Huntsville MPO Bikeway Plan

Huntsville, Alabama

FINAL

HUNTSVILLE AREA
METROPOLITAN PLANNING ORGANIZATION

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TABLE OF CONTENTS

Introduction

Bicycling and walking are viable transportation alternatives throughout many communities within the North Alabama region. Whether for commute or recreational enjoyment, the Huntsville Area Metropolitan Planning Organization (MPO) understands the importance of these activities to one's health, safety and general welfare. Therefore, the Huntsville Area MPO is committed to improving bicycle and pedestrian conditions throughout the region and has adopted bicycle and pedestrian plans aimed at increasing the awareness and benefits of non-motorized modes of travel.

Bikeways improve the quality of life in the community. A bikeable community significantly impacts the economy by attracting the growing number of cycling tourists, retirees and sporting events. Cycling also helps reduce parking congestion, motorized vehicle congestion and air pollution. Cycling is often considered a family activity and many young children have been given bicycles at an early age. Other older and adult bicyclists do so for the health benefits or sheer enjoyment of the activity. Again, there are those who choose bicycling as a way to commute to a place of employment, school, or a shopping destination. Regardless of purpose, or ultimate destination, cycling has been determined by FHWA as a form or mode of transportation that is entitled to a place on the American Roadway (within certain limits).

A Bicycle Pedestrian Plan seeks to provide links and resources within the larger transportation network, encouraging construction or development of dedicated and fixed facilities, bike trails on-road and off, improvements to existing structures. Much focus is on encouraging safe travels on roads and highways that also accommodate motorized vehicles. Other efforts are geared toward providing linkages between residential neighborhoods, shopping areas, and central business districts or heavily-trafficked urban centers.

Cycling is vital to any integrated transport network. It provides health, fast and convenient travel with minimal impact on the environment. The Huntsville MPO supports bicycle riding as an important part of the transport pedestrian mix and has set a target in 2045 in the Long Range Plan, to increase cycling, recognizing

that well-planned and integrated bicycle networks can contribute to more accessible sustainable and connected communities. This plan expands on the previous bicycle and pedestrian plan, by way of implementing strategies and techniques to improve the ridership and safety of bicyclists and pedestrians within the Huntsville Area MPO.

Vision Statement

The infrastructure improvements, policies, and programs recommended in the 2045 Long Range plan are part of the guidance of the Plan's vision, goals and objectives.

The following is a unique vision statement and related goals and objectives for Trip 2045. The objectives serve as performance measures, allowing The MPO and its partners to evaluate its progress towards and the impact of implementing the Plan's recommendations.

The Vision Statement envisions an expanded and ADA-accessible network of transit, sidewalks, greenways, trails, and on-street bicycle connections linking people to jobs, schools, destinations, adjacent communities, and one another. The network serves residents, commuters, students, and visitors alike. Walking, biking and transit are an integral part of City projects, policies, and programs and are perceived as routine, efficient, safe, and comfortable options for both transportation and recreation. People of all ages and abilities enjoy walking and biking and benefit from enhanced quality of life, public health, and economic opportunity.

Goals and Objectives

Goal 1: Choice - Provide a range of transportation options to advance the Huntsville MPO's multimodal linkages and transportation culture.

- Objective 1-1: Expand the range of ways to move throughout the metro area.
- Objective 1-2: Implement a phased bike share system that complements and expands the transit and pedestrian networks.
- Objective 1-3: Connect bicycling and walking infrastructure improvements with transit stops for last mile linkages.
- Objective 1-4: Increase the number of bike-on-bus trips by 50% by 2030, and 100% by 2045.

Goal 2: Accessibility – Institutionalize universal design principals to meet the needs of all modes and all users, including children, families, the aging, and those with disabilities.

- Objective 2-1: Update design guidelines to meet current best practices of ADA-accessibility, transit access, and safe and innovative pedestrian and bicycle facilities.

- Objective 2-2: Upgrade streets of all typologies, including transit corridors, based on improved accessibility guidelines to meet the needs of all users.

- Objective 2-3: Expand development standards to require bicycle parking at retail, commercial, civic, and employment uses and multi-family housing.

- Objective 2-4: Establish short-term and long-term bicycle parking at all major transit stops.

- Objective 2-5: Establish form-based codes or similar development standards to ensure setbacks, parking lots, and other street-level design elements prioritize pedestrian and bicycle access.

Goal 3: Connectivity and Convenience – Biking, walking, and using transit for transportation will be easy, efficient, and routine activities.

- Objective 3-1: Connect residents and visitors with on-and off-street pedestrian and bicycle facilities to destinations and activity centers throughout the city.
- Objective 3-2: Integrate transportation and land use policies to encourage sustainable growth that encourages walking, bicycling and transit.

- Objective 3-3: Prioritize pedestrian and bicycle routes between the Greenways, UAH, A&M campus, and each of the major commercial areas into downtown.

- Objective 3-4: Prioritize pedestrian and bicycle routes from neighborhoods to transit stops, and from neighborhood to neighborhood.

Goal 4: Safety and Comfort - Improve bicyclist and pedestrian safety while designing attractive, welcoming, and comfortable streets, trails, and greenways for all users.

- Objective 4-1: Reduce the number of bicyclist injuries and fatalities by 20% by 2025 and by 40% by 2030.

- Objective 4-2: Reduce the number of pedestrian injuries and fatalities by 20% by 2025, and by 40% by 2030.

- Objective 4-3: Continue the process of incorporating low-stress facilities such as wider sidewalks and innovative bike treatments.

- Objective 4-4: Incorporate intersection safety and accessibility improvements for pedestrians and bicyclists within corridor improvement projects.

- Objective 4-5: Develop off-street facilities to meet national best practices in design, providing a safe and inviting environment for all ages and ability levels.

Goal 5: Awareness - Education, encouragement, and enforcement related to biking and walking will ensure all residents and visitors feel confident biking and walking throughout Huntsville metro area.

- Objective 5-1: Generate awareness among motorists, bicyclists, and pedestrians of their rights related to safe and courteous use of roadways by using Social media as well other forms of communication for the MPO

- Objective 5-2: Provide educational opportunities and encouragement programs specifically targeted to the "interested but concerned" group of existing and potential bicyclists, including families and children.

- Objective 5-3: Ensure that education and encouragement programs for transit, walking, and biking reach all socioeconomic groups, geographic locations, genders, races, and walks of life.

- Objective 5-4: Utilize targeted enforcement to discourage unsafe behaviors of motorists, Licensed Commercial Drivers, bicyclists, pedestrians, and transit users.
- Objective 5-5: Develop and promote an easy-to-read User Map & Guide, supported by wayfinding signage, for the combined transit, bicycle, and pedestrian network.

Goal 6: Usage – The transit-, walking-, and biking-environment will inspire movement in everyday life.

- Objective 6-1: Improve walking mode share to meet national avg of 2.8 percent by 2030.
- Objective 6-2: Double transit mode share by 2030, establishing a level of usage comparable to the national average.
- Objective 6-3: Double bicycle mode share by 2030, establishing a level of usage comparable to peer Bicycle Friendly Community-designated cities.
- Objective 6-4: Establish and maintain an annual counts program, documenting trends in pedestrian and bicycle activity.
- Objective 6-5: Document an annual increase in physical activity levels among MPO residents, ultimately reducing rates of obesity and related chronic diseases.

Goal 7: Implementation – Local leadership, coordination, and funding will allow the continued growth of the pedestrian and bicycle network as well as opportunities for bike sharing.

- Objective 7-1: Work across jurisdictions, departments, and organizations to achieve coordination on short-, medium-, and long-term transportation-related goals and plans.
- Objective 7-2: Establish dedicated funding amounts and fundraising goals for implementation of the Plan.
- Objective 7-3: Implement at least six recommendations of the Plan within six months of adoption with a goal of implementing at least one recommendation in each of the 5 E categories (Engineering, Education, Enforcement, Encouragement, Evaluation) within 1 year of adoption.
- Objective 7-4: Establish an annual work plan of programmatic, policy, and infrastructure recommendations ready for implementation, for pedestrians, bicyclists, and transit users.
- Objective 7-5: Build 50 miles of on-street bike facilities by 2030.
- Objective 7-6: Identify non-profit and private sector partners to lead community-based education and encouragement programs.
- Objective 7-7: Designate a staff member and/or establish a new staff position dedicating at least 50% of time to implementation of the MPO Bikeway Plan.

Goal 8: Evaluation – The City will measure progress towards advancing the vision and goals of the MPO Long Range Plan

- Objective 8-1: Develop and publish a bi-annual report summarizing progress in implementing the transit, walking, and bicycling recommendations of the Plan.
- Objective 8-2: Coordinate annual pedestrian and bicycle counts with planned infrastructure investments to measure impacts.
- Objective 8-3: Conduct bi-annual analysis of pedestrian and bicycle collision data to measure progress towards safety goals and objectives.
- Objective 8-4: Maintain up-to-date GIS inventory of pedestrian, bicycling, and transit facilities including ADA improvements.
- Objective 8-5: Achieve Bronze-level BFC by 2025 and Gold-level BFC by 2030

EXISTING CONDITIONS

The Huntsville MPO current bicycle system currently only has facilities within the urbanized areas of Madison County. Since the urbanized population was much more than the rural areas of the county, bike improvement was focused mainly with the City of Huntsville and City of Madison. Most of the county roads in the rural areas of the county are 2-lanes with little or no shoulder or wide enough travel lanes for cyclist to feel safe sharing the road with motorists. However, this does not deter experience cyclist from venturing out into these areas due to the low traffic volumes on the roads. Many experience cyclists as well as some new to the sport ride in group rides in these areas for recreational fitness sheer enjoyment or training for competition.
Meanwhile within the city of Huntsville there has been a number of Bicycle plans that was created from the 1970's to 2010's. Because of these efforts the city of Huntsville has evolved into a more bike friendly area. In the late 2000's the city was awarded Honorable mention by the League of American Bicyclist Bike Friendly Community committee in its effort to achieve the Bronze Award. Since the then No city in the southeast is better for bicyclists than Huntsville, according to a national bicycling group.

"There have been several improved rankings in recent years for the effort Huntsville has made to become more bike friendly". Colorado-based People-For-Bikes recently released its national rankings of the Best Cities for Bikes and Huntsville ranked tied for 37th overall out of 509 city's ranked. Among those tied with Huntsville with an overall score of 2.8 was Memphis – the only other southeastern city to rank as high as the Rocket City. In the "acceleration" ranking, however, Huntsville was third nationally. The organization defines its "acceleration" category as indicating "how quickly a community is improving its biking infrastructure and getting people riding."

Creating a more bike-friendly community has been among the priorities for city leaders in recent years. The city's first 2 lane cycle track which connects downtown safely between Big Spring Park and the Lincoln and Dallas Mills area was on Spragins Street in downtown Huntsville last year. Since then there

have been numerous other projects completed including Clinton Ave, Bradford Drive and a portion of the STEM corridor that connects Downtown to Alabama Space and Rocket Center. The city has plans to expand its bike lanes on city streets, including from downtown to the University of Alabama in Huntsville via Holmes Avenue. Also the city has positioned its Bike Share Program (Tandem Mobility) throughout downtown Huntsville. Huntsville also recently was ranked in a tie for 8th nationally by the National Complete Streets Coalition, which evaluated "complete street" policies adopted in 2018. Neptune Beach, Fla., was the only other southeastern city included in the top 10. While all of these achievements are good, they are only part of the process in trying to make Huntsville and metro area a more Bike Friendly community

MPO BIKEPLAN NETWORK GUIDELINES

Because bicycles are legally considered vehicles and therefore legally allowed to operate on any public roadway except where specifically restricted. There are certain guidelines as well as many features and design elements associated with traffic and signal operations that can greatly enhance the attractiveness and safety of bicycling in the roadway. These following elements should be considered to help ensure a successful implementation of the Plan:

- **Accessibility**- Is measured by the distance a bicycle facility is from a specified trip origin or destination, the ease by which this distance can be traveled by bicycle, and the extent to which all likely origins and destinations are served.

- **Directness**- Studies have shown that most bicyclists may not choose the best bicycle facility if it increases the travel distance or trip time appreciably, compared to more direct roads without cycling accommodations more than provided by less desirable alternatives. Therefore, even the novice bicyclist routes should still be reasonably direct. The ratio of the directness to comfort/perceived safety involved in this tradeoff will vary depending on the characteristics of the bicycle facility.

- **Continuity**- The proposed network should have as few missing links as possible. If gaps exist, they should not include traffic environments which are unpleasant or threatening to novice cyclists, such as high-volume or high-speed motor vehicle traffic with narrow outside lines.

- **Route Attractiveness**- Incorporates such factors as separation from motor traffic, visual aesthetics, and the real or perceived threat of personal safety along the facility.

- **Low Conflict**- The route should be chosen to minimize conflicts between

bicyclists and motor vehicle operators.

- **Cost**- The cost to both establish and maintain the system.

- **Ease of Implementation**- The ease of difficulty in implementing proposed changes depends on available space and existing traffic operations.

Each of the bikeway selected are examined and evaluated by staff to assess safety and functionality of each designated proposed route. In accordance to FHWA publication,"*Selecting Roadway Design to Accommodate Bicyclists*," the following criteria were used in the evaluation process.

- **Traffic Mix** - The regular presence of trucks, buses and RV's travelling at more than 30 mph can increase risk and have negative impacts on comfort for bicyclists. At high speeds, the wind blast can create the risk of serious falls. Many bicyclists will choose a different route or not ride at all where there is a presence of such traffic.

- **On-Street Parking** - The presence of parking causes some of the most difficult problems for the provisions of bicycle facilities. The FHWA recomendations for bicycle facilities include additional width for situations where parking exists on bike routes.

- **Average Motor Vehicle Operating Speed** - The average operating speed of motor vehicles may have no relation to the posted speed. Drivers typically drive at speeds that feel comfortable to them without the safety considerations of the bicyclists or pedestrians. Motor vehicle speed can have a negative impact on comfort and risk unless mitigated by special design treatments. The greater the differential between operating speeds of bicyclists and motor vehicles, the greater the danger to the cyclists and the greater the need for additional width to accommodate both types of users.

- **Sight Distance** - Inadequate sight distance relates to situations where bicycles are being overtaken by motor vehicles and where sight distance is likely to be less than needed for a motor vehicle operator to either change

lane positions or slow to bicyclists' speed. Sight distance can be restricted by horizontal or vertical curves, vegetation, parked vehicles and signs.

- **Average Annual Daily Traffic Volume** - Higher motor vehicle traffic volume represent greater potential risk for the bicyclist. High traffic volumes decrease the likelihood that beginning and child cyclists will choose to use a bicycle for transportation. Routes are chosen to minimize travel on high travel streets in preference of quieter residential streets for this group of cyclists.

- **Shoulders** - Shoulders should be at least 4 feet wide to accommodate bicycle travel. However, where 4-foot widths cannot be achieved, any additional shoulder width is
  better than none at all. The measurement of usable shoulder width should not include the width of a gutter pan, unless the pan is 4 feet or greater. Shoulder width of 5 feet is recommended from the face of the guardrail, curb or other roadside barriers.

- **Lane Width** - Wide curb lanes for bicycles are usually preferred where shoulders are not provided, such as restrictive urban areas. On highway sections without designated bikeways, an outside curb lane wider than 12 feet can better accommodate both bicycles and motor vehicles in the same lane and thus beneficial to bicyclist and motorists. In general, 14 feet of usable lane is the recommended use in a wide curb lane. On stretches of roadway with steep grades where bicyclist need more maneuvering space, the wide curb should be wider where practical. At least 15 feet is considered to be preferred.

- **Bike lane Width** The recommended width of a bike lane is 5 feet from the face of the curb or guardrail to the bike lane stripe. For roadways with no curb and gutter, the minimum width of a bike lane should be 4 feet. Where parking is permitted but a parking stall is not being utilized the shared area should be at least 11 feet, and without curb face 12 feet adjacent to a curb face.

