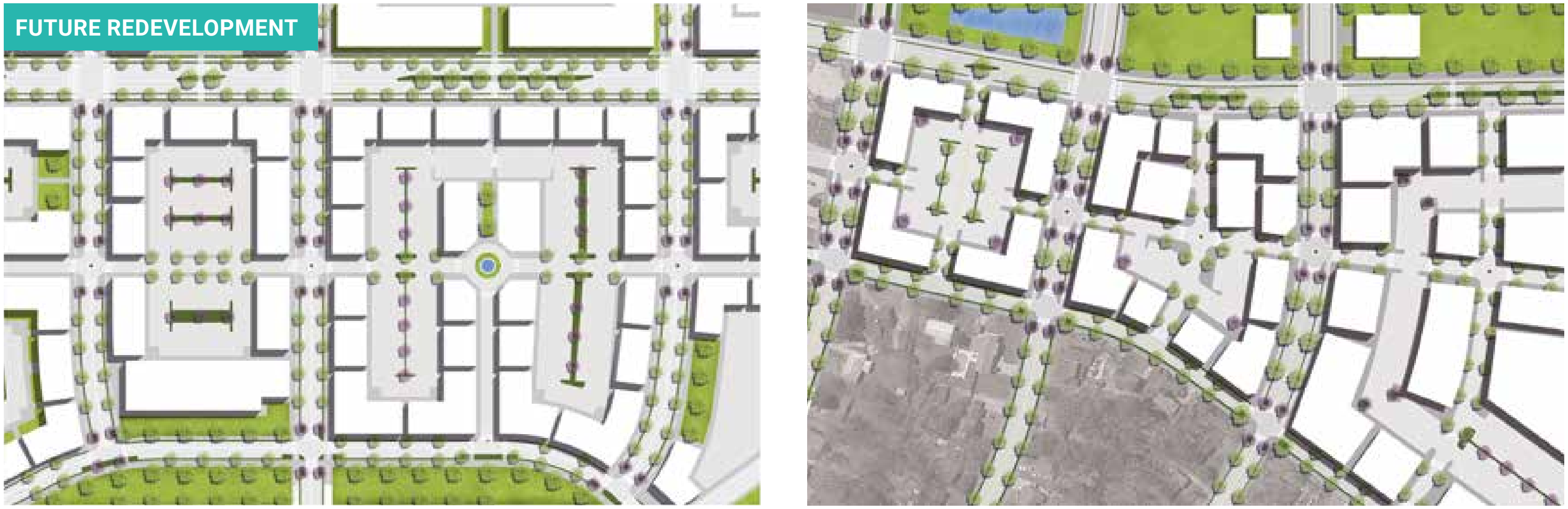
STREET LEVEL LIGHTING improves visibility for all users along a corridor, but is particularly effective in high-trafficked areas.

MEDIAN AND PEDESTRIAN CROSSING ISLANDS reduce head-on motor vehicle collisions and provide a protected refuge at intersections and midblock crossings for pedestrians. They narrow the motorist's field of vision and reduce vehicle speeds.

Long-Term: Redevelopment and Land Use Changes

Increasing density in suburban areas creates opportunities for more connected and safer Complete Streets. New urban centers or land uses patterns may emerge through changing market demands or be retrofitted in existing areas where appropriate. Adding new streets and creating street grids provides more connections and will enhance access and travel choices, thereby increasing the people-carrying capacity of the overall network.


