

Pedestrian Plan



Kerr-Tar
Regional Council
Of Governments
Regional Transportation
Planning Organization

Town of
Macon

North
Carolina



September 2015

Town of Macon

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A special thanks to the citizens of the Town of Macon for their involvement in our Public Input Meeting and for participating in our Town of Macon Pedestrian Plan Questionnaire.

Additional people and organizations who have played a vital role in helping to develop a Pedestrian Plan for Macon:

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Special Mention to Former Commissioner Benny Hilliard

Macon Town Clerk: Linda Evans

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Part 1: PLAN OVERVIEW

Background

In 2015 the Town of Macon was selected for technical assistance as part of the Kerr-Tar Regional Transportation Planning Organization (KTRPO) Community Planning Outreach for Warren County. After conducting a working group meeting as well as a public input meeting where Macon Pedestrian Plan Questionnaires were distributed, a comprehensive pedestrian plan for the town was undertaken by KTRPO staff to assess and address the various needs identified within the community.

Macon previously adopted the Warren County Comprehensive Transportation Plan (CTP) in March of 2010 which includes recommendations for road widening along US 158 with bypass recommendations for Macon and other towns along the route (CTP, P.19). The Town of Macon Pedestrian Plan recognizes the positive impact that other modes of transportation, such as walking and cycling, can have on the life within and beyond this small community in north central Warren County. The plan seeks to emphasize multimodal opportunities, such as walking and bicycling, for the town's inhabitants and visitors.

Macon is located along US 158, a part of the National Highway System (NHS), with Main Street Macon actually running along this east west route. The town is conveniently located between the county seat of Warrenton and the recreational opportunities of Lake Gaston, with Warrenton being about five miles to the southwest along US 158A and Lake Gaston being about six miles to the north on Eaton Ferry Road (SR 1344). Travelling to the west along US 158, the town is approximately 13 miles from Interstate 85, a vital travel and freight corridor for the southeastern United States.

Incorporated in 1889, the town was named for Nathaniel Macon who was born in 1758 in Warren County. He is buried about six miles east of Macon and during his lifetime was a Revolutionary War soldier, Speaker of the United States House of Representatives, and United States Senator. Macon also is the home town of the noted author and Duke University Professor of English, Reynolds Price.

The community is an old railway town originally created as Macon Depot along the Raleigh Gaston Railway, which is now owned by CSX. The railway was an important factor in the development of Macon. By the early 1900's, Macon had two drugstores, a bank, post office, law office, doctor's office, meat market, telephone office, jailhouse, several garages, two warehouses, a cotton gin, hotel, blacksmith shop, a passenger depot, and nine stores (<http://maconnorthcarolina.com/>). Today, the town's business center still contains some beautiful old buildings remaining from the time when Macon was a bustling link along the railroad, although its focus as an economic hub has diminished. The town is one of three incorporated communities in Warren County and has a Mayor and Board of Commissioners as its governing body.