Grades on Bike Paths - Grades greater than 5 percent are undesirable because the ascents are difficult for many bicyclists to climb and the descents cause some bicyclists to exceed the speeds at which they are comfortable and competent. As a general guide, the following grade restrictions and grade lengths are suggested:

5-6%	For up to 800 ft	9%	For up to 200 ft
7%	For up to 400 ft	10%	For up to 100 ft
8%	For up to 300 ft	11%	For up to 50 ft

ROADWAY MAINTAINENCE

Bicycle facility maintenance is a crucial element in the success of a metro wide bicycle system. Establishing clear maintenance responsibilities and by involving the public in identifying maintenance needs can make a huge impact on the safety of Bike facilities. Maintenance agreements between city agencies should be negotiated to take advantage of the strengths of each agency. In addition, there are also opportunities to utilize volunteers to assist with some maintenance tasks. These actions will improve the efficiency and quality of bicycle maintenance in the MPO areas and encourage bicycle organizations and other community groups to assist with minor maintenance activities. The MPO will work with bicycle organizations, community groups, civic organizations, and businesses to provide periodic upkeep along trail corridors. This will help improve bicycle facility safety, reduce maintenance costs, and build goodwill with neighborhood residents. In addition, the MPO should consider the following:

- Consider creating an "adopt a bike lane" program. A neighborhood or citizen group could work with the cities and towns in the MPO to implement this plan. Potentially, groups could raise the money required for on-street paint, signage and maintenance of a particular bike project within the Bike Plan.
- Continue to respond to citizen complaints and maintenance requests.
- Establish a Bike Spot Safety program to accept maintenance complaints and requests from citizens. Use these requests to make short term improvements and to set maintenance priorities.
- Consider different types of weather and road conditions when developing and maintaining bicycle facilities. Weather and seasonal issues will be considered in the development and maintenance of bicycle facilities within reasonable limits. For example, slip-resistance will be a factor considered in the selection of pavement markings for bicycle facilities. Also on-street bicycle facilities and off-street paths should be swept more frequently to ensure the safety of cyclists. Drainage will also be addressed in the design of all roadways and paths.

- Fix spot maintenance problems on existing city streets and bikeways and making maintenance improvements on existing on and off-road bicycle facilities should be given high priority. Spot improvements, such as removing of specific surface irregularities, filling seams between concrete pavement sections, and facilitating safe railroad crossings should be made on an as-needed basis. The MPO should consider addressing these maintenance problems in conjunction with utility providers (e.g., utility providers may have responsibility for utility hole covers, steel plates, etc.). Public feedback is critical for identifying maintenance issues and prioritizing bicycle facility development and maintenance to maximize the use and safety benefits of these investments. Several factors can be considered to prioritize bicycle facility development and maintenance. The bicycle improvements that will be made first will be those that serve high volumes of users, improve safety, are cost-effective, and improve geographic equity. The prioritization criteria could be developed and should include the following:

User volumes

- Improve conditions in corridors where there is high potential to increase bicycle trips
- Increase the connectivity and safety of the Bicycle Network
- Improve bicycle conditions (by providing facilities that make bicycle and motorists behavior more predictable) in areas with high numbers of police-reported crashes
- Improve bicycle conditions proactively in locations where there is a high potential risk of crashes

Cost-effectiveness

- Implement bicycle facilities as a part of other projects, such as roadway repaving and reconstruction
- Make improvements that have been identified as important bicycle facilities by the public

It should be recommended that, prior to opening a facility, overall responsibility for maintenance of the bikeway system be established; and a program for the control, periodic inspection and maintenance, and policing of the facility be developed. Neglected maintenance will render the facilities dangerous and they will become a liability rather than an asset to the community.

Bicyclists should be encouraged to report bikeway maintenance problems. The maintenance department of local cities and county should have written procedures to follow in maintaining all highways in reasonably safe condition for bicycle traffic. An improperly maintained bikeway will often be avoided by bicyclists in favor of a parallel roadway. Listed below are the types of targeted maintenance:

- **Surface repairs**- Inspect bikeways and road shoulders regularly for surface irregularities, such as potholes, pavement gaps or ridges such hazards should be repaired quickly.
- **Sweeping**- Establish a sweeping schedule. Sweeping road shoulders of accumulated gravel and sand in the springtime and fallen leaves in the autumn where they accumulate. Sweepings should be picked up rather than just be pushed aside in areas with curbs.
- **Vegetation**- Vegetation may impede sight lines, and invasive tree roots may cut back to preserve the travel surface.
- **Rail Crossings**- Rail crossing can be hazardous to cyclists, particularly if they are at an oblique angle. Warning signs and extra space at the road shoulder can allow cyclists to cross at a 90 degree angle. A special smooth concrete apron or rubber flange maybe used as some crossings.
- **Street Markings** – bike lane markings signal loop indicators may become hard to see over time. These should be inspected regularly and retraced when necessary
- **Roadway Markings**- When roadway markings are used, traction or non-skid should be used to avoid the markings becoming slippery in wet weather

THE FIVE (5) E's

The cornerstone of this Bike Plan is the acknowledgement that safer walking and biking routes can best be accomplished through a combination of infrastructure and non-infrastructure projects and programs. These are known collectively as the **"5 Es": Education, Encouragement, Enforcement, Engineering and Evaluation**.

Education: Teach community members about walking and biking safely. Education can happen through in-school curriculum, bike/ped safety assemblies, newsletter blurbs, tips sheets, and social media.

Encouragement: Get students and parents excited about walking and biking by hosting special events, walking school buses and bike trains, holding schoolwide competitions, or celebrating walking and biking with student art or other projects.

Enforcement: Reduce negative behaviors such as speeding, double parking, or disobeying traffic signals by working with local law enforcement. Officers can attend walking events to monitor speeding activity or to build relationships with school children and neighbors.

Engineering: Improve the physical walking and biking environment. Schools can work with local government agencies to determine if infrastructure improvements are needed to encourage students to walk or bike to school safely.

Evaluation: Check to see if your strategies are working! local governments can record walking and biking rates, parent concerns, and traffic data to evaluate the success of a SRTS program. Evaluation activities can help set goals and establish baseline data for planning projects.

THE 5 E'S - *EDUCATION*, ENCOURAGEMENT, ENFORCEMENT, ENGINEERING, AND EVALUATION

The Huntsville MPO will use social media and other platforms as a tool to educate bicyclists, motorists, and the general public about bicycle safety and the benefits of bicycling and increase bicyclist safety through effective law enforcement and detailed crash analysis. Also educate Huntsville's metro transportation system users about all bicycle facilities, Additionally, performing community-wide efforts to increase public awareness of the rights of cyclists on the road. The Huntsville MPO should provide residents with information about the purpose of new bicycle facility treatments (e.g., bicycle boulevards, shared lane markings, etc.) and safe behaviors for using these facilities. The MPO should work with the Law enforcement of the area to educate users about the new facilities, including the following strategies:

- Develop web pages and disseminate information about each treatment.
- Install temporary orange warning flags, flashing lights, or cones at locations where new facilities are installed, where appropriate.
- The Education of pedestrians, cyclists and motorists is essential for non-motorist safety and mobility. This can be one of the most effective and cost-effective ways to reducing collisions and encouraging cycling. A number of possible types of programs can be implemented:
- In-schools, pedestrian and cycling classes can be integrated with school trip management programs (reducing child auto travel to, and traffic around schools), personal safety and fitness, and physical education programs.
- Adult cycling skill classes may be taught at recreational facilities or provided through local traffic safety associations.
- Public education campaigns targeting motorists, cyclists, and pedestrians covering cyclist and pedestrian rights and safety skills (such as Go Green, Share the road campaigns

THE 5 E'S - EDUCATION, ENCOURAGEMENT, ***ENFORCEMENT***, ENGINEERING, AND EVALUATION

The City of Huntsville could work with the other law enforcement officials within the MPO to enforce laws that reduce bicycle/motor vehicle crashes and increase mutual respect between all roadway users. This enforcement program will take a balanced approach to improving behaviors of both bicyclists and motorists and establish policies for the enforcement of bicycle traffic laws.

This should include education for traffic officers concerning bicycle laws and cyclists rights, education and outreach programs to cyclists and motorists, prioritization of violations that will be cited, policies for citing and fining cyclists (including children and other cyclists who do not have a drivers license), and development of a "diversion" program, by which cyclists who violate traffic laws can take a bicycling safety class as an alternative to paying a fine.

In addition provide an advanced bicycle skills course to all staff using bicycles for policing, to ensure safe and appropriate riding skills for safest riding, and to provide model examples for other cyclists.

Compile and analyze reported bicycle and pedestrian collision statistics on an annual basis. This information will be reviewed by the Pedestrian and Bicycle Advisory Committee and Engineering Department staff to determine ways to reduce road hazards

.

Motorist behaviors that will be targeted include:

- Turning left and right in front of bicyclists.
- Passing too close to bicyclists.
- Parking in bicycle lanes.
- Opening doors of parked vehicles in front of bicyclists.
- Rolling through stop signs or disobeying traffic signals.
- Harassment or assault of bicyclists.
- Bicyclist behaviors that will be targeted include:
- Riding the wrong way on a street.
- Riding with no lights at night.

- Riding without helmets.
- Riding recklessly near pedestrians on sidewalks.
- Disobeying traffic laws.

- Bicyclist safety is a shared responsibility between all roadway users. Enforcement priorities should be established through a collaborative process involving the Bicycle Advisory and Safety Committee and the Huntsville Police Department.
- Support efforts to obtain funding for bicycle education and enforcement programs. Convert current bike route network signage to a destination based network. The MPO should to use signs to mark bicycle routes that identify distances, destinations and directions.
- Develop a Bicycle Crash Report "cheat sheet" so officers reporting bicycle crashes include necessary information for crash analysis. This is needed for development of engineering, safety education and for enforcement program.
- The MPO should analyzed bicycle crash data to determine bicycle safety improvement goals; to determine causal factors leading to such crashes and to identify locations where such crashes commonly occur.
- The necessary information for crash analysis. This is needed for Promote bicycle education and encouragement throughout the MPO through partnerships with community organizations and schools**.**
- Develop a Bicycle Crash Report "cheat sheet" so officers reporting bicycle crashes include development of engineering, safety education and for enforcement program.
- The MPO should analyzed bicycle crash data to determine bicycle safety improvement goals; to determine causal factors leading to such crashes and to identify locations where such crashes commonly occur.
- Staff should work with the local law enforcement officials to enable them to develop traffic law enforcement plans that are responsive to these identified safety problems.
- Police Department in cooperation with the Bicycle and Safety Advisory Committee to help reduce the number of incidents and accidents throughout the Huntsville area MPO**.**

- Appropriate traffic law enforcement can prevent conflicts and collision and help in still lifelong traffic safety habits in young people. A teenager who has spent years violating bicycle traffic laws with impunity is being poorly prepared for a responsible drive. Safety experts recommend the targeting the following cycle traffic violations:
- Motorists failure to yield or stop to yield for pedestrians and cyclists when required by traffic laws.
- Excessive motor vehicle speed
- Intoxicated driver and cyclist
- Cyclist failure to yield when required by traffic law
- Cyclist riding in the wrong direction, against traffic
- Cycling riding at night inadequate lighting

Effective enforcement requires overcoming various barriers. Non-Motorized traffic violations, particularly by children, are often considered a low priority by police and the community. Cyclists and pedestrians may ignore citations unless police departments develop a suitable processing system.

A bicycle "diversion" program allows offending cyclists and motorists to take a cycling safety workshop as an alternative to paying a traffic fine. (i.e they are "diverted" from the court system) Police departments can run such workshops internally or contract with an outside expert. Such programs are popular because they emphasize safety rather than punishment, and help develop cooperation among police, parents, and bicycle safety advocates. Here is how such programs typically work:

- Cyclists or motorists is ticketed for violating a traffic Law, If the cyclist or motorists attend the workshop the ticket is void and destroyed and/or if the cyclist fails to attend the workshop in the specific period, the ticket is processed.

THE 5 E'S - EDUCATION, ENCOURAGEMENT, ENFORCEMENT, ***ENGINEERING,*** AND EVALUATION

The most visible and perhaps most tangible evidence of a great place for Bicycling is the presence of infrastructure that welcomes and supports it. The physical environment is the key determinant in whether people will get on a Bike and ride. The most advanced Bicycle friendly communities and Bicycle Friendly Universities have well connected bicycling networks, consisting of quiet neighborhood streets, conventional and protected bike lanes, shared use trails and policies to ensure connectivity and maintenance of these facilities.

The Engineering Department Will:

- Identify specific bicycle and pedestrian projects in its annual Capital and Current Budgets. The Bicycle and Pedestrian Advisory committee will have the opportunity to comment on these budgets before their consideration by City Council.
- Implement pedestrian and bicycle facility design and maintenance standards and modify roadway design and maintenance standards as needed to improve the cycling environment.
- Revise existing subdivision design standards and conditions to ensure that subdivisions are designed with direct pedestrian and bicycle connections and suitable transit access.
- Organize bicycle and pedestrian planning workshops for Engineering staff, members of the Bicycle and Pedestrian Advisory committee, and other appropriate stakeholders.
- Coordinate efforts with the Parks and Recreation Department to ensure that connections between on-street and off-street facilities are well designed.
- Notify the Advisory Committee about all major road works and sewer projects where wide curb lanes, sidewalks, or pathways can be established.
- Initiate a “Spot Improvement Program” to reduce hazards along popular cycling routes and major pedestrian routes through small-scale, low cost improvements. Bicycle hazards include dangerous potholes, sewer grates, and railway crossings. Pedestrian hazards include missing curb

cuts, missing links, uneven and cracked sidewalks. Priority should be given to improvements along the routes identified on the Bicycle and Pedestrian Network Maps. It is recommended that funds from the existing road maintenance budget be used. A telephone “hotline” or postcard program should be established to provide cyclists and pedestrians with the convenient opportunity to suggest improvements.

- Revise its design standards and specifications to ensure bicycle and pedestrian access across and beneath new and renovated bridges and overpasses.
- Revise the standard tender specifications so that only bicycle-safe sewer grates are purchased.
- Establish standards to ensure access and safety to pedestrians and cyclists during construction projects.
- Ensure that all bicycle and pedestrian projects comply with recognized design standard

CLASSIFICATION OF BIKE FACILITIES

There are five major categories of bicycle facilities:

1. **Bike paths and trails (Class I bicycle facilities)** are entirely separated from the roadway except at infrequent intersections. These are generally "multi-use" facilities used by both bicyclists and pedestrians. These are generally "multi-use" facilities for pedestrians, and sometimes equestrians, as well as bicyclists.

2. **Bike lanes (Class II bicycle facilities)** are a portion of the road marked with a line, for use by bicyclists. They are always one-way facilities, with cyclists traveling in the same direction as motor vehicle traffic in the adjacent lane. Bike lanes often become dashed lines approaching an intersection to indicate that cyclists may shift lanes, and motor vehicles may pass through the lanes as needed for turning. Bike lanes are generally found on arterial roads and on major collectors. See the National Bicycling and Walking Study #4 (FHWA 1991) for a comparison of the merits and hazards of striped lanes, shoulders, and wide curb lanes.

3. **Bike routes (Class III bicycle facilities)** are roads particularly suitable for cycling that are marked with signs. This is typically appropriate for streets with low traffic speeds (40 km/h or less) and volumes (3,000 vehicles per day or less). This may be an opportunistic classification or may be the result of specific traffic management and traffic calming modifications. Bike routes may direct cyclists away from high speed traffic, high congestion traffic, or difficult intersection situations. "Bicycle Boulevards" are roads that have been modified with traffic management and traffic calming features to be particularly suitable for cycling. Note that a network of bike routes does not eliminate the need to make all roads safe for cycling.

4. Cycle tracks (Class IV), also referred to as protected bikeways are exclusive bike facilities that combine the user experience of a separated path with the on-street infrastructure of a conventional bike lane. A cycle track is physically separated from motor traffic and distinct from the sidewalk. The separation maybe in the form of posts, parked automobiles or a combination of both.

5**. Destination facilities** include parking facilities, showers and clothes lockers. understand cycling in the MPO area in addition to the information gathered during the review of existing plans and documents.