EXISTING CONDITIONS


FUTURE REDEVELOPMENT

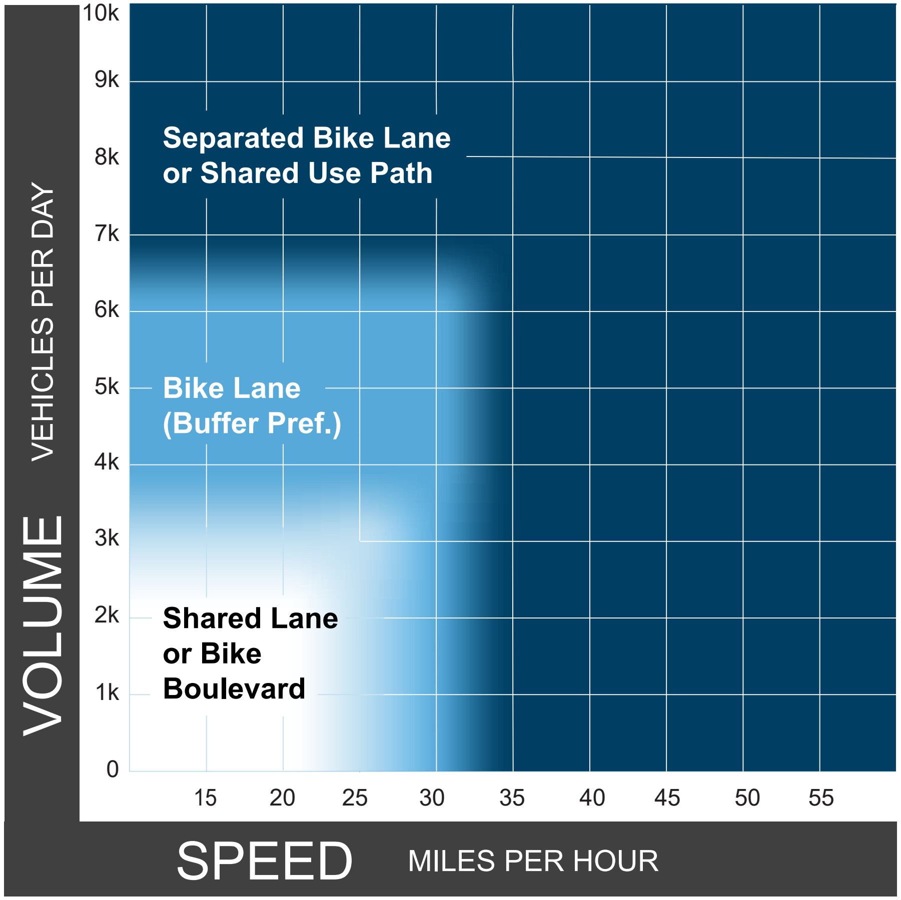
Bikes on Suburban Arterials: On-street or Off-street?

One of the most challenging questions planners and designers face is how to accommodate people riding bikes on suburban arterial roadways.

Cyclists should not be expected to share lanes with cars, buses, and trucks traveling over 35 MPH. Sidewalks that are narrow and only on one-side of the road are likely dangerous for people on bikes -- national crash data identifies "riding on the sidewalk" and "wrong way riding" (as necessary on one-sided facilities) as significant contributing causes to bicyclist crashes. Sidepaths (shared-use paths adjacent to the roadway) have a poor reputation amongst bicyclists when they are designed as little more than glorified sidewalks.

Given the challenges of balancing risks and demand, recent advances in bike facility design enable a more pragmatic approach to selecting appropriate bicycle facilities on suburban arterial streets. Basic bike lanes may suffice in low-speed locations or protected lanes to separate bicyclists from higher speeds. When current or projected demand does not warrant the cost of fully-separated bike lanes, shared-use paths may be more appropriate.

Road characteristics, land use context, high-priority destinations, and anticipated or target riders should be examined to determine whether on-street lanes or off-street paths are most appropriate.[i, ii]



Notes

- Chart assumes operating speeds are similar to posted speeds. If they differ, use operating speed rather than posted speed.
- Advisory bike lanes may be an option where traffic volume is <3K ADT.

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i FHWA. *Bikeway Selection Guide*. (2019). Retrieved September 2019 from: https://safety.fhwa.dot.gov/ped_bike/tools_solve/docs/fhwasa18077.pdf

ii Michigan Department of Transportation. "Sidepath Application Criteria Development for Bicycle Use". (2018). Retrieved September 2019 from: https://www.michigan.gov/documents/mdot/SPR-1675_Sidepath_Application_Criteria_Development_for_Bicycle_Use_Final_Report_2018-07-09_628346_7.pdf

Planning factors include:

- **Context.** Sidepaths are generally not appropriate in dense urban areas and should be used primarily in suburban or rural locations with moderate to high pedestrian activity.
- **Demand.** Higher anticipated bicycle and/or pedestrian use indicates a need for a separated bike lane rather than a shared use path or sidepath. AASHTO recommends that pedestrians and bicyclists be separated from each other when pedestrians are more than 30% of path users, or where there are more than 300 path users an hour in the peak hour.
- **Interruptions.** The lower the number of driveways, intersections, and other interruptions the more likely it is that a sidepath will be appropriate, especially if the path will be two-way on one side of the road.
- **Connectivity.** Consistency with connecting infrastructure can help determine the best design solution. Connecting trails along on a suburban roadway might best be accomplished with a two-way sidepath. Continuing an on-street bikeway network indicates an on-street, one-way separated design solution.