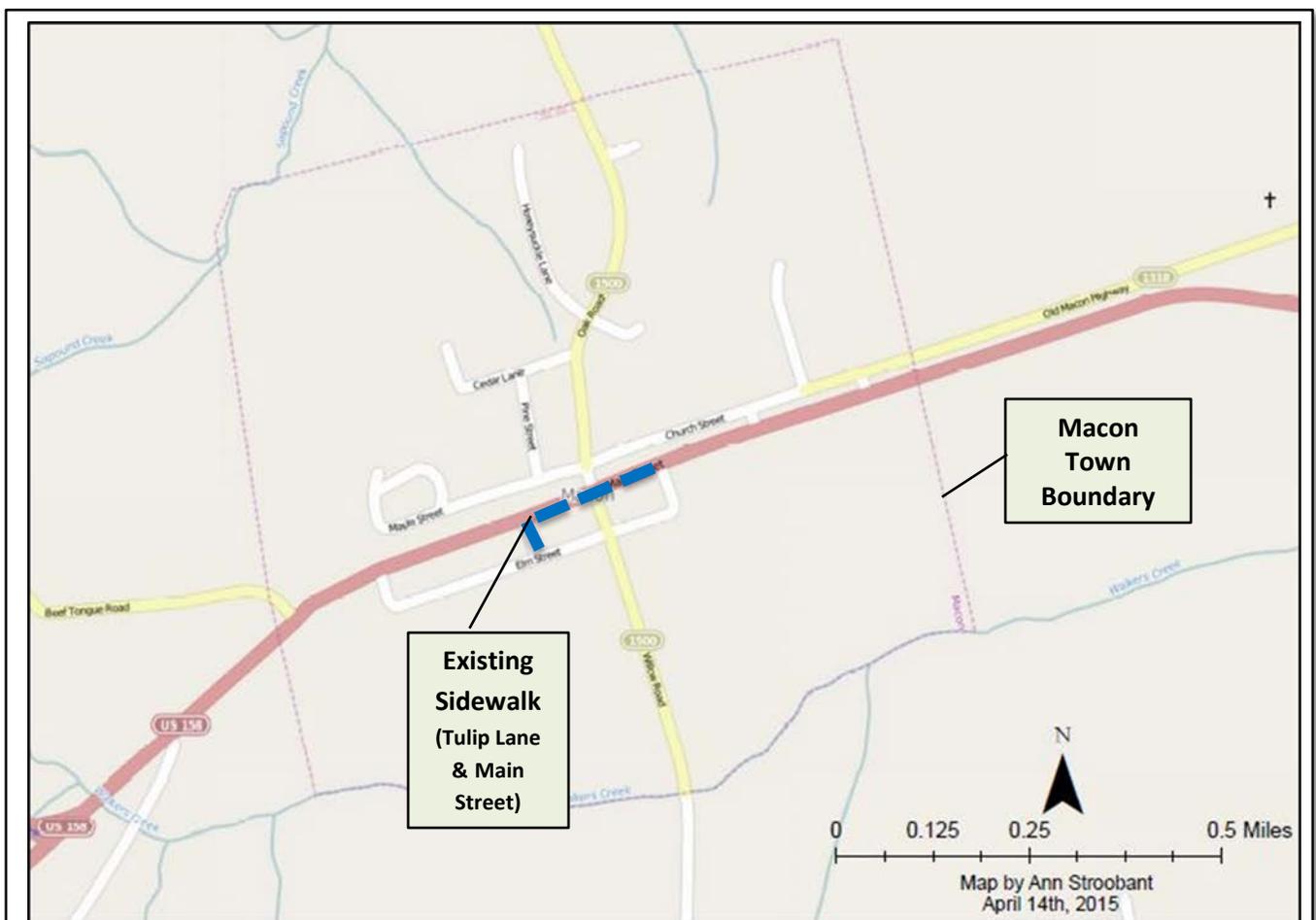
The population of Macon in recent years has increased slightly, rising from 115 individuals at the 2000 Census to 119 individuals at the 2010 Census. Between the years of 2000 and 2010, the population of the town increased 3.36%, a rate slightly lower than Warren County's population increase of 4.76% within the same time period. Currently, the population of Macon has decreased slightly and is approaching the level of the 2000 census with 116 individuals. The 2020 population projection for the town indicates an increase to 136 individuals (US Census 2000, 2010, www.census.gov and ESRI Community Profile, www.esri.com).

According to the most recent 2010 Census, 99.2% of the Macon population reports as one race. The town's racial makeup is 73.7% white with a smaller percentage of residents identifying as black or African American alone at 24.6%. No one identified as American Indian, Asian or Pacific Islander. The remaining 1.7% of the population is Hispanic, identifying as some other race or having a racial make up of two or more races. 15.4% of Macon's residents are under the age of nineteen. 53.0% of the town's population is 55 years of age or older, with a median age of 55.7. In Macon, 23.2% of households earn less than \$15,000 per year in 2015 as estimated by ESRI from the 2010 US Census. The projected number of households in this income bracket decreases slightly to 20.0% in 2020. The median household income in Macon is projected to be \$50,000 in 2015, based on the 2010 census data, and expected to rise to \$52,512 by 2020 (ESRI Demographic and Income Profile, www.esri.com).