TYPES OF CYCLISTS

Cyclist varies significantly in abilities and needs and preferences. Both children and less experienced or timid adult cyclist may benefit from facilities with Bicycle planning separate right-of-way. Cycle commuters require ample secure parking as well as suitable routes that offer non-circuitous access to employment centers. Bolder commuters and serious sport cyclist often prefer riding in traffic or highway shoulders. The Bicycle Plan has to balance these various demands to provide the greatest benefit with available resources. The Chart below classifies the deferent types of cyclists.
Bicycle riders can be classified into eight broad groupings as described in the table below;

CHARACTERISTICS OF CYCLISTS
TABLE 1

Category	Rider characteristics	Riding environment
Non-cyclists and potential cyclists	Do not currently ride; have potential to with effective encouragement.	Generally would begin with off-road paths, footpaths (where permitted) or very low volume residential streets.
Primary school children	Cognitive skills not developed, little knowledge of road rules, require supervision.	Similar to that of non/potential cyclists.
Secondary school children	Skill varies, developing confidence.	Generally use on-road facilities or off-road paths where available.
Recreational	Experience, age, skill vary greatly.	Desire off-road paths and quiet local streets, avoid heavily trafficked routes, more experienced will prefer to use road system for long journeys.

Commuter	Vary in age, skill and fitness, some highly skilled and able to handle a variety of traffic conditions.	Some prefer paths or low stress roads, willing to take longer to get to destination, others want quick trip regardless of traffic conditions, primarily require space to ride and smooth riding surface, speed maintenance.
Utility	Ride for specific purposes (eg shopping), short length trips, routes unpredictable.	Not on highly trafficked roads, needs include comprehensive, low stress routes, appropriate end of trip facilities.
Touring	Long distance journeys, may be heavily equipped, some travelling in groups.	Often route is similar to that of other tourists.
Sporting	Often in groups, two abreast occupying left lane, similar needs to commuters.	Travel long distances in training on arterials, may include challenging terrain in outer urban or rural areas, generally do not use off-road because of high speed and conflict with other users.

Table of Motivations and concerns of non-bicycle riders.
Table 2

Category	Reasons for not cycling	How to encourage people in these groups to cycle
Inexperienced Novice	Safety/comfort (perceived and actual), cycling attire including helmets, greater desire to cycle for leisure/fitness than for commuting, safety, health and fitness	Exclusive bicycle lanes and off-road routes, increased driver awareness, more end of trip facilities, more cyclists on the road
Elderly	Safety (perceived and actual), health and fitness issues	Exclusive bicycle lanes and off-road routes, increased driver awareness, more end of trip facilities, more cyclists on the road
People from non-English speaking backgrounds	Restricted access to cycling information and safety campaigns, as well as cultural barriers.	Improve availability of information on cycling and safety campaigns in languages other than English.
Teenagers and school children).	Distance from home to school, safety (this decreases as students get older), access to appropriate bicycles, cycling alone.	Implement Bike Buses and school bike mechanic programs; provide off-road paths to get to school, construct safer crossings and supply secure facilities to store bikes at school.

Further work has been undertaken to understand the motivations and concerns of non-cyclists who are interested in cycling, or cycling more, and these are detailed in **Table 2**. There could be other road user groups who feel negatively affected as bicycle networks grow, including car and truck drivers.

THE 5 E'S - EDUCATION, ***ENCOURAGEMENT***, ENFORCEMENT, ENGINEERING, AND EVALUATION

The Huntsville MPO would benefit from a program to promote increased bicycle use through education of employers and potential bicyclists about commuting methods. This program could increase the percentage of bicycle commuters by replacing trips for commuting, errands and other trips.

The advantages would be reduced air pollution and fuel consumption and reduced roadway congestion. Nationally, 74% of the population lives within five miles of their workplace. Five miles is considered a comfortable distance for bicycling and takes about 20 minutes, which is comparable to trip time for automobiles. Yet many people think five miles as "too far" to ride. However, to help in changing this perception, the following strategies are suggested to promote and generate a broad appeal in bicycling:

- Replace see and be seen bus wraps with new campaign slogan
- Establish a commuter Bike Bus Program
- Promote tourism using way-finders App
- Introduce valet Bicycle Parking at Community Events (Panoply)
- Add a 3- bike bus rack to busses from UAH and Alabama A&M
- Connectivity thru neighborhoods with speeds less than 25 mph and that connect to greenways
- Provide community bicycle education and /or maintenance courses
- Promote and support Ride to Workday and Ride to School program
- Popular origin and destinations within a mile of routes and greenways
- Hold an annual community bike ride, support local BUG (Bicycle Users Group) groups or promote any programs
- Promote new sections of infrastructure and show how they integrate within the existing network
- Nominate a local "Cycle Champion" in the community as a role model to promote cycling
- Create a "Bicycling in Huntsville" infomercial featuring cyclists from the community and Huntsville PD website guide – This website would be used to promote helmet use by all cyclists, cover all traffic laws, safety tips, and a map for quick reference.

- Create a Public Information program **–** The Bicycle Advisory and Safety Committee would create an ongoing promotional campaign for bicycle use, including "Share the Road" public service announcements on cable TV.

See and Be Seen, the City of Huntsville's campaign to promote safe biking, focuses on awareness, safety, and mutual respect of motor vehicle drivers and bicyclists. Whether cycling is fairly new to you or you've been riding for years, this campaign will be a place to ask, discuss, and discover new possibilities. Learn biking safety tips, explore new routes, make a report about road conditions, and more.

Bicycling is a time-tested activity that appeals to people of all ages, backgrounds, and interests. With the right skills, anyone can experience the joy and freedom a bicycle can bring. Follow these tips to ensure a fun and safe bike ride:

Obey the law.

A bicyclist has the same rights and responsibilities on the road as the driver of a motor vehicle. Ride lawfully and predictably. One way a bicyclist can earn greater respect on the road is to obey stop signs and traffic signals. Watch out for pedestrians on sidewalks and on roads that do not have sidewalks. Do not ride your bike on sidewalks. Not only is it illegal, it is unsafe to bike on a sidewalk, as you will not be "seen" by motor vehicles. Announce yourself and your intentions before passing others.

Be predictable.

Act like a vehicle. Drive your bicycle in a smooth and predictable manner. Watch your speed. Look ahead to allow time to calmly avoid obstacles. Avoid abrupt maneuvers whenever possible. When entering a roadway from a driveway, alley, or curb, look and yield to oncoming traffic.

Ride with traffic.

Ride on the right side of the lane going in your direction. Do not pass motorists on the right. If you approach an intersection with a right turn lane and intend to continue straight, move to the thorough lane. If you are turning left, scan behind you, then signal and move to the closest lane to your left. Repeat the same steps until you are in the rightmost lane from which to turn left.

Be respectful.
In Alabama, every person riding a bicycle on a roadway is given all of the rights and responsibilities applicable to the driver of a motor vehicle. Share the road and take responsibility for your actions on the road.

Protect yourself.
The law says that everyone under the age of 16 is required to wear a helmet when riding a bicycle, but helmets are important safety equipment for cyclists of all ages. Be sure to replace your helmet every few years to ensure the fit is tight but comfortable, and that the padding is thick.

Wear proper attire.
Wear protective, reflective, and bright clothing. Clothing made specifically for cyclists can offer many benefits as well, like moisture-wicking material, a longer tail that can be tucked in, bright colors, and reflective elements. Bike gloves provide extra shock protection for your hands, and grip fabric can help secure your hands on the handlebars. Bike shorts also provide added comfort. Finally, shoes with stiff soles can help keep feet happy during the ride.

Be sure you can be seen.
If you're riding at night, use bright lights and blinky lights on your bicycle and ride with extra caution.

Remember your ABCs.
Perform an ABC Quick Check before each bicycle ride. Check the following:

- **Air pressure:** Spin your wheels and check that your tires are not too worn to ride.
- **Brakes:** Ensure brake pads are clean, straight, and in proper contact with the rims.
- **Cranks, chains, and cogs:** Try to wiggle the crank arms and be sure there is no movement. Spin the pedals and cranks to see if the chain is gliding smoothly. Clean the chains of residue and dirt.
- **Rear wheel:** Make sure the gear levers and derailleurs work to shift the chain between gears.
- **Quick Release:** Your bike likely has quick release levers that hold the wheels to the bicycle, on the brakes, or on the seat post. The wheels should be clamped securely. Should you need to adjust the quick

release, hold the lever in the open position while tightening the adjusting nut. When you feel the nut creating resistance on the lever, close the lever and enjoy the ride.

- **Park considerately.**
  Don't park your bike so that it interferes with pedestrian or sidewalk movements and use bike racks properly. Also, use a bike lock.

See and Be Seen Report Form

The See and Be Seen reported incident form document was created from a collaboration of staff and the Huntsville Police Department to create a data base of vehicle harassing bicyclists.

The cyclists are to Report "near miss" incidents with the See and Be Seen form. A near miss incident may be defined as a non-injury event involving motor vehicles, cyclists or pedestrians. This form is not to be used to report criminal offenses. Data collected from this form will be used for informational and policy planning purposes, allowing the City to identify patterns and solutions to improve Huntsville roadways, allocate traffic resources and encourage safe driving behavior.

If you submit the See and Be Seen form, City of Huntsville Planning Department representatives or the Huntsville Police Department may contact you for further information.

WAYFINDING

Wayfinding signs and pavement marking provided to help bicyclists navigate through complicated sections of the Bikeway Network (in addition to official Signed Bicycle Routes). There are a number of locations in throughout the MPO area where it may be necessary to use non-arterial streets, alleys, or sidewalks to connect between existing or proposed bicycle facilities. While many of these complicated connections are shown on the MPO Bikeway Network Map, there are currently no signs or markings along the actual connection to facilitate wayfinding. There is a definite need for a combination of signs and markings to guide bicyclists through these connections.

Wayfinding Signage Benefits

- Familiarizes users with the bicycle network.
- Identifies the best routes to destinations.
- Overcomes a “barrier to entry” for infrequent bicyclists.
- Signage that includes mileage and travel time to destinations may help minimize the tendency to overestimate the amount of time it takes to travel by bicycle.
- Visually indicates to motorists that they are driving along a bicycle route and should use caution.
- Passively markets the bicycle network by providing unique and consistent imagery throughout the jurisdiction.

Typical Applications

- Along all streets and/or bicycle facility types that are part of the bicycle network.
- Along corridors with circuitous bikeway facility routes to guide bicyclists to their intended destination.

The Huntsville Area Long Range MPO Bike Plan also will focus on instituting a Wayfinding Plan to be implemented throughout the MPO. A bicycle wayfinding system consists of comprehensive signing and/or pavement markings to guide bicyclists to their destinations along preferred bicycle routes. Signs are typically placed at decision points along bicycle routes – typically at the intersection of two or more bikeways and at other key locations leading to and along bicycle routes.

The examples shown on the following page demonstrate how this system can provide travel information (nearby destinations, directions, distances) to users of a given path or facility. It also helps publicize the existence of the bicycle network and makes it easier for people to find and access to bicycle facilities

Types of Signs

There are three general types of wayfinding signs: Confirmation Signs

Berkeley, CA

Chicago, IL

Oakland, CA

Purpose	**Information**	**Placement**
Indicate to bicyclists that they are on a designated bikeway Make motorists aware of the bicycle route.	Can include destinations and distance/time. Do not include arrows.	Every ¼ to ½ mile on off-street facilities and every 2 to 3 blocks along bicycle facilities, unless another type of sign is used (e.g., within 150 ft of a turn or decision sign). Should be placed soon after turns to confirm destination(s). Pavement markings can also

act as confirmation that a bicyclist is on a preferred route.

Concept

Chicago, IL

MUTCD

Purpose

Indicate where a bikeway turns from one street onto another street. Can be used with pavement markings.

Information

Include destinations and arrows.

Placement

Near-side of intersections where bike routes turn (e.g., where the street ceases to be a bicycle route or does not go through). Pavement markings can also indicate the need to turn to the bicyclist.

Decision Signs

Oakland, CA

Concept

Portland Metro Cities, OR

Purpose

Mark the junction of two or more bikeways. Inform bicyclists of the designated bike route to access key destinations.

Information

Destinations and arrows, distances, and travel times are optional but recommended.

Placement

Near-side of intersections in advance of a junction with another bicycle route.
Along a route to indicate.

Types of Destinations

Wayfinding signs can direct users to a number of different types of destinations, including the following:

- On-street bikeways
- Commercial centers
- Public transit centers and stations
- Schools
- Civic/community destinations
- Local or regional parks and trails
- Hospitals
- Bridges

Prior to developing the wayfinding signage, it can be useful to classify a list of destinations for inclusion on the signs based on their relative importance to users throughout the area. A particular destination's ranking in the hierarchy can be used to determine the physical distance from which the locations are signed.

For example, primary destinations (such as the downtown area) may be included on signage up to five miles away. Secondary destinations (such as a transit station) may be included on signage up to two miles away. Tertiary destinations (such as a park) are more local in nature and may be included on signage up to one mile away.

BICYCLE PARKING

Providing bicycle parking facilities is an essential element in an overall effort to promote bicycling. People are discouraged from bicycling unless adequate parking is available. Bicycle parking facilities should be provided at both the trip origin and trip destination and should offer protection from theft and damage. The wide variety of bicycle parking devices is divided into two classes, long term and short term. The minimum needs of each group differ in their placement and protection.

•Long-term bicycle parking facilities provide a high degree of security and protection from the weather. They are intended for situations where the bicycle is left unattended for long periods of time, such as at apartments and condominium complexes, schools, places of employment and transit stops. Bicycle parking facilities are usually lockers or cages or rooms in buildings.

•Short-term facilities provide a means for locking the bicycle frame and both wheels, but do not provide accessory and component security or weather protection unless covered. Its purpose is for decentralized parking where the bicycle is left for a short period of time and is visible and convenient to the building entrance.

Bicycle parking improvements are needed at transit facilities including park and ride lots. This includes providing bicycle racks and lockers and reserving adequate space during transit station construction to provide future bicycle racks and lockers. For these issues to be resolved, the following specific actions should be considered:

- Providing sufficient space for bicycle storage at transit stations and multimodal hubs.
- Providing sufficient space for bicycle storage at future transit stations and park and ride lots. As transit systems develop in the future, bicycle parking demand should be evaluated to determine the amount of space that is needed for bicycle racks and lockers. Space for bicycle parking should be included in station designs from the onset of a project.
- Working with the Huntsville Transit to develop a safe bicycle storage facility at the downtown transit center. By funding and promoting a staffed bicycle facility at the downtown transit center, the MPO will be showing support for bicycling as a viable form of transportation. This facility will provide a

safe place for commuters to store their bicycle. In addition to parking, this facility could provide resources for bicycle repair, maps and other information.

- **Increasing the availability of bicycle parking throughout the MPO area.**
  Secure bicycle parking located in close proximity to building entrances and transit entry points is essential in order to accommodate bicycling. Secure bicycle parking helps to reduce the risk of bicycle damage and/or theft. Update the bicycle parking requirements for new developments in the MPO as necessary.

- **Establish a proactive bicycle rack installation program.** A proactive bicycle rack installation program should be established to provide additional bicycle parking in urban areas, particularly on commercial and high-density residential blocks. Schools, libraries, and community centers should also be targeted for bicycle rack installation. It will be important to work closely with adjacent property owners to make sure that racks are properly located and do not interfere with loading zones and other business related activities.

- **Strengthen legislation to require more bicycle racks and lockers as a part of new developments.**

- **Consider installing covered, on-demand, longer-term bicycle parking.** The Huntsville MPO will work with local agencies and local Governments to examine the possibility of installing covered, on-demand, longer-term bicycle parking. Unlike locker facilities, this type of bicycle parking facility also has the advantages of not needing to be rented, not requiring keys, and not being a potential receptacle for trash. Certain types of covered, on-demand bicycle parking facilities can be locked with a padlock provided by the bicyclist.

- **Provide incentives for operators of private parking facilities to add secure, high quality bike parking.** It will be important for the city and transit agencies to maintain bicycle racks and lockers and use enforcement

to deter misuse of these facilities. Abandoned bikes and locks can make existing racks unusable. Other racks can be obstructed by planters, news boxes and other street furniture.

- **Encourage office development and redevelopment projects to include shower and locker facilities.**

  The MPO must amend its development ordinances to strengthen existing requirements for shower and locker facilities based on employment/student densities. For employees who are considering bicycling to work, such facilities make it possible to shower and change into work clothes after the commute.