Design decisions should include:

- **One-way or two?** Two-way use requires greater width (min 10ft); more careful design at intersections; and a safe, intuitive transition back to one-way, on-street operation.
- **Width.** Basic design principles require a minimum of 5 feet for one-way and 10ft for two-way bicycle-only operation; more sidepath width may be necessary if pedestrian use is frequent.
- **Separation.** Separation from traffic is the primary benefit of a sidepath and a separated bike lane. The separation needs to be a minimum of 5 feet or be achieved with a barrier or curb.
- **Intersections.** Every driveway and cross-street must be treated as an intersection with appropriate crosswalks, signals, warnings and markings to eliminate potential conflicts and encourage motorist yielding.
- **Transitions.** Whatever facility is chosen should be easy and safe to access from the existing street or trail network – i.e. there should be no sudden “End” or “Dismount” signs at point of transition.

Sidepaths on two-lane, four-lane and four-lane divided highways in Northwest Arkansas.

? Where To Put a Crosswalk?

Safe pedestrian crossings are an essential element of Complete Streets. Many streets in the Atlanta region, especially outside the urban core and town centers, provide too few safe places to cross street. According to FHWA:

"Pedestrians have a right to cross roads safely, and planners and engineers have a professional responsibility to plan, design, and install safe and convenient crossing facilities."[iii]

What Factors Influence Street Crossings?

- **Legality:** Crosswalks exist at nearly every intersection in Georgia whether they are marked or not.[iv] Crossing the street outside of an intersection is legal in most places (as long as pedestrians yield to vehicles) except "between adjacent intersections at which traffic-control signals are in operation."[v]
- **Destinations:** People cross where they need to and often in the most direct line possible. Crosswalks should be closely spaced in dense urban areas or strategically located between destinations elsewhere, including transit stops.
- **Crossing Distance:** The width of the street influences how long it takes to cross. Longer distances need greater time, more protection, and higher visibility. Urban areas should reduce lanes to minimize crossing distances.

Should Crosswalks Be Marked?

Yes. Crosswalks should be marked at all intersections, especially where pedestrians are expected or desired to cross the street. The Georgia DOT's adopted crosswalk marking pattern is highly visible, lower maintenance than alternate styles or materials, and should be the default pattern for all locations. In the urban core, urban areas, and town centers, therefore, most intersections should have marked crosswalks.

	Street Connectivity & Walkability Measures		
Character Areas	**Intersection Density per Sq Mi**	**Block Perimeters**	**Block Length**
Walkable areas	Greater than 100	2500-3000 ft (or less)	300-600 ft
Suburban corridors	Less than 100	Greater than 3000 ft	Greater than 600 ft

A long but accessible, marked, and signalized intersection.

[iii] US DOT, Federal Highway Administration. *Safety Effects of Marked Versus Unmarked Crosswalks at Uncontrolled Locations.* (2005). Retrieved December 2018 from: https://www.fhwa.dot.gov/publications/research/safety/04100/01.cfm

[iv] Georgia Code: **§ 40-1-1.(10) Definition of a Crosswalk:** "Crosswalk" means (A) That part of a roadway at an intersection included within the connections of the lateral lines of the sidewalks on opposite sides of the highway measured from the curbs or in the absence of curbs, from the edges of the traversable roadway; or (B) Any portion of a roadway at an intersection or elsewhere distinctly indicated for pedestrian crossing by lines or other markings on the surface.

[v] https://www.gahighwaysafety.org/campaigns/pedestrian-safety/pedestrian-safety/what-the-ga-codes-says-about-pedestrians/

Is marking crosswalks enough?