Macon residents are passionate about their hobbies, such as hunting, freshwater fishing and working in their vegetable gardens. Generally, Macon people do not pay a lot of attention to advertising and stay with brands that they know, thriftily replacing things as they need them. Many Macon workers are nearing retirement age, are postponing retirement, or are returning to work to maintain their present lifestyles. Macon's housing is mostly owner-occupied, single-family type homes with some mobile homes. (ESRI Tapestry Segmentation Guide, Rural Resort Dwellers, www.esri.com/tapestry). About 6.3% of the town's inhabitants participate in jogging and running with an additional 7.2% participating in bicycling. Over a quarter of the inhabitants, at 27%, indicate that they participate in walking for exercise (ESRI Sports and Leisure Market Potential for Macon Town Projection for 2015, www.esri.com).

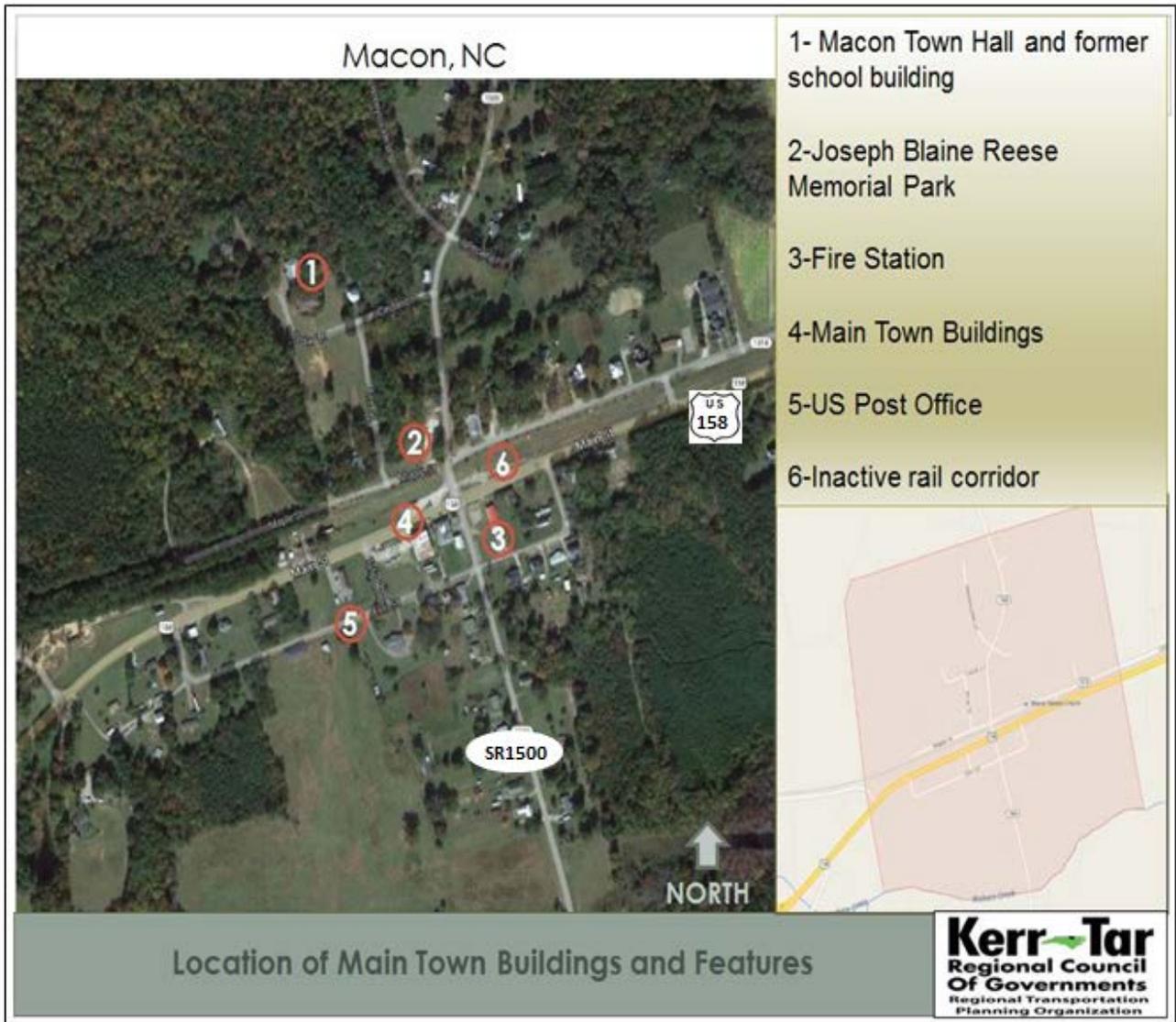
True to its original name of Macon Depot, the Town of Macon today is clustered near the old Raleigh Gaston Railway, with US 158 and SR 1500 forming the major road access in and through the town. Main Street runs parallel to the railway on the south side, with Church Street running parallel to the railway on the north side, both intersecting with SR 1500. The area within the town limits town is roughly square-shaped and covers an area of .73 square miles, with the southern boundary following Walkers Creek. The town center is located at the intersection of Main Street (US 158) with Oak Road to the north and Willow Road to the south (both are on SR 1500). Macon's small town center features several businesses (including a food truck), churches, a lovely local park with play equipment, a fire department, post office and town hall, as well as other private dwellings and historic structures within convenient walking distance of one another.