Bicycle racks should be designed so that they:

- Do not bend wheels or damage other bicycle parts
- Accommodate high security U-shaped bike locks
- Accommodate locks securing the frame and both wheels (preferably without removing the front wheel of the bicycle)
- Do not impede or interfere with pedestrian traffic
- Are easily accessed from the street and protected from motor vehicles
- Are visible to passerby, to promote usage and enhance security
- Are covered where users will leave their bikes for a long time
- Are in well lighted areas

Facilities should be able to accommodate a wide range of bicycle shapes and sizes, including tricycles and trailers if used locally. The Bikeway Plan proposes to provide bicycle parking facilities at public buildings and parks along the proposed bike routes.

Bicycle parking can range from purely utilitarian on-street racks to secure bicycle cages to street art (see photos below).

Figure 3: Temporary bicycle rack, suitable for activities or events that don't require permanent parking

Figure 4: Metal ring secured to utility pole designed for one bicycle per ring

Figure 5: Metal rack secured to the ground designed for multiple bicycles

Figure 6: Metal rail secured to the ground designed for two bicycles per rail

Figure 7: Bicycle racks within a secure bicycle cage

Figure 8: Functional art

THE 5 E'S - EDUCATION, ENCOURAGEMENT, ENFORCEMENT, ENGINEERING, AND ***EVALUATION***

Transportation agencies use performance measures to assess the effectiveness of a wide range of activities, and all are fundamentally oriented toward understanding how a transportation system works and impacts users. No single measure can fully describe the nuances of transportation experience across all travel modes, so many agencies consider multiple measures throughout the transportation planning process.

Performance measures can be used in a variety of applications and at a variety of scales. Some performance measures are targeted at prioritization. For example, a local jurisdiction could use bicycle level of service to identify the designated bicycle routes with the greatest need for improvements. State agencies may use performance measures to benchmark annual progress towards statewide policies and goals. For example, “pedestrian fatalities” are often monitored annually to determine whether statewide policies are improving pedestrian safety.

The pedestrian and bicycle performance measures will also help document improvements in pedestrian and bicycle use, safety, and convenience the Huntsville MPO, providing data that can be used to describe progress towards the stated goals to the general public. Performance measures are useful for tracking change over time and providing a basic level of information, The following Performance measures could be considered to assess the progress and success the MPO Bike Plan over the next 20 years, they are as follows

- Number of bicycles observed as counts
- Number of bike racks installed around area
- Number of page views on bicycle website.
- Number of fans on Facebook/Instagram
- Percentage of roads with bike lanes or shoulders
- Number of linear greenway miles
- Double number of bicycle trips made in the city of Huntsville as a

percentage of total trips by 2030

- Achieve a minimum of 80 percent good level of confidence and comfort for cyclists that ride in the city of Huntsville by 2030

Bicycle Route Level of Service Model Map

The Bicycle Level of Service Model (Bicycle LOS Model) is an evaluation of bicyclist perceived safety and comfort with respect to motor vehicle traffic while traveling in a roadway corridor. It identifies the quality of service for bicyclists or pedestrians that currently exists within the roadway environment. Bicycle Level of Service (BLOS) is a nationally-used measure of ***on-road*** bicyclist comfort level as a function of a roadway's geometry and traffic conditions., BLOS is in the Highway Capacity Manual.

Model parameter ranges

The BLOS model was developed using roads with the following parameter ranges:

- Through lanes per direction - 1 to 3 (2 to 6 lane roads)
- Width of outside travel lane, to outside stripe - 10 to 16 feet
- Paved shoulder or bike lane, outside lane stripe to pavement edge - 0 to 6 feet (no rumble strips)
- Bi-directional traffic volume - 550 to 36,000 ADT (Average Daily Traffic)
- Posted speed limit - 25 to 50 mph
- Percentage of heavy vehicles - 0 to 2%
- FHWA's pavement condition rating - 5 (very good) to 2 (poor)
- A wide range of development types and parking conditions

Be aware of model use outside these ranges, particularly for paved shoulders much over 6 feet and more than a few percent heavy vehicles. Try halving incremental shoulder width over 4 feet (e.g., use 7 for a 10-foot shoulder), and compressing heavy vehicle percentage above 2% so that, for example, 5% is high and 7% is extremely high. Another suggestion: if occupied parking is greater than 10%, estimate high or use a peak value.

With statistical precision, the Model clearly reflects the effect on bicycling suitability or “compatibility” due to factors such as roadway width, bike lane

widths and striping combinations, traffic volume, pavement surface condition, motor vehicle speed and type, and on-street parking.

Level of Service

A. Facility is reasonably safe for all users 10 years or older

B. Facility can accommodate users with basic skills and knowledge of traffic Facility requires an intermediate level of skill and knowledge of traffic

C. Facility requires an advanced level of skill and knowledge

D. Facility is generally not suitability for pedestrians or bicycles

Important Safety Reminders

- All bicyclists should wear properly fitted bicycle helmets every time they ride. A helmet is the single most effective way to prevent head injury resulting from a bicycle crash.
- Bicyclists are considered vehicle operators; they are required to obey the same rules of the road as other vehicle operators, including obeying traffic signs, signals, and lane markings. When cycling in the street, cyclists must ride in the same direction as traffic.
- Drivers of motor vehicles need to share the road with bicyclists. Be courteous – allow at least three feet of clearance when passing a bicyclists on the road, look for cyclists before opening a car door or pulling from a parking space, and yield to cyclists at intersections and as directed by signs and signals. Be especially watchful for cyclists when making turns, either left or right.
- Bicyclists should increase their visibility to drivers by wearing fluorescent or brightly colored clothing during the day, and at dawn and dusk. To be noticed when riding at night, use a front light and a red reflector or flashing rear light, and use retroreflective tape or markings on equipment or clothing.

BICYCLE ANALYSIS ZONES (BAZ)

Bicycle Analysis Zones are designated areas that highlight the 71 zones that follow census tract boundaries and geographic edges within the Huntsville MPO area that are created by topography, neighborhoods, and freeways. Variations within a single zone may be analyzed by comparing data for the census tracts in each zone. The Purpose being to determine where the most favorable area in which for cyclists who are novices to ride safely and to also based on density of population and facilities where bike pockets could be programmed for the future. Below is the list of categories the zones consist of;

Bicycle Analysis Zones (BAZ) Profiles:

- Population
- Income/households/renters
- Age
- Ethnicity
- Infrastructure (pavement quality/bicycle parking)
- Schools, Libraries, Colleges
- Recreational Amenities
- Connectivity with Bus or Bike routes/Greenways
- Commercial Land Use within a mile (Grocery or Retail)
- Topography

Future information could be:

- Public health data
- Hospital bike involved crashes by age data
- Proximity to jobs
- Student populations and school related issues
- Locations of bike racks and share bike could be disseminated using this info comfort for cyclists that ride in the city of Huntsville by 2030

BIKEWALK

- A Bike-walk is a segment of a signed bike route that has sidewalk that has limited access from driveways for a certain distance where a bicyclist can ride safely out of traffic at normal speed until they can resume riding in the street along the route. The purpose is to accommodate those cyclists who are intimidated by traffic and You can continue your trip using the sidewalk until you can safely merge back to the street. The following streets have sidewalks that criteria.

- Meridian
- Wynn
- Old Madison Pike
- Sparkman
- Drake
- Taylor
- Bailey cove
- Enterprise way
- Adventist
- Pulaski
- Carl T. Jones
- Garth
- -Whitesburg
- Green cove
- Hobbs
- Explorer
- Joseph lowery
- Hundley Drive
- Stringfield

Multi-Modal Transportation

Multi-modal transportation is encouraged in federal and state policy to increase the efficiency of the transportation system. An excellent example of multi-modalism is the combined use of bicycles and transit. Transit services are highly sensitive to the distance between user's residences and the nearest transit stop. Lower density developments have traditionally been considered poor candidates for transit services because of the increased distance to transit stops

.

Public Transit is a shared ride alternative to driving alone, reducing the overall carbon footprint of the City of Huntsville. Bicycle racks on buses help to further encourage car-free trips from point A to B, empowering citizens to use a combination of buses and bike-riding to reach destinations.

Transit provides low-cost transportation for citizens to access jobs, groceries, medical needs and recreation. Transit services are especially important to the quality of life for individuals who can't drive or are part of a family unit with one or fewer automobiles in the household. Elderly and individuals with disabilities often find that transit is their only affordable option for accessing the doctors, pharmacies, programs and services in the city.

The proposed bike routes provide access to existing and planned greenways in the city. Additionally, the bike plan was coordinated with the city's public transit routes, and bike racks have been installed on all city buses to encourage multi-modal transportation uses. Integrating public transit with bicycling will allow multi-modal transit users to cover more distance and/or overcome geographical barriers that are difficult for bicyclists to negotiate.

Transit enables the bicyclist to take longer trips; transit enables the bicyclists to pass over or through topographical barriers; and bicyclists can increase transit ridership during surplus capacity periods such as weekends and midday.

In addition the following could be possible actions to increase the use of Transit:

- Bicycle connections could eventually be expanded the provision of larger bicycle racks on all buses and routes. As bicycle-transit use increases, consideration of multi-bicycle racks (more than 2) and allowance of bicycles on board buses should be given.

- Bicycle Parking (lockers, covered attended rooms, could be provided at all major transit stations and new park-and ride stations as they are developed.

- Neighborhood stations with long term bicycle parking could be established on major bicycle routes to encourage multi-modal trips using bicycles at origins in neighborhoods and buses to destinations.

Also Federal regulations require that States and Metropolitan Planning Organizations accommodate pedestrians and bicyclists, especially to ensure the operability of an intermodal transportation system. In accordance with 23 CFR 450.322(f), metropolitan transportation plans shall, at a minimum include existing and proposed transportation facilities should function as an integrated metropolitan transportation system.

The Huntsville Area MPO, as a provider of fixed route transit services, seeks to continue the provision of an integrated system of transportation modes that connects transit with bicycle and pedestrian facilities. The MPO or local fixed route provider should seek funding to expand bus shelters and further sidewalk development within ½ mile of stops and within 3 miles for bike facilities. Bike facilities are available or will be available within 3 miles of a transit route. All of Huntsville's fixed route buses accommodate bicycles through bike racks that are installed on the buses. The location of future transit shelters have been identified by Huntsville Public Transit, and funding has been secured to construct a limited number of those.

PEDESTRIANS

Everyone Is a pedestrian Both bicycling and walking are inherently "local" forms of transportation, being relatively short-distance activities; therefore the focus of the Huntsville area's bicycle and pedestrian plan is urban, where the potential for usage is highest.

Within the urban transportation network, bicycling and walking can be feasible alternatives to the auto for short trips, trips to commercial centers, libraries, schools, work, transit stops, and recreation centers. Bicycling and walking is viewed by some as only recreational and major transportation corridors have few or no provisions for non-motorized modes, but in the underserved areas, these are utilitarian means to get to work, shop, and worship. It is the intent of this plan to increase the amount of safe bike and pedestrian paths for both recreational and utilitarian usage.

On the main roadways which traverse the Huntsville metropolitan planning area, bicyclists and pedestrians must operate within a transportation system that is oriented almost completely to motor vehicle travel. There are many places where neighborhoods are not connected to nearby destinations with sidewalks, even in places where the destination is less than one-half mile away. Non-vehicular access to many schools is hindered by the surrounding roadways.

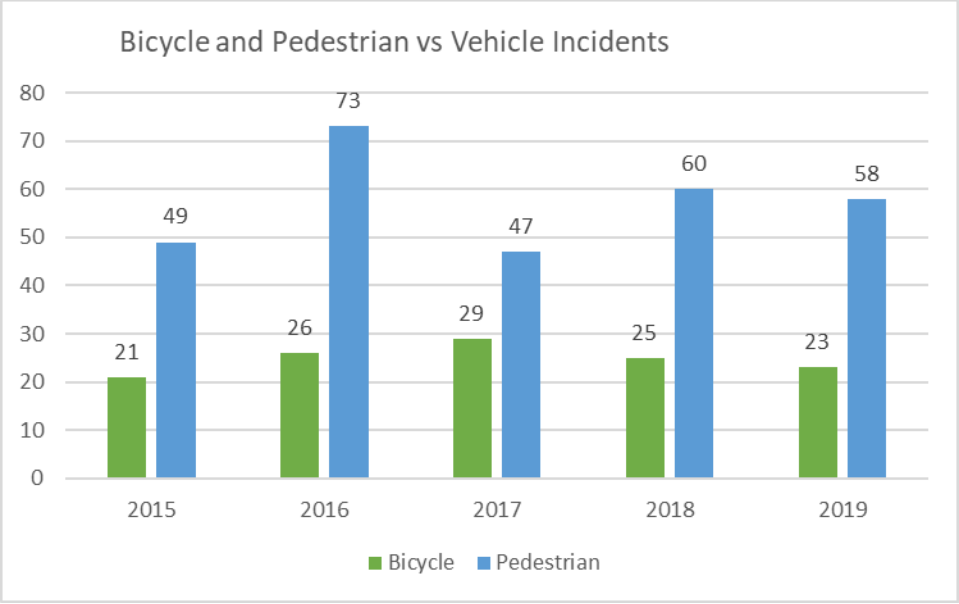
The majority of shopping centers, malls, and office complexes do not encourage access by bicyclists and walkers, since entry must be made by traversing a parking lot. Drive-through lanes are usually located adjacent to the entrances and designated crosswalks and bicycle parking are rare. Sidewalks do line most roads in the urban core, west of memorial parkway and in the older residential neighborhoods, and seem to be used most frequently in the downtown area. Along some roadways where sidewalks do not exist, there are worn dirt paths, an indication of travel by bicyclists and pedestrians. The 2020 Bike plans of the should be updated to identify these locations and recommend solutions to these inadequacies

Everyone has different preferences when it comes to transportation, but at one time or another everyone is a pedestrian. Unfortunately, there was a more than 3% increase in the number of pedestrians killed in traffic crashes in 2018, totaling 6,283 deaths.

Whether you're a concerned resident, a parent or a caregiver, you want to do everything you can to make sure you, your loved ones and your neighbors can enjoy walking safely in your community. The resources below will help you do just that. We offer pedestrians of all ages guidance on maintaining safety while enjoying the benefits of walking

Pedestrian accidents are usually greater than bicycling accidents. The National **Highway Traffic Safety Administration reports that 6590 pedestrians were killed in 2019. In the city of Huntsville, o**ver 287 pedestrian accidents have occurred in the area over the past 5 years. Figure depicts the number of pedestrian accidents reported to the Huntsville Police Department between 2010 and 2015.

Table 3. Pedestrian Accidents in Huntsville, AL from 2015 - 2019



Source: City of Huntsville Traffic Engineering

FUTURE TRENDS

E-BIKES

The Past few years have seen a marked increase in the number of electric bicycles (or "e-bikes") in the U.S. E-bikes are most frequently "pedal-assist" or "muscle-assist," meaning the rider must be pedaling for the electric motor to engage. E-bikes may also come equipped with a throttle that allows the bike to be propelled without pedaling. The bicycle's low-speed electric motor provides a boost of power to climb hills, extend the range of trips where a bicycle can be used, allow current bicycle users to bike more often and farther, provide a new recreation option for people who want to bike and in general, extend the range of any ride.

Low-speed e-bikes are as safe and sturdy as traditional bicycles and move at speeds similar to conventional bikes. E-bikes are emissions-free, low impact and operate silently. E-bikes vary widely in terms of shape and size, but the different types closely align with those of regular bicycles. E-bikes resemble traditional bicycles in both appearance and operation and do not function similarly to mopeds, scooters and other motorized vehicles.

According to a 2018 bicycle industry analysis, e-bikes sales increased 83 percent between May of 2017 and May of 2018, and e-bikes made up 10 percent of overall bikes sales in the U.S. for that time period. While the Asian and European e-bike markets are more robust, industry advocates hope to continue to expand U.S. e-bike sales. Most major U.S. bicycle brands sell e-bikes, and bicycle manufacturers have moved or are positioning themselves to move to the U.S. to capitalize on the growing market.