It depends. Determining appropriate crossing treatments requires careful consideration of road width, vehicle speeds and volume of vehicles and pedestrians. The higher the speed and volume of traffic, the greater the need to mark crosswalks and use signals to control traffic. In urban areas and town centers with a tight grid network of busy streets, crosswalks should be marked on all legs of most intersections. On lower volume side streets outside the immediate urban core, markings alone will sometimes be sufficient.

On suburban arterial roadways, every major intersection should have marked and signalized crosswalks to enable pedestrians to safely cross each roadway. Crossings of side streets and large commercial driveways should always be marked as crosswalks, whether there are signals or not.

It is not acceptable to avoid marking a crosswalk due to safety concerns. Where crosswalk markings are insufficient, additional safety measures should be used.

Locations where crosswalk markings alone are insufficient to address pedestrian safety include any street where any of the following conditions exist:

- The roadway has four or more lanes of travel *without* a raised median or pedestrian crossing island and an ADT of 12,000 vehicles per day or greater.
- The roadway has four or more lanes of travel *with* a raised median or pedestrian refuge island and an ADT of 15,000 vehicles per day or greater.
- The speed limit exceeds 35 MPH[vi]

Rectangular Rapid Flashing Beacons might be appropriate at lower speeds (35 MPH or lower) and on two-lane roads (or on three-lane roads with a median island to provide one RRFB per lane); Pedestrian Hybrid Beacons are recommended for higher-speed, multi-lane conditions. Full signals may be warranted at higher volume locations. Medians or pedestrian refuge islands are an essential element of safe pedestrian crossings on all multi-lane roads.[vii]

Marked, raised crosswalk.

Marked crosswalk with RRFB and refuge island.

Marked mid-block crosswalk with Pedestrian Hybrid Beacon

[vi] NCHRP Report 562, *Improving Pedestrian Safety at Unsignalized Intersections*

[vii] GDOT Pedestrian and Streetscape Guide

Where Should Crosswalks Be Located On Suburban Arterials?

Installing a marked and controlled intersection on a suburban arterial is a significant decision affecting safety and mobility[viii]. High-visibility crossings help direct pedestrians to safer locations to cross, help alert motorists to expect pedestrians, fill missing links in a disconnected street network, and reinforce desire lines. Crossings should be considered for both specific locations and as elements of a bigger community walking network.

Ideally, crossing opportunities should be provided every 400-600 feet or prioritized at specific locations along suburban arterials:

- Major intersections
- Bus stops and transit stations
- Major desire lines such as the entrance to a school, park, shops, or library
- High pedestrian crash locations
- Trail intersections and access points

These locations may be at intersections or between intersections (mid-block) depending on the land use context and observed pedestrian behavior. At specific high-demand locations such as bus stops, crosswalks should be within 150ft of the activity generator. The overall goal is to provide a complete pedestrian system that is safe, direct, intuitive, and accessible.

What About Mid-Block Crossings?

Mid-block crossings are marked pedestrian crossings located between roadway intersections. They increase connectivity and shorten walking distances.They do not have to be precisely in the mid-point, but if they are signalized they should be at least 100ft from the nearest intersection that has a stop sign or signal.

In the context of four- and five-lane suburban roadways, mid-block crossings are appropriate in places where pedestrian activity can be expected (e.g. bus stops) and there are long distances between other signalized intersection. Traffic speed and volume on multi-lane suburban roadways (with speeds of 35 MPH and above) means that mid-block crossings should be assessed for warrants for Pedestrian Hybrid Beacons, full pedestrian signals, medians, or refuge islands.

[viii] FHWA Field Guide for Selecting Countermeasures at Uncontrolled Pedestrian Crossing Locations

How do Complete Streets Support Regional Transit?