Electric bicycles cost on average $2,000 - $3,000, versus a $1,000 average investment for a mid-range traditional commuter bicycle. An investment in an electric bicycle is appealing to those who are looking to replace short trips typically made by car, therefore the investment can be justified if the buyer factors in the reduced cost of car maintenance and fuel. Reasons for purchasing an e-bike vary, with some looking for a cheap commuting mode

and others looking for a less physically demanding bicycle option or help bicycling through hilly areas.

E-bikes may also provide a more attractive and feasible choice to take short trips. According to U.S. Department of Transportation survey data, half of all trips in the U.S. are three miles or less in length, a distance widely regarded as bikeable for most adults and even more feasible for electric bicycle riders. Seventy-two percent of those trips are currently made by cars and fewer than 2 percent by bicycle. E-bikes also provide a new transportation and recreation option for people with disabilities and those with physical limitations

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COVID 19

COVID-19 literally took the nation by storm and wreaked Havoc on nearly every aspect of the economy except Bicycling. After cities were shutting down during the late winter early spring of 2020, the general population took to the road on bicycles and simply created a overwhelming demand for the 2 wheelers, and thus sales are through the roof. This unfortunate event has actually created a whole new generation of cyclist that hasn't been in this country since the 1970's. This only will cause cities to focus on creating more bike facilities and create more bike friendly cities in the near future.

Some bicycle enthusiasts, advocates and industry analysts are wondering if some U.S. cities are on the brink of a bicycle revolution. The combination of the coronavirus, shelter-in-place orders that kept cars and trucks off the roads, and a swell in activism have brought bicycle riders out in record numbers and made many reimagine city and suburban life — without the cars, traffic and polluted air. From March through mid-June 2020, Eco-Counter — a Montreal-based engineering company that designs and provides bicycle and pedestrian counters, and analyzes data — measured a 21% increase in U.S. urban-area ridership compared with the same timeframe in 2019. During that same period, the Rails-to-Trails Conservancy saw a 110% increase in ridership on rail-trails compared to the same time in 2019. According to a weekly PeopleForBikes survey of 932 U.S. adults, 9% of American adults say they rode a bike for the first time in a year, because of the pandemic. And a majority of those riders say they will continue riding after

shelter-in-place orders are removed.In addition, roughly 42% of those "reactivated" riders have children. Also given the widespread cancellation of youth sports programs, bike riding is one of the few outdoor activities that kids of all ages can safely and practically participate in safely. Recreational bicycle orders are now taking weeks, if not months, to complete. Many production facilities had to shut down" during the pandemic, Add that to a slump in trade with China, where many bicycle parts and components are manufactured, and the dearth is not surprising. For the North American division of the Japanese bicycle component manufacturer Shimano, sales for this company's products were also in high demand. "New riders are getting into cycling, or people are returning to cycling by fixing and using their existing bicycles. According to PeopleForBikes data, bike sales were up substantially from last year — 65% greater than year-to-date 2019. "The last three months stand as perhaps the best quarter for the bike industry in the last 50 years.

BICYCLE ADVISORY AND SAFETY COMMITTEE

The Huntsville Bicycle Advisory Safety Committee was formed in 2001 to assist the City of Huntsville Planning Division in planning and developing non-motorized transportation facilities and programs, including but not limited to, bicycle routes, lanes, paths and bikeway plans. The purpose of this committee is to encourage and coordinate efforts to improve conditions for bicycling within the Huntsville community. These coordinated efforts involve assessing and proposing preliminary plans and standards that will ultimately enhance non-motorized transportation facilities and projects throughout the city of Huntsville.

The BASC is a collaboration of interested citizens, bicycle organizations, bicycle shops, safety associations, and professional and technical staff members from the city of Huntsville. A meticulous process of establishing members for the committee was taken to ensure that all interested stakeholders had a viable role in implementing plans to improve conditions for bicycling in the city. The BASC is not a standing committee and its members are selected to serve only during the revision process of updating the City of Huntsville Bikeway Plan. While serving on the committee, members of the BASC are to fulfill three primary roles:

- Assist in the development of the bikeway plan for approval by the Planning Commission
- Participate in planning sessions in which proposed bikeway facilities are identified and reviewed, and citizens' ideas and concerns are incorporated into the development of the community bikeway plan
- Serve as a liaison between the planning staff and the community to inform citizens of the progress of the bikeway plan and encourage the support of future bikeway projects

Members representing the bicycle organizations, bicycle shops, and citizens at large positions must be residents of the city of Huntsville. The total membership of the committee may not exceed 20 members. Table 3.1

outlines the minimum membership requirements for the Huntsville Bicycle Advisory Committee.

Table 4: Minimum Membership Requirements

Number of Members	Affiliation	Description
2	Bicycle Organization	Members who promote bicycling as members of an organized bicycling association
1	Bicycle Shop	Member who sells or repairs bicycles and bicycle safety equipment
5	Citizens at Large	One member per council district within the city of Huntsville
1	Planning Commission	Member who is knowledgeable of the growth and development of the city
2	Planning	Prepares and updates plans governing bicycle/pedestrian use
1	Engineering	Offers insight on city policy for roadway infrastructure
1	Legal	Provides legal insight for proposed facilities and programs
1	Police Department (Bicycle Patrol)	Offers knowledge of bicycle and pedestrian accident reports within the city
1	Parks and Recreation	Provides insight on recreational services for facility and program implementation

Through the establishment of the Huntsville Bicycle Advisory Committee, it is the objective of the City of Huntsville Planning Division to encourage citizen participation for the implementation of non-motorized transportation facilities and programs for the city of Huntsville. The City of Huntsville Planning Division encourages communication and cooperation with all citizens expressing interests in the implementation of non-motorized transportation facilities and programs.

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Requirements for Bicycle and Pedestrian Travel

Both the Federal Highway Administration (FHWA) and the MPO have established requirements for bicycle and pedestrian travel.

FHWA Requirements

According to an updated verbatim FHWA directive in Oct 2019, MPOs must consider at a minimum, accommodating bicycle and pedestrian needs as identified below:

- 23 United States Code 217 states that "Bicyclists and pedestrians shall be given due consideration in the comprehensive transportation plans developed by each metropolitan planning organization and State."

- FHWA guidance on this issue states that "due consideration" of bicycle and pedestrian needs should include, at a minimum, a presumption that bicyclists and pedestrians will be accommodated in the design of new and improved transportation facilities. In the planning, design, and operation of transportation facilities, bicyclists and pedestrians should be included as a matter of routine, and the decision not to accommodate them should be the exception rather than the rule. There must be exceptional circumstances for denying bicycle and pedestrian access either by prohibition or by designing highways that are incompatible with safe, convenient walking and bicycling.

Exceptional circumstances are defined below:

- If bicyclists and pedestrians are prohibited by law from using the roadway. In this instance, an effort may be necessary to accommodate bicyclists and pedestrians elsewhere within the right-of-way or within the same transportation corridor.

- If the cost of establishing bikeways or walkways would be excessively disproportionate to the need or probable use. Excessively disproportionate is defined as exceeding twenty percent of the cost of the larger transportation project. This twenty percent figure should be used in an advisory rather than an absolute sense.

In order to comply with these requirements, the MPO long range transportation plans must, at a minimum:

- Consider the context of the project setting. In other words, MPOs should consider whether the general project area includes features like neighborhoods, shopping, schools, transit, or other facilities likely associated with the needs of bicyclists or pedestrians;

- Consider any evidence of existing, informal bicycle-pedestrian activities. An example could be a worn, dirt path along an existing road;

- Consider any reference to bicycle or pedestrian needs in the planning process for the project area;

- Consider public, agency, or other comments requesting such facilities;

- Include maps and other appropriate documentation; e.g., project listing tables, identifying specific bicycle-pedestrian projects proposed in the long range transportation plan. The maps and documentation should be consistent with the treatment of traditional highway projects in the long range transportation plan; and

- Include a policy statement that bicycling and walking facilities will be incorporated into all transportation projects unless exceptional circumstances exist.

Additional Huntsville MPO Requirements

The Huntsville Area MPO has carefully considered the appropriateness of the areas designated for bicycle and pedestrian travel. The Huntsville Area MPO intends to create a mobility system for its citizens that will realize long term cost savings in terms of improved public health, reduced fuel consumptions, reduced demand for single occupancy motor vehicles and increase public safety through the Complete Street program. According to Smart Growth America, Complete Streets are roads that are designed and operated to enable safe access for all users, including pedestrians, bicyclists, motorists

and transit riders of all ages and abilities. They can benefit all communities, regardless of whether they are rural, suburban or urban. Complete Streets are intended to be safe, comfortable, and convenient for all users regardless of age or ability—motorists, pedestrians, bicyclists, and public transportation riders. To meet this goal, the MPO gives full consideration to non-motorized transportation facilities designed for bicyclists and pedestrians, when planning for new construction and the reconstruction of transportation facilities. Examples include, but are not limited to the following:

- Sidewalks are required on both sides of newly constructed or widened streets.
- Sidewalk construction shall be required at the time of construction or widening.
- All new roads designed with shoulders will be required to have smooth, paved shoulders. Rumble strips will be optionally applied, if necessary, not to interfere with bicycle use of shoulders.

List of Planned Bicycle and Pedestrian Projects

In addition, other factors are considered in the feasibility of bicycle and pedestrian projects. These factors include traffic volume, connectivity, cost, land acquisition and safety. Currently, the Huntsville Area MPO has federal and local funds allocated for planned transportation enhancement projects aimed at increasing the quality of life for bicyclists and pedestrians. The City of Huntsville, through capital funding, allocates $400,000 per year in sidewalk construction and sidewalk improvement projects. displays the Huntsville MPO future transportation projects in the **Year 2045 Transportation Plan** and how these projects will address or consider bicycle and pedestrian travel. The projects identified in for which bicycle and pedestrian use are considered, are reflected in the following pages.

Projects listed in **Table 5** are identified as paved bike lanes, road diets/protected bike lanes, sidewalks, paved shoulders, share the road bike route, greenways (shared use paths), green streets, and pedestrian corridors. These projects can be further defined as follows:

- Paved Bike Lane: A corridor expressly reserved for bicycles existing on a street or roadway in addition to any lanes for motorized vehicles.
- Road Diet/Protected Bike Lanes: A typical road diet serves to reduce the number of lanes on a roadway and a barrier is placed between the driver and the cyclist to improve safety for pedestrians and bicyclists.
- Paved Shoulders: Refers to the part of the highway that is adjacent to the regularly traveled portion of the highway and is on the same level as the highway.
- Share the Road/Bike Routes: A facility shared with motorists and
- identified only by signs. A bicycle route has no pavement markings or lane stripes. A street which is recommended for bicycle use but does not have a specific area designated within the right of way.
- Sidewalk: An improved pedestrian surface that is typically located adjacent to a roadway.
- Greenway (Shared-Use Path): A linear park, alternative transportation route, or open space conservation area that provides passive recreational opportunities for pedestrian and/or bicycle paths.
- Pedestrian corridors: A pedestrian system from the edge of the roadway

to the edge of the right-of-way, generally along the sides of streets, between street corners.

Bicycle Routes and Sidewalks projects are displayed in this section as well. These projects include the installation of bicycle route signs in order to accommodate bicyclists. **Tables 6,7 and 8** beginning on page 63 displays the sidewalk improvement projects that are associated with capacity adding roadway improvements listed in as well as the greenway projects that are committed in the MPO area.

All paved bike lanes, share the road/bike routes, and sidewalks will be constructed on both sides of the street. Greenways, shared use paths, pedestrian corridors, and green streets will be constructed on one side of the street, or will provide a single transportation route beside or near the planned road improvements listed below. Additional details concerning the exact placement of greenways, green streets, and pedestrian corridors will not be known until engineering design can begin. Several corridors have been identified that cannot accommodate bicycles and pedestrians because the corridor is a limited access or controlled access roadway, or are U.S. routes and carry high volumes of traffic.

These following corridors are planned as limited or controlled access facilities, include frontage or service roads, and overpasses and do not include bicycle/pedestrian accommodation due to these special circumstances:

TABLE 5

BICYCLE AND PEDESTRIAN PROJECTS

PR. #	PROJECT	JURISDICTION	PROJECT TYPE	DESCRIPTION
1	Greenbrier Parkway	City of Huntsville	Capacity	From North of I-565 to Huntsville Browns Ferry Rd.
2	Hobbs Island Road	City of Huntsville	Capacity	Provide paved bike shoulders from US 231 to US 431
3	Northern Bypass Ph 2	City of Huntsville	Capacity	Provide paved bike shoulders from 1.2 miles East of CR-86 (Pulaski Pike) to 1500' East of the US 231/431 Intersection
4	Northern Bypass Ph 3	City of Huntsville	Capacity	Provide paved bike shoulders from 1500' East of the US 231/431 Intersection to Winchester Rd
5	Patton Road	City of Huntsville	Capacity	Provide paved bike shoulders from Martin Rd to Redstone Rd. Contingent upon coordination with Redstone Arsenal, as this project is on a federal military installation.
6	Ryland Pike	Madison County	Maintenance & Operations	Install Bike Route Signs on Ryland Pike from Jordan to Dug Hill Road.
7	Homer Nance Rd	Madison County	Capacity	Install Bike Route Signs on Homer Nance Rd from Jordan Rd to Winchester Rd
8	Jordan Rd (Ph1)	Madison County	Capacity	Install Bike Route Signs on Jordan Rd from Homer Nance Rd to U.S. 72 Corridor V
9	Jordan Rd (Ph 2)	Madison County	Capacity	Install Bike Route Signs on Jordan Rd from Moores Mill Rd to Homer Nance Rd.
10	Kellner Rd	City of Madison	Capacity	Install Bike Route Signs on Kellner Rd from Kellner Rd to Zierdt Rd.
11	Old 431 Highway	Madison County	Capacity	Install Bike Route Signs on Old 431 Highway from Highway 431 to Wilson Mann Rd.
12	Old Big Cove Rd	Madison County	Capacity	Install Bike Route Signs on Old Big Cove Rd from Highway 431 to Sutton Rd.
13	Old Big Cove Rd	Madison County	Capacity	Install Bike Route Signs on Old Big Cove Rd from South Green Mtn Rd to Highway 431.
14	Plummer Rd	City of Huntsville	Capacity	Install Bike Route Signs on Plummer Rd from Jordan Lane to Indian Creek Rd.
15	Shields Rd	City of Hsv/Madison County	Capacity	A Bike Route currently exists for this project
16	Swancott Rd	City of Huntsville	Capacity	A Bike Route currently exists for this project
17	Taylor Road	City of Huntsville	Transportation Alternative	Construct a 3.05 mile protected bike lane from Sutton Rd to Old Big Cove Rd

19	Technology Drive	City of Huntsville	Transportation Alternative	Construct a .53 mile protected bike lane from Wynn Dr to Sparkman Drive
20	Wynn Drive	City of Huntsville	Transportation Alternative	Construct a 2.79 mile protected bike lane from Adventist Blvd to Old Madison Pike
21	Taylor Lane	City of Huntsville	Transportation Alternative	Construct a .53 mile protected bike lane from Taylor Road to US 431 South
22	Washington Street	City of Huntsville	Transportation Alternative	Construct a 1.58 mile protected bike lanes from Sparkman Dr to Pratt Ave
23	Bailey Cove Road	City of Huntsville	Transportation Alternative	Construct a 5.44 mile protected bike lane from Carl T. Jones Dr to Green Cove Rd
24	Bradford Drive	City of Huntsville	Transportation Alternative	Construct a 1.97 mile protected bike lane from Explorer Blvd east to Sparkman Dr
18	Blue Springs Road	City of Huntsville	Transportation Alternative	Construct a 3.14 mile protected bike lane from Oakwood Ave North to Winchester Road
25	Meridian Street	City of Huntsville	Transportation Alternative	Construct a 6.77 mile protected bike lane from US 231 to Winchester
26	Holmes Avenue	City of Huntsville	Transportation Alternative	Construct a 2.71 mile protected bike lane from Memorial Pkwy west to Sparkman Dr
27	Triana Boulevard	City of Huntsville	Transportation Alternative	Construct a 2.65 mile protected bike lane from Holmes Ave to Johnson Rd
28	Johnson Road	City of Huntsville	Transportation Alternative	Construct a 1.26 mile protected bike lane from Triana Blvd to Memorial Parkway
29	Green Cove Road	City of Huntsville	Transportation Alternative	Construct a 1 mile protected bike lane from Memorial Parkway to Bailey Cove Rd
30	Maysville Road	City of Huntsvile	Transportation Alternative	Construct a 1.75 mile protected bike lane from US 72 East southward to Oakwood Ave

Table 6

HUNTVILLE MPO BICYCLE AND PEDESTRIAN SIDEWALK PROJECTS				
1	AL Hwy 53	State of Alabama	Capacity	Provide sidewalks from AL HWY 255 to north of Harvest Rd
2	AL Hwy 53	City of Huntsville	Capacity	Provide sidewalks from North of Harvest Rd to Old Railroad Bed Rd
3	AL Hwy 53	City of Huntsville	Capacity	Provide sidewalks from Old Railroad Bed Rd to Limestone County Road 117 (Pinedale Rd)
4	AL Hwy 53 Relocation	State of Alabama	Capacity	Provide sidewalks from Limestone County Rd 117 (Pinedale Rd) to I65/SR53 Interchange
5	Balch Rd	City of Huntsville	Capacity	Provide sidewalks from Mill Road to Gooch Lane
6	Balch Rd Ext	City of Madison	Capacity	Provide sidewalks from Mill Road to Madison Blvd
7	Beadle Ln	City of Huntsville	Capacity	Provide sidewalks from Swancott Rd to Zierdt Rd
8	Blake Bottom Rd	City of Huntsville	Capacity	Provide sidewalks from Jeff Rd to Research Park Blvd
9	Browns Ferry Rd	City of Huntsville	Capacity	Provide sidewalks from Mooresville Rd to County Line Rd
10	Capshaw Rd	City of Huntsville	Capacity	Provide sidewalks from Jeff Rd to Old Railroad Bed Rd
11	Church St	City of Huntsville	Capacity	Provide sidewalks from Monroe St to Pratt Ave
12	County Line Rd Realignment	City of Huntsville	Capacity	Provide sidewalks from County Line Rd to Swancott Rd
13	Eastview Dr	City of Huntsville	Capacity	Provide sidewalks from Slaughter Rd to Hughes Rd
14	Greenbrier Parkway Ph3	City of Huntsville	Capacity	Provide sidewalks from north of I-565 to Browns Ferry Road
15	Hobbs Island Rd	City of Huntsville	Capacity	Provide sidewalks from US- 231 to US-431
16	Homer Nance Rd	Madison County	Capacity	Provide sidewalks from Jordan Rd to Winchester Rd
17	Hughes Rd Ext	City of Madison	Capacity	Provide sidewalks from Brogan Dr to Wall Triana Hwy
18	Jeff Road	Madison County	Capacity	Provide sidewalks from Back Nine Rd to Douglass Rd

TABLE 7

HUNTSVILLE MPO

BICYCLE AND PEDESTRIAN SIDEWALK PROJECTS

PR. #	PROJECT	JURISDICTION	PROJECT TYPE	DESCRIPTION
19	Jeff Road	Madison County	Capacity	Provide sidewalks from Douglass Rd to AL Hwy 53
20	Jordan Rd Ph 1	Madison County	Capacity	Provide sidewalks from Homer Nance Rd to US 72
21	Jordan Rd Ph 2	Madison County	Capacity	Provide sidewalks from Moores Mill Rd to Homer Nance Rd
22	Kellner Rd	City of Madison	Capacity	Provide sidewalks from existing Kellner Rd to Town Madison
23	King Drake Rd- US 431 Connector	City of Huntsville	Capacity	Provide sidewalks for new road construction from US 431 to King Drake Rd
24	Martin Rd	City of Huntsville	Capacity	Provide sidewalks from Old Jim Williams Rd to Zierdt Rd
25	Martin Rd	City of Huntsville	Capacity	Provide sidewalks from Old Jim Williams Rd to Laracy Dr
26	Meridian St	City of Huntsville	Capacity	Provide sidewalks from Winchester Rd to US 231/431
27	Moontown Rd	City of Huntsville	Capacity	Provide sidewalks from Ryland Pike to US 72
28	Moores Mill Rd	City of Huntsville	Capacity	Provide sidewalks from Winchester Rd to Countess Road
29	Mount Lebanon Rd	City of Huntsville	Capacity	Provide sidewalks from Grimwood Rd to Northern Bypass
30	Nance Rd	City of Huntsville	Capacity	Provide sidewalks from McCrary Rd to Capshaw Rd
31	Northern Bypass Ph 2	City of Huntsville	Capacity	Provide sidewalks from Swancott Rd to Zierdt Rd
32	Northern Bypass Ph 3	City of Huntsville	Capacity	Provide sidewalks from East of Pulaski Pike to US 231/431
33	Oakwood Ave	City of Huntsville	Capacity	Provide sidewalks from Andrew Jackson Way to Church St
34	Oakwood Rd	City of Huntsville	Capacity	Provide sidewalks from Adventist Blvd to Research Park Blvd
35	Old 431 Hwy	Madison County	Capacity	Provide sidewalks from US 431 S to Wilson Mann Rd
36	Old Big Cove Rd	City of Huntsville	Capacity	Provide sidewalks from US 431 S to Sutton Rd
37	Old Big Cove Rd	Madison County	Capacity	Provide sidewalks from South Green Mountain Rd to Taylor Road

Table 8

HUNTSVILLE MPO

BICYCLE AND PEDESTRIAN SIDEWALK PROJECTS

	PROJECT	JURISDICTION	PROJECT TYPE	DESCRIPTION
38	Old Highway 20	City of Huntsville	Capacity	Provide sidewalks from County Line Rd to Greenbrier Parkway
39	Old Railroad Bed Rd Ph 1	City of Huntsville	Capacity	Provide sidewalks from US 72 to Capshaw Rd
40	Old Railroad Bed Rd Ph 1	City of Huntsville	Capacity	Provide sidewalks from Capshaw Road to AL Hwy 53
41	Patton Rd	City of Huntsville	Capacity	Provide sidewalks from Aero bee Rd to Redstone Rd. Contingent upon coordination with Redstone Arsenal, as this project is on a federal military installation.
42	Plummer Rd	City of Huntsville	Capacity	Provide sidewalks from Jordan Lane to Indian Creek Rd
43	Slaughter Rd	City of Huntsville	Capacity	Provide sidewalks Old Madison Pike to US HWY 72
44	Swancott Rd	City of Huntsville	Capacity	Provide sidewalks from I-565 to County Line Rd
45	Wall Triana Hwy	City of Madison	Capacity	Provide sidewalks from US 72 to Yarborough Road
46	Winchester Rd Ph 2	City of Huntsville	Capacity	Provide sidewalks from Dominion Cr to Naugher Rd
47	Winchester Rd Ph 4	Madison County	Capacity	Provide sidewalks Naugher Road to Bell Factory Rd
48	Winchester Rd Ph 5	City of Huntsville	Capacity	Provide sidewalks from Bell Factory Rd to the State Line
49	Pratt Ave	City of Huntsville	Transportation Alternatives	Provide sidewalk for transit access from Memorial Parkway/US 231 to Church St
50	Putnam Dr	City of Huntsville	Transportation Alternatives	Provide sidewalk for transit access from University Dr to Sparkman Dr
51	Technology Dr	City of Huntsville	Transportation Alternatives	Provide sidewalks for transit access from Wynn Dr to Sparkman Dr
52	Wynn D	City of Huntsville	Transportation Alternatives	Provides sidewalks for transit access from existing sidewalk near Old Madison Pike to US 72

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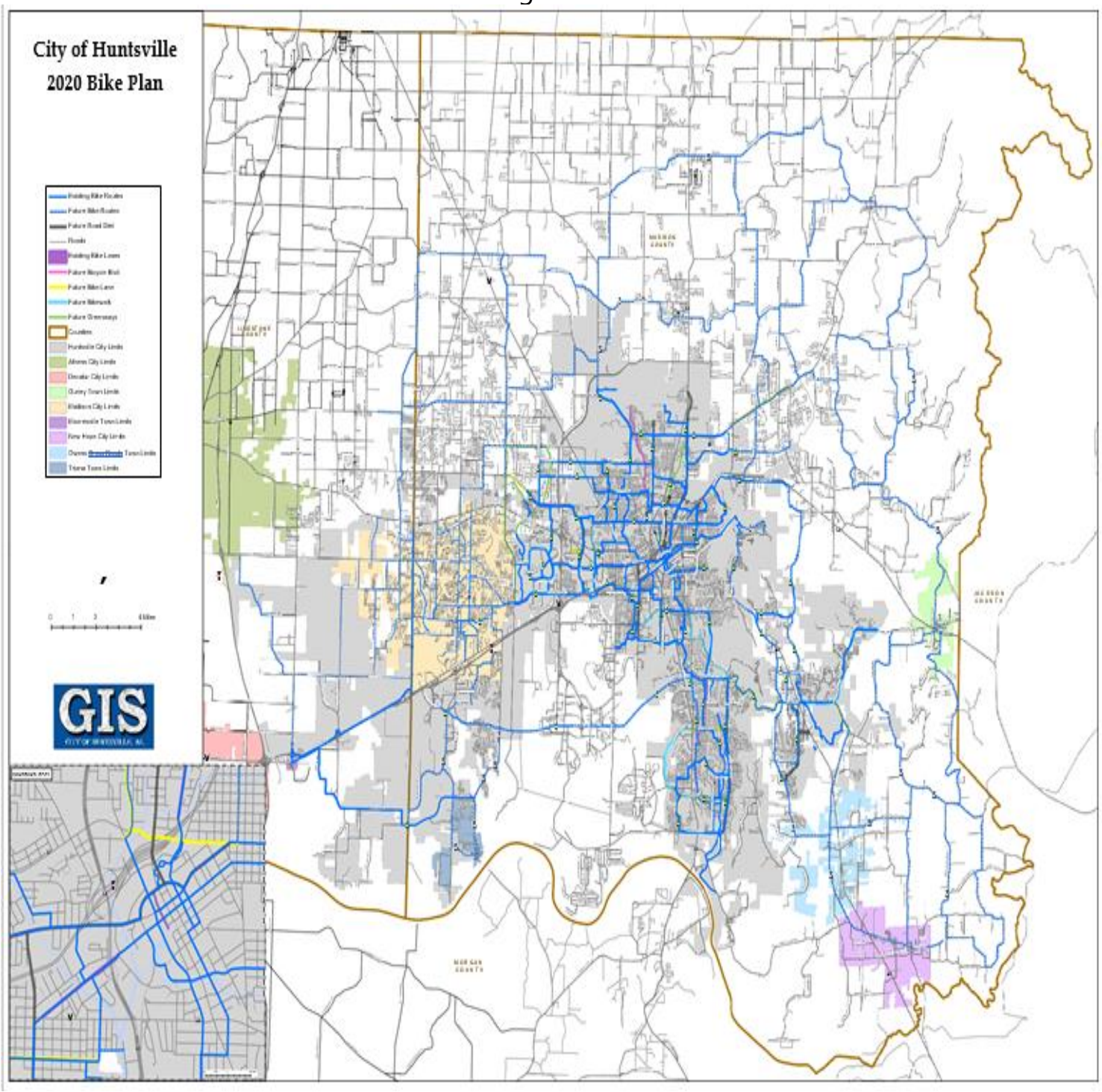
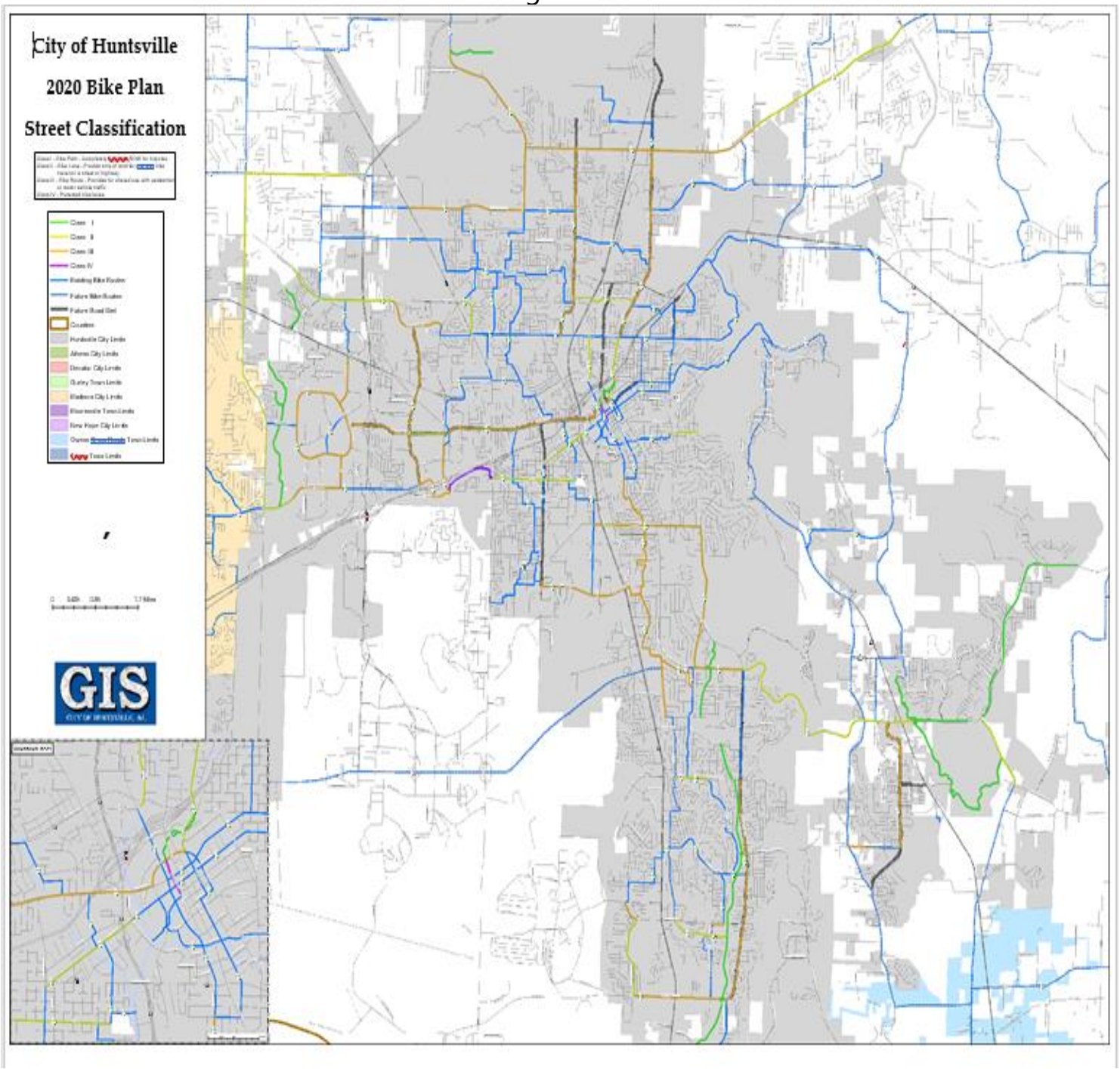
"Last Mile Connectivity" refers to the final mile between destinations and accessible public transit and alternative transportation options. This planning term is used when transportation planners and engineers attempt to find connecting routes between people's origins, destinations, and the closest transit stops at both ends. A radius of one-mile is often drawn around each transit stop and potential bike and pedestrian routes, as well as ADA accessibility, within that mile radius are determined for access between transit and nearby destinations.

The member jurisdictions of the Huntsville-Area MPO each invest in multi-modal infrastructure differently and use methodologies unique to their communities and residents' needs. The City of Huntsville is the only member jurisdiction with a fixed-route public transit system, including bus stops. However, other jurisdictions address last-mile connectivity for residents using alternative modes of transportation to access destinations within one mile. Alternative Modes projects such as greenways, trails, sidewalks, ADA compliance accessibility, bike lanes, scooters, and bike routes all contribute to last-mile connectivity in the MPO Area.