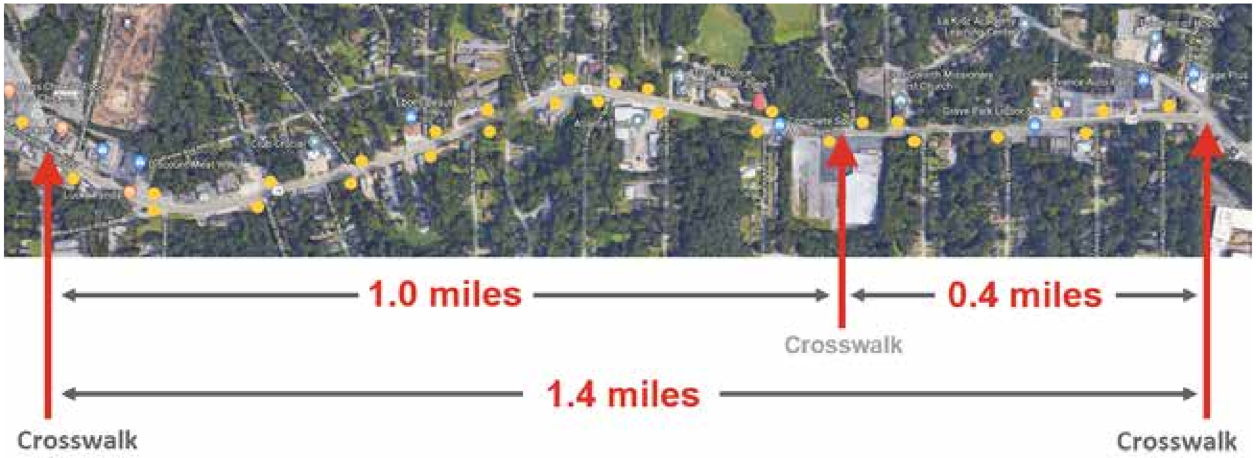
Across metropolitan Atlanta, transit service is a key resource in expanding mobility options and serving a full range of travel needs while reducing reliance on driving. Nearly three quarters of transit trips in metro Atlanta begin with a walk to a bus stop, train station, or park-and-ride lot.

- Most transit trips include walking, making sidewalks a critical piece of transit infrastructure.
- Bus access almost always involves crossing a street on foot.
- Walking, bicycling, and micromobility expand the service area and customer base of transit routes.
- Investments in pedestrian infrastructure can reduce demands on paratransit operators.
- Complete Street designs can provide dedicated spaces within roadways that improve transit operations.

Improving walking, bicycling, and micromobility conditions along the streets used to access transit stops and stations is key to making transit more attractive and convenient for more people. Complete Streets components should be used to ensure comfortable and convenient access to transit stops and stations:

- Make transit routes priorities for Complete Street investments
- Ensure every sidewalk and bus stop is ADA-compliant.
- Create mid-block crossings, especially with high-visibility features: RRFBs, warning beacons, median islands, and other safety safety measures.
- Consolidate bus stops (within reason) to balance higher use and convenient spacing.
- Manage driveways and other curb cuts.
- Make stations easy and convenient to access.

How far would you walk for a crosswalk?



Design Information and Resources

This 1.4 mile stretch of suburban road has more than a dozen bus stops (shown by the yellow dots) but only one marked crosswalk between major intersections. There are no sidewalks. Installing a crosswalk at each bus stop or local intersection would meet the recommendation on page 34.

More detailed design guidance and information can be found in the PEDS' Safe Routes to Transit guide.

Design & Planning Resources

Georgia Department of Transportation (GDOT)

- GDOT (2003). "Pedestrian and Streetscape Guide". [Currently being updated]
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- GDOT. (2018). "Design Policy Manual, Chapter 9 Complete Streets Design Policy".
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National

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- King, Michael, et al. (2014). "To Cross or Not to Cross: Examining the Practice of Determining Crosswalks". ITE Journal.

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Conclusion: It is Time to Start Building Complete Streets

Complete Streets are an essential tool to help solve regional safety, access, and mobility challenges. The Atlanta metropolitan area must break the vicious cycle of road widening, development, sprawl, and congestion by embracing walkable centers, advancing regional transit, and building safe, comfortable, and convenient streets that improve the quality of life for everyone. Building Complete Streets in walkable communities will enable sustainable future growth and economic activity.

Now is the time to start prioritizing Complete Streets in order to:

Prevent Further Problems

The first step in achieving Complete Streets is to stop building and widening roads with dangerous designs that discourage walking, biking and transit.