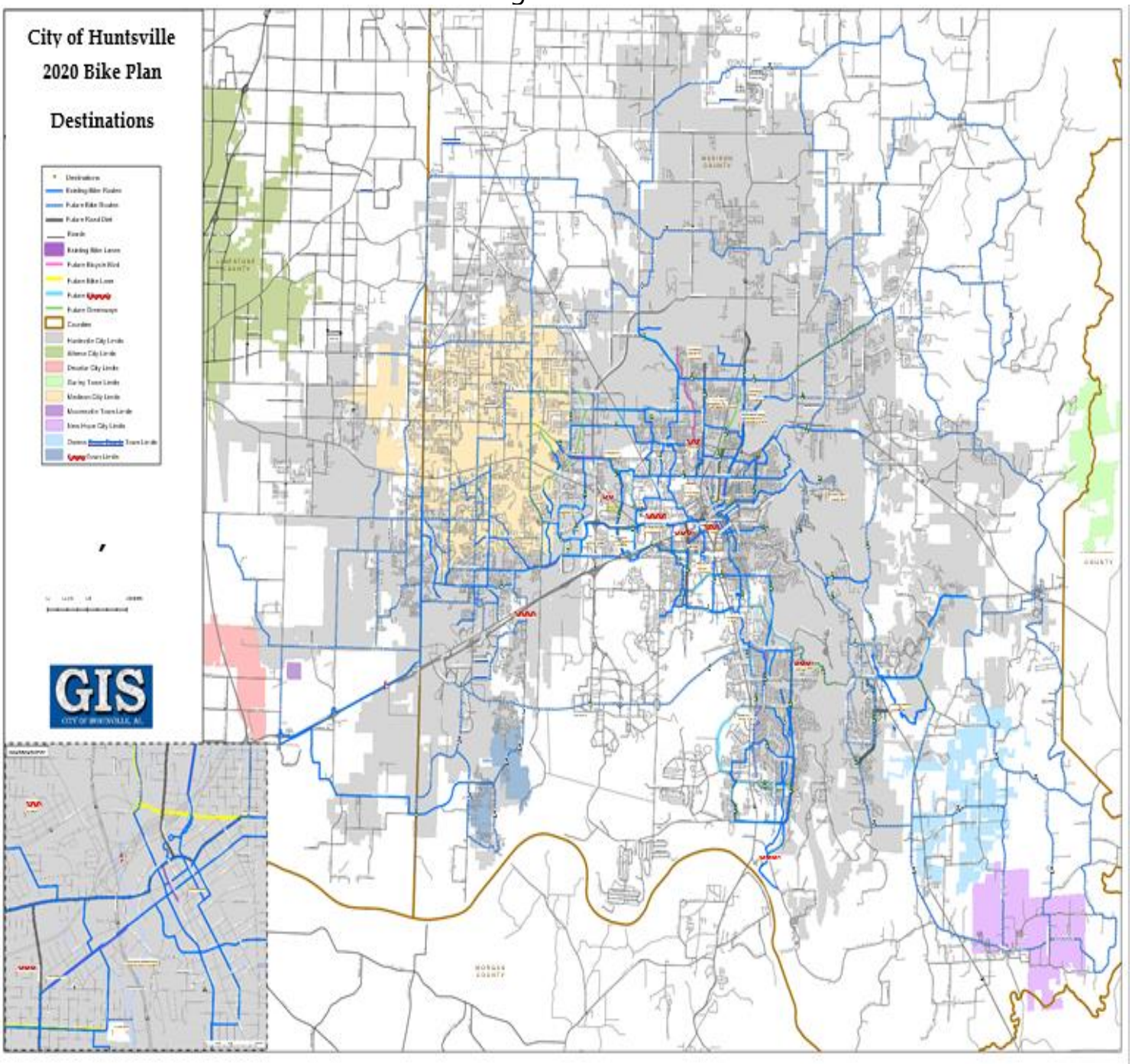
2020 Huntsville MPO Bicycle Map
Figure 1



2020 Huntsville MPO Bicycle Street Classification Map
Figure 2

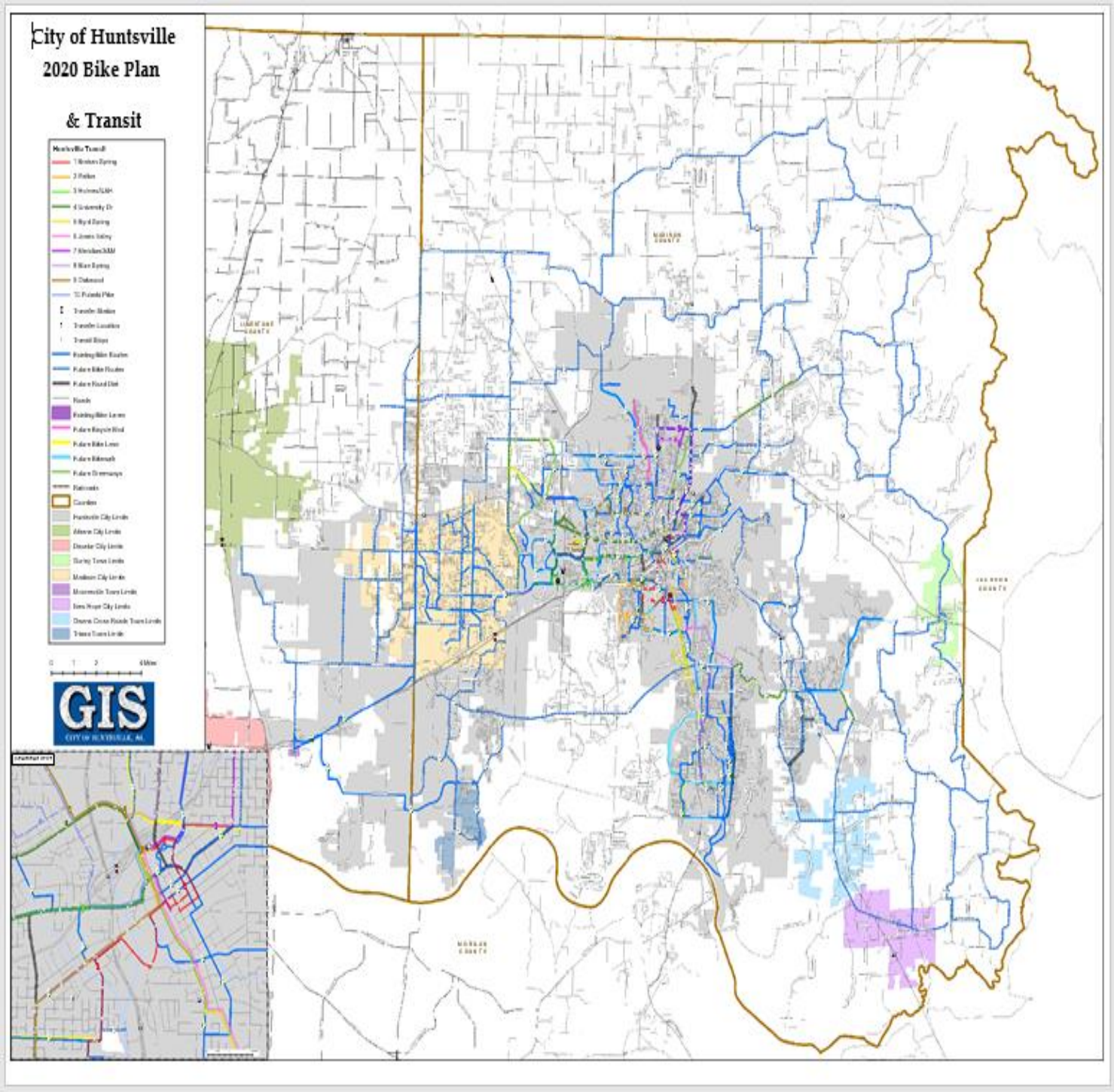


2020 Huntsville MPO Bicycle Destinations Map
Figure 3



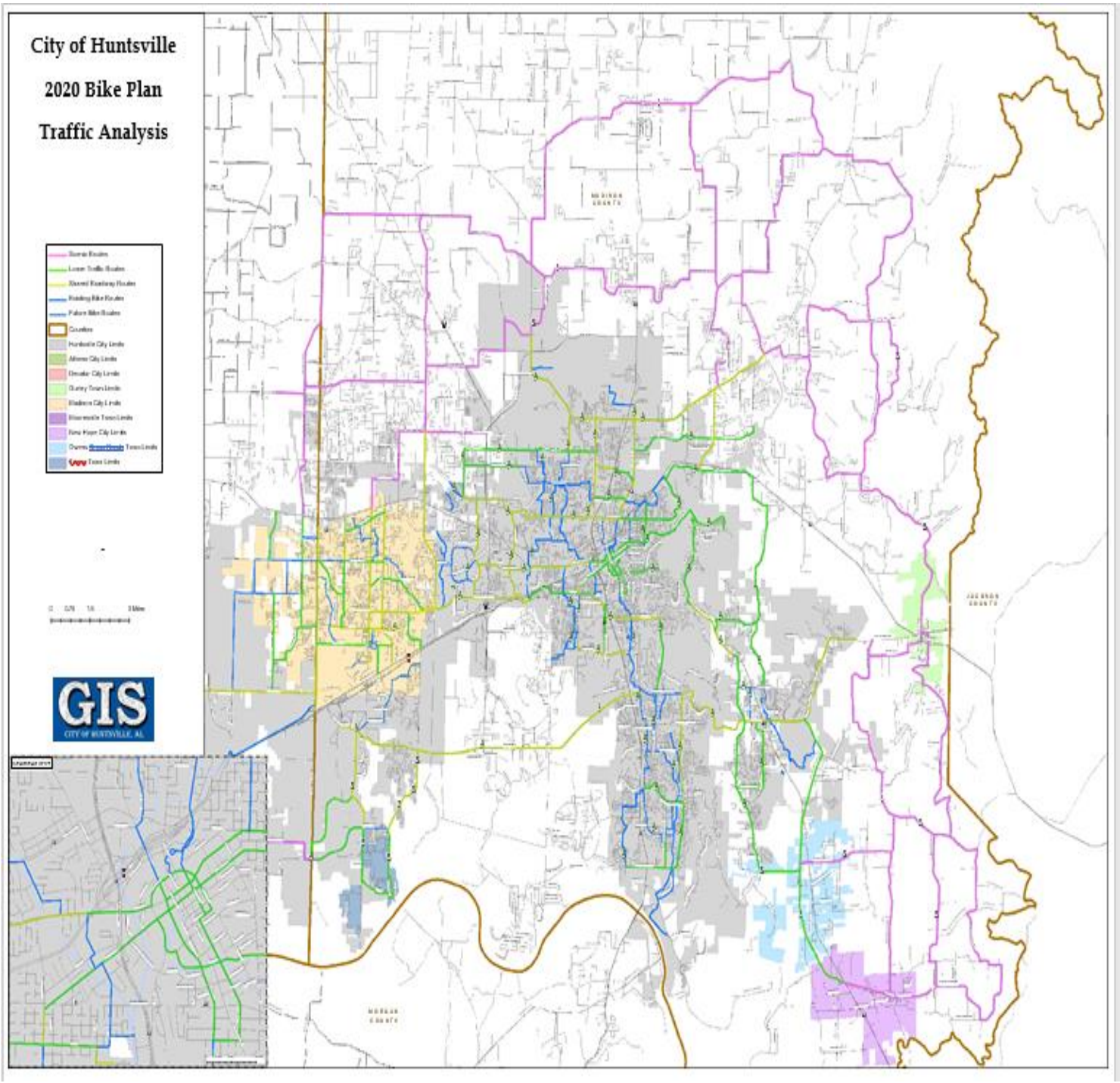
2020 Huntsville MPO Bicycle and Transit Map

Figure 4

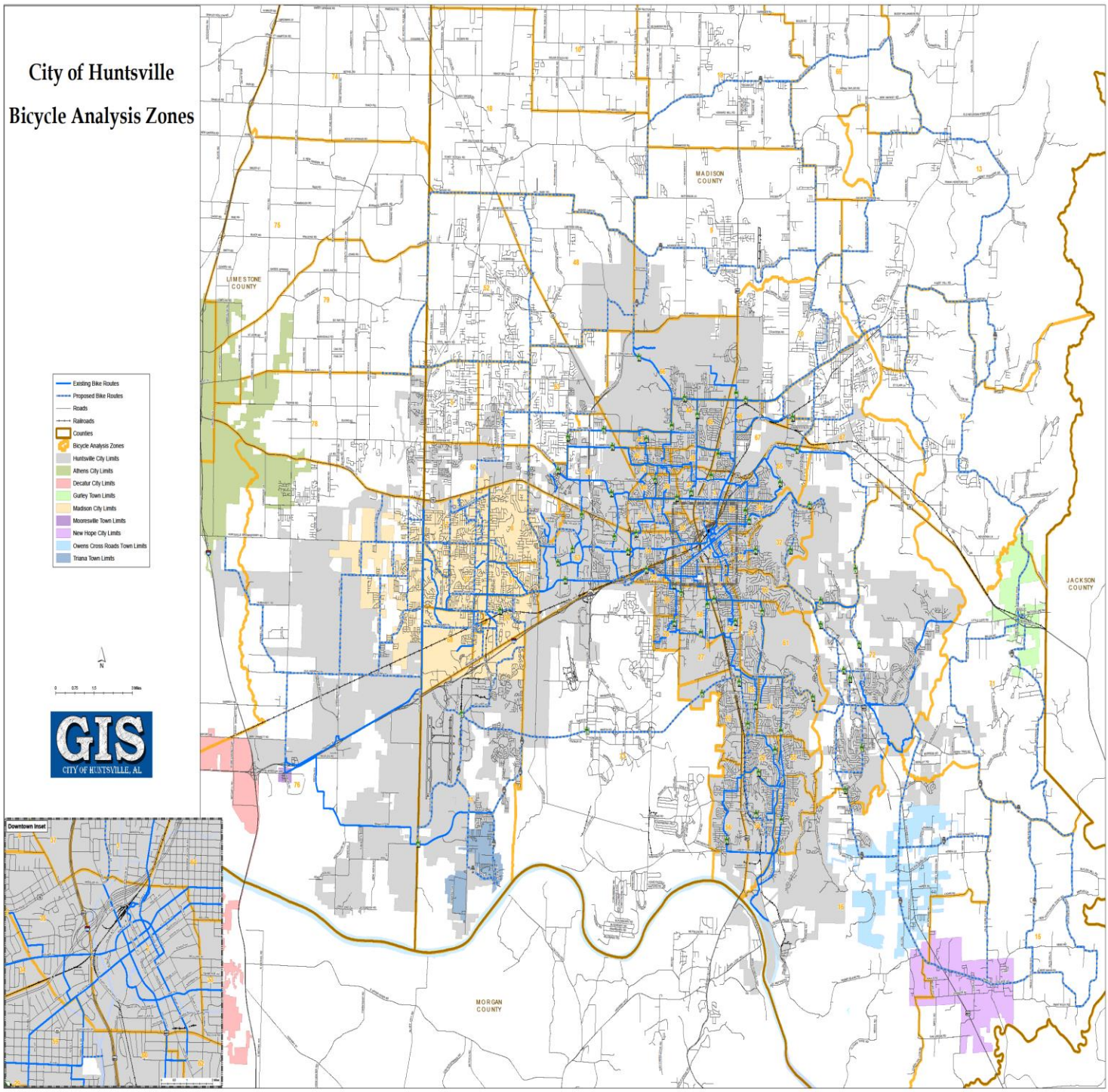


2020 Huntsville MPO Bicycle Traffic Analysis Map

Figure 5



2020 Huntsville MPO Bicycle Analysis Zone Map
Figure 6



GLOSSARY

Bicycling and Pathway-Oriented Terms

Bicycle: Every vehicle propelled solely by human power upon which any person may ride, having two tandem wheels, except scooters and similar devices. The term "bicycle" in this planning process also includes three and four-wheeled human-powered vehicles, but not tricycles for children.

Bicycle Facilities: A general term denoting a variety of improvements and provisions that are made by public agencies to accommodate or encourage bicycling, including bike lanes, shared use pathways, signed bike routes and bicycle parking and storage facilities.

Bicycle Network: A system of public bicycle facilities that can be mapped and used by bicyclists for transportation and recreational purposes.

Bike Lane: A portion of a roadway that has been designated by striping, signing and pavement markings for the preferential or exclusive use of bicyclists.

Bikeway: A generic term for any road, street, path, trail or way, that in some manner, is specifically designated for bicycle travel, regardless of whether such facilities are designated for the exclusive use of bicycles or are to be shared with other transportation modes.

Shared Roadway: A roadway that is open to both bicycle and motor vehicle travel. Unless bicycle travel is explicitly prohibited, all highways, roads and streets are "Shared Roadways." Some Shared Roadways may have wide curb lanes (14’ or greater) or paved shoulders, to increase comfort for bicyclists; however in most cases these roads do not have sufficient width to
accommodate a Designated Bike Lane.

Shared Use Path (or Pathway): A bicycle and pedestrian path separated from motorized vehicular traffic by an open space, barrier or curb. Shared-Use Paths may be within the highway right-of-way (often termed "sidepath") or within an independent right-of-way, such as on an abandoned railroad bed or along a stream valley park. Shared use paths typically accommodate two-way travel and are open to pedestrians, in-line skaters, wheelchair users, joggers and other non-motorized path users. They are typically surfaced in asphalt or concrete, but may have hardpacked/all weather gravel or dirt surfaces as well. To safely accommodate a range of users, Shared Use Paths should be a minimum of 10’ wide (or 8’ in very constrained conditions)

Shoulder: Any portion of a roadway to the right of the right-most travel lane, but not including curbs, planting buffers and sidewalks. Shoulders can have a variety of surface treatments including pavement, gravel or grass. Depending on their width and surface, they

serve a variety of purposes, including providing space for vehicles to slow and turn right, accommodation of
stopped or broken-down vehicles, to allow emergency vehicles to pass, for structural support of the roadbed, or for bicycle and pedestrian travel.

Signed Shared Roadway (Signed Bike Route): A shared roadway that has been designated by signs as a preferred route for bicycle use.

Trail: The word "trail" has come to mean a wide variety of facilities types, including everything from a "marked or beaten path, as through woods or wilderness" to a paved "multi-use trail". The same word "trail" is used to describe hiking trails, equestrian trails, Indian trails or even tourist-oriented driving routes. For this reason, this planning process will not use the word "trail" to reference a facility intended for bicycle Transportation.

Note: Several of these definitions are taken from the American Association of State Highway and Transportation Officials (AASHTO) "Guide for the Development of Bicycle Facilities," 1999 Edition.

Walking and Pedestrian-Oriented Terms

Accessible Pedestrian Signal (APS): A device that communicates information about pedestrian signal timing in non-visual format, through the use of audible tones (or verbal messages) and vibrating surfaces.

Americans with Disabilities Act (ADA): 1990 Federal law establishing the civil rights of people with disabilities. Prohibits discrimination against people with disabilities and requires common places used by the public to provide an equal opportunity for access.

Buffer: That portion of a highway, road or street between the curb-face or edge of the pavement and the sidewalk that provides a spatial buffer between vehicular traffic and pedestrians on sidewalks. Buffers often include landscape plantings such as grass, trees or shrubs, or utility poles, and may also be

referred to as the "planting strip," "landscape buffer," "tree buffer" or
"tree boxes." Buffers can also include barriers such as highway guide rails (guardrails) or bollards. In rural or suburban areas the buffer may be a grassy swale or drainage ditch. In urban areas, downtowns, or on "Main Streets" the buffer may also include street furniture, street signs, fire hydrants, vending boxes, lighting poles, etc.

Crosswalk: The horizontal portion of roadways, usually at intersections, reserved for pedestrian crossing; it may be marked or unmarked. Three marking patterns using white striping are most common: 1) Double Parallel lines, 2) "Zebra Stripes:" white cross hatches perpendicular to the

pedestrian direction of travel, or 3) "Ladder:" perpendicular white cross hatches combined with double parallel lines on the outside edges.

Curb Ramp: A combined ramp and landing to provide access between street level and sidewalk level, usually at intersections or designated crosswalks. ADA accessible ramps must achieve particular design requirements including a running grade no steeper than 1:20. Curb ramps are intended to provide street/sidewalk access to all types of pedestrians, as well as bicyclists who
maybe legally using the sidewalk or crosswalk.

Detectable Warning: A standardized surface feature built in or applied to walking surfaces or other elements to warn people who are blind or visually impaired of specified hazards.

Median Refuge: An area within an island or median that is intended for pedestrians to wait safely away from travel lanes for an opportunity to continue crossing the roadway.

Midblock Crosswalk: A legally established crosswalk that is not at an intersection.

Pedestrian: A person walking or traveling by means of a wheelchair, electric scooter, crutches or other walking devices or mobility aids. Use of the term pedestrian is meant to include all disabled individuals regardless of which equipment they may use to assist their self-directed locomotion (unless they are using a bicycle). It also includes runners, joggers, those pulling or pushing strollers, carriages, carts and wagons, and those walking bicycles.

Pedestrian Access Route: A corridor of accessible travel through the public right-of-way that has, among other properties, a specified minimum width and

cross slope.

Pedestrian Crossing Interval: The combined phases of a traffic signal cycle provided for a pedestrian crossing in a crosswalk, after leaving the top of a curb ramp or flush landing, to travel to the far side of the vehicular way or to a median, usually consisting of the WALK interval plus the pedestrian clearance interval.

Pedestrian Signal Indication: The illuminated WALK/DON'T WALK message (or walking person/hand symbols) that communicates the pedestrian phase of a traffic signal, and their audible and tactile equivalents.

Sidewalk: That portion of a highway, road or street specifically constructed for the use of pedestrians on the outside edge of the vehicular travel way. Sidewalks are typically, but not always, curb-separated from the roadway and made of concrete, brick, asphalt or another hard surface materials

**Note: These definitions are taken from the American Association of State Highway and Transportation Officials (AASHTO) "Guide for the Development of Bicycle Facilities,"

APPENDICES

Appendix A

State of Alabama Bicycle Law

Alabama Code

Section 32-5A-260

Traffic laws apply to persons riding bicycles.

Every person riding a bicycle upon a roadway shall be granted all of the rights and shall be subject to all of the duties applicable to the driver of a vehicle by this chapter, except as to special regulations in this article and except as to those provisions of this chapter which by nature can have no application.

Section 32-5A-261

Riding on bicycles.

(a) A person propelling a bicycle shall not ride other than upon or astride a permanent and regular seat attached thereto.

(b) No bicycle shall be used to carry more persons at one time \

than the number for which it is designed and equipped.

Section 32-5A-262

(c) Wherever a usable path for bicycles has been provided adjacent to a roadway, bicycle riders shall use such path and shall not use the roadway.

Section 32-5A-264

Carrying articles.

No person operating a bicycle shall carry any package, bundle or article which prevents the driver from keeping at least one hand upon the handlebars.

Section 32-5A-265

Lamps and other equipment on bicycles.

(a) Every bicycle when in use at nighttime shall be equipped with a lamp on the front which shall emit a white light visible from a distance of at least 500 feet to the front and with a red reflector on the rear.

(b) Every bicycle shall be equipped with a brake which will enable the

Clinging to vehicles.

No person riding upon any bicycle, coaster, roller skates, sled or toy vehicle shall attach the same or himself to any vehicle upon a roadway.

Section 32-5A-263

Riding on roadways and bicycle paths.

(a) Every person operating a bicycle upon a roadway shall ride as near to the right side of the roadway as practicable, exercising due care when passing a standing vehicle or one proceeding in the same direction.

(b) Persons riding bicycles upon a roadway shall not ride more than two abreast except on paths or parts of roadways set aside for the exclusive use of bicycles.

operator to make the braked wheels skid on dry, level, clean pavement.

Section 32-5A-266

Violations of article as misdemeanor; responsibility of parent or guardian; applicability of article.

(a) It is a misdemeanor for any person to do any act forbidden or fail to perform any act required in this article.

(b) The parent of any child and the guardian of any ward shall not authorize or knowingly permit any such child or ward to violate any of the provisions of this chapter.

(c) These regulations applicable to bicycles shall apply whenever a bicycle is operated upon any highway or upon any path set aside for the exclusive use of bicycles subject to those exceptions stated herein.

Section 32-5A-280

Short title.

This article shall be known and may be cited as the "Brad Hudson-Alabama Bicycle Safety Act of 1995."

Section 32-5A-281

(7) PUBLIC ROADWAY. A right-of-way under the jurisdiction and control of the state or a local political subdivision thereof for use primarily by motor vehicular traffic.

Definitions.

As used in this article, the following words shall have the following meanings:

(1) BICYCLE. A human-powered vehicle with two wheels in tandem design to transport by the act of pedaling one or more persons seated on one or more saddle seats on its frame. "Bicycle" includes, but is not limited to, a human-powered vehicle designed to transport by the act of pedaling which has more than two wheels when the vehicle is used on a public roadway, public bicycle path, or other public road or right-of-way, but does not include a tricycle.

(2) OPERATOR. A person who travels on a bicycle seated on a saddle seat from which that person is intended to and can pedal the bicycle.

(3) OTHER PUBLIC RIGHT-OF-WAY. Any right-of-way other than a public roadway or public bicycle path that is under the jurisdiction and control of the state or a local political subdivision thereof.

(8) RESTRAINING SEAT. A seat separate from the saddle seat of the operator of the bicycle or a bicycle

trailer or similar product that is fastened securely to the frame of the bicycle and is adequately equipped to restrain the passenger in the seat and protect the passenger from the moving parts of the bicycle.

(9) TRICYCLE. A three-wheeled human-powered vehicle designed for use by a child under the age of six.

Section 32-5A-282

Purpose.

The purpose of this article is to reduce the incidence of disability and death resulting from injuries incurred in bicycling accidents by requiring that, while riding on a bicycle on public roadways, public bicycle paths, or other public rights-of-way, all operators and passengers who are under 16 years of age to wear approved protective bicycle helmets, and by requiring that all bicycle passengers who weigh less than 40 pounds or are less than 40 inches in height be seated in separate restraining seats.

Section 32-5A-283

(4) PASSENGER. Any person who travels on a bicycle in any manner except as an operator.

(5) PROTECTIVE BICYCLE HELMET. A piece of headgear which meets or exceeds the impact standard for protective bicycle helmets set by the American National Standards Institute (ANSI) or the Snell Memorial Foundation, or which is otherwise approved by the Alabama Department of Public Safety.

(6) PUBLIC BICYCLE PATH. A right-of-way under the jurisdiction and control of the state, or a local political subdivision thereof, for use primarily by bicyclists and pedestrians.

Unlawful for person to use bicycle under certain conditions.

It is unlawful for any person to use a bicycle on a public roadway, public bicycle path, other public rights-of-way, state, city, or county public park under any one of the following conditions:

(1) For any person under the age of 16 years to operate or be a passenger on a bicycle unless at all times the person wears a protective bicycle helmet of good fit, fastened securely upon the head with the straps of the helmet.

(2) For any person to operate a bicycle with a passenger who weighs less than 40 pounds or is less than 40 inches in height unless the passenger is properly seated in and adequately secured in a restraining seat.

(3) For any parent or legal guardian of a person under the age of 16 years to knowingly permit the person to operate or be a passenger on a bicycle in violation of subdivision (1) or (2).

Section 32-5A-284

The officer shall instruct the child to deliver the written information to the parent.

(2) On the second offense, the police officer shall counsel the child and provide written information on bicycle helmet safety. A warning citation shall be issued to the child to give to the parent. The citation shall instruct the parent or guardian to contact the

Duties of person regularly engaged in business of renting bicycles.

(a) A person regularly engaged in the business of renting bicycles shall require each person seeking to rent a bicycle to provide his or her signature either on the rental form or on a separate form indicating both of the following:

(1) Receipt of a written explanation of the provisions of this article and the penalties for violations.

(2) A statement concerning whether a person under the age of 16 years will operate the bicycle in an area where the use of a helmet is required.

(b) A person regularly engaged in the business of renting bicycles shall provide a helmet to any person who will operate the bicycle in an area requiring a helmet, if the person does not already have a helmet in his or her possession. A reasonable fee may be charged for the helmet rental.

(c) A person regularly engaged in the business of selling or renting bicycles who complies with this article shall not be liable in a civil action for damages for any physical

police department for further information about the law and where to obtain a bicycle helmet.

(3) Beginning on July 1, 1996, upon a third offense, the police officer shall counsel the child, confiscate the bicycle, and take the child to his or her residence. The officer shall then return the bicycle and give a warning ticket to the parent or guardian. If the parent or guardian is unavailable, the ticket shall be left at the residence with instructions to the parent or guardian to pick up the bicycle at the police department.

(4) Beginning on July 1, 1996, upon a fourth offense, the police officer shall confiscate the bicycle, take the child to his or her residence, whereupon a citation for fifty dollars ($50) will be issued to the parent or guardian of the child. No court costs nor fees may be added to the fine or penalty. The fine or penalty shall be waived or suspended if the operator or passenger presents by the court date, proof of purchase or evidence of having provided a protective bicycle helmet or restraining seat and intends to use or causes to be used or intends to cause to be used the helmet as provided by law.

(5) Any fine or penalty monies shall be earmarked and used separately by the

injuries sustained by a bicycle operator or passenger as a result of the operator's or passenger's failure to wear a helmet or to wear a properly fitted or fastened helmet in violation of this article.

Section 32-5A-285

Statewide bicycle safety education program; manner violations handled.

It is the legislative intent to implement an effective statewide bicycle safety education program to reduce disability and death resulting from improper or unsafe bicycle operation. Violations of Section 32-5A-283 shall be handled in the following manner:

(1) On the first offense, the police officer shall counsel and provide written information to the child relative to bicycle helmet safety.

local school system for the purpose of safety education or the local municipality for the purchase of helmets for the financially disadvantaged.

(6) The Traffic Safety Center of the University of Montevallo, in conjunction with the Child Safety Institute at Children's Hospital of Alabama, shall furnish all materials, handouts, brochures, and other information related to bicycle safety used by police departments.

Section 32-5A-286

Establishment of more comprehensive bicycle safety program by ordinance.

A municipality may establish a more comprehensive bicycle safety program than that imposed by this article by local ordinance.

Appendix B

Rules of the Road for Cyclists and Motorists

Sharing Huntsville MPOs Roadways

According to Alabama State Law, "every person riding a bicycle upon a roadway shall be granted all of the rights and shall be subject to all of the duties applicable to the driver of a vehicle..." Therefore, bicycles and automobiles have equal access, as well as, equal responsibility while using roadways. John Forrester, a noted cycling transportation engineer, stated "cyclists fare best when they act and are treated as drivers of vehicles."

The following tips were compiled to assist cyclists and motorists while riding on Huntsville's roadways:

Cyclists

When Sharing with Motorists…

- Always obey traffic laws when riding on public roadways.
- Always were a helmet and light colored, retro-reflective clothing.
- Use a headlight, taillight, and reflectors when riding at night.
- If a bicycle lane or trail exists next to the roadway, use the bicycle lane or trial.
- Never compromise your safety for the convenience of a motorist; ride with confidence and courtesy.
- Never ride against the flow of traffic and where possible, ride in a straight line to avoid weaving in and out of traffic.

When Sharing with Pedestrians…

- Avoid riding on sidewalks unless no other option exists.
- Yield to pedestrians at crossings.
- Use caution where children might be walking.
- Watch for pedestrians on roads that do not have sidewalks.
- When using a recreational trail, always announce yourself when passing a pedestrian and announce your intentions to fellow cyclists.

Motorists

- Always obey traffic laws when riding on public roadways.
- Treat cyclist as you would any other vehicle on the road – it's the law!
- Never pass a cyclist riding in a traffic lane in which they are traveling.
- Never pass a cyclist and immediately turn right.
- Scan traffic intersections for cyclists.
- Never honk, yell, or otherwise harass a cyclist.

- A list of the land use planning objectives and priorities that will impact planning for cyclists in your area.
- A list of opportunities for incorporating cycling into local planning (for example, through sustainable travel
  plans, DCPs, precinct plans, s94 contribution plans or Voluntary Planning Agreements associated with planning or development proposals).

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