- **Avoid roadway widenings**. Congestion should be addressed through new roadway connections, roadway pricing, multimodal corridors, diverse travel options, and public transportation.
- **Eliminate dangerous roadway designs from projects.** Planned and programmed projects should be modified to add sidewalks, crosswalks, bicycling facilities, and traffic calming to reduce auto speeds.
- **Align funding to desired outcomes.** Assess capital project lists determine if programmed funds provide multimodal alternatives, shorten trips, support public transportation, and/or reduce vehicle miles traveled. Eliminate projects that will not support these outcomes.
- **Coordinate efforts**. Complete Streets principles should be routine at the local, regional, and state levels. Agencies and communities should coordinate in visioning, planning, funding, designing, and building Complete Streets.
- **Use land frugally.** Land is a limited, valuable resource that should be conserved where possible and maximized where developed. Compact urban communities and rural conservation balance a livable region. Investments in streets and roads determine a regional pattern that will persist for decades or centuries.

Address Current Issues

Many changes to both land use and transportation will take years if not decades to implement. However, current known issues should be addressed immediately.

- **Reduce transportation risk.** Identify high-crash locations and high-risk corridors for immediate retrofitting with proven safety measures. Small locations may warrant spot treatments, such as crossing islands or high-visibility crossings, while corridors or area-wide issues may warrant systemic treatments, such as medians or traffic calming. Safety plans should be developed with a community-scale strategy.
- **Slow speeds.** Conduct studies to determine where speeds can be slowed immediately. Adopt city-wide slower speed limits: 25 MPH for neighborhood streets and 35 MPH for arterial roads. Establish slower design speeds for all future projects.
- **Be opportunistic with current funding.** Every capital and resurfacing project is an opportunity to make a street safer and more comfortable for people on foot and bike. Lane and road diets can redistribute space in favor of bicyclists and pedestrians, simultaneously calming traffic without necessarily increasing congestion or delay. Systemic safety measures can be cost-effective approaches that take advantage of ongoing investments in community infrastructure and benefit all road users.

Anticipate Future Needs

A balanced perspective is important to determine changing needs and equitable outcomes. Data can provide clarity, but listening and faciliatation are needed to ensure communities have meaningful input into the decision-making process.

- **Establish a community vision.** Base street designs on community visions and goals. Safe routes to schools and transit, future development patterns, and a modal hierarchy should all be determined through a community vision and advanced via Complete Street projects.
- **Perform quantitative analysis.** Use data and analysis to highlight priorties for Complete Street projects. Inventory community facilities and identify gaps or deficiencies. Calculate Levels of Traffic Stress (LTS) and Latent Demand Scores (LDS) for networks and major corridors. Use priority scores – either high demand or low quality – to identify gaps within the multimodal street network.
- **Embrace qualitative input.** Listen to the community. Residents' concerns and the community's vision should balance professional expertise, inform plans, and validate (or challenge) quantitative assessments. Roadway Safety Audits (RSA), Walkability or Bikeability Audits, community visualizations, design charrettes, Health Impact Assessments (HIA), and meaningful public engagement help determine equitable strategies for an area.

Ensure Better Outcomes

New projects – both transportation and land development – should be focused around supporting communities and improving regional corridors, providing multimodal options, enabling shorter trips, and reducing vehicle miles traveled.

- **Align community policies to support Complete Streets.** Use plans and policies to support better land use and transportation decisions: Vision Zero strategies; Complete Streets ordinances; master street plans, compact community zoning, form-based codes, and development ordinances; Context Sensitive Solutions (CSS) and multi-modal design guidelines; and market-oriented parking reform.
- **Increase network connectivity.** Provide new multi-modal roads that help complete the road network and reduce the need for increasingly wider roads. Use new roads to help improve transit and active transportation.
- **Support more transit.** Provide local transit and connect to regional transit. Aggressively pursue new sources of transit operating revenue.
- **Build compact, walkable communities.** Build within existing communities and promote conservation to limit future greenfield expansion. Focus new development in urban centers or denser suburban districts. Plan every new development around connected streets with multimodal facilities. Coordinate transportation investments with both existing and future land uses.

ATLANTA REGIONAL COMMISSION

229 PEACHTREE ST NE, STE 100 | ATLANTA, GEORGIA 30303
404.463.3100
ATLANTAREGIONAL.COM