There are also residential areas and churches outside of the Macon Town Limits within a thirty minute walk of the main town that would benefit from some sort of pedestrian link into the town center. The compact nature of Macon has the potential to enable a pedestrian-oriented lifestyle. This walkable community would greatly benefit from pedestrian improvements which would successfully address the multimodal requirements within the adopted CTP for Warren County, as well as the pedestrian element mentioned within the CTP, but never fully developed (CTP, P.44). Such pedestrian improvements would have the potential to link destinations within the town center to the surrounding neighborhoods, improving pedestrian safety, health and quality of life, as well as providing an affordable nonmotorized transportation choice. The disused railway line, currently owned by CSX, has great potential as a local and regional resource for bicyclists and pedestrians, enhancing tourism and economic development for the town and region.



Macon Map Showing Town Boundary, Street Names and Existing Sidewalk Location





Vision, Scope and Goals

Vision for Macon:

The Town of Macon Pedestrian Plan incorporates the Vision of safe pedestrian connections to town buildings, services, and neighborhoods by improving or creating pedestrian facilities along existing roadway corridors and creating new or repurposing existing off road connections for pedestrians as well as bicyclists, thereby increasing transportation choices and connectivity while improving the quality of life for the Town's inhabitants.

Scope:

The creation of a comprehensive pedestrian plan for the Town of Macon will provide a focus and guide for targeting and applying for funding from local, state, regional and national programs, including non-profit pedestrian programs. The pedestrian plan is intended to enhance pedestrian links and improvements guided by existing and proposed infrastructure in the Warren County Comprehensive Transportation Plan. It should be noted that though the Warren County CTP refers to pedestrians as a viable mode, there is not a Pedestrian Map included in the current CTP. By utilizing Warren County's existing adopted plans such as the Warren County Parks and Recreation Master Plan and the Warren County-2022: Comprehensive Development Plan, in addition to the Town of Macon Pedestrian Plan, it is anticipated that the town will be able to make pedestrian friendly choices for the health of the physical structure of the town as well as its inhabitants. Street tree planting and permeable pavement contributing to sustainable stormwater management can work to complement the pedestrian plan as a whole.

Goals:

It should be emphasized that the Warren County Comprehensive Transportation Plan (CTP) specifically mentions the potential of a multi-modal transportation network that includes other modes of transportation such as bus, rail, bicycle and pedestrian to give the public options in traveling from one place to another. "The NCDOT envisions that all citizens of North Carolina and visitors to the state should be able to walk and bicycle safely and conveniently to their chosen destinations with reasonable access to roadways (CTP, Pp.43-44)." Such multi-modal transportation networks should also improve air quality by reducing single-occupancy vehicle trips.

The goals of the Town of Macon Pedestrian Plan are:

- To identify areas where the needs of the pedestrian are greatest in order to establish funding priority as it becomes available
- To improve local pedestrian connections to nearby services and amenities
- To provide aesthetic improvements in Macon by introducing pedestrian crossings and traffic calming measures where possible
- To increase the number of walking trips undertaken for all transportation purposes and to decrease the number of injuries to pedestrians, benefitting public health
- To contribute to the recreational activity as well as tourist interest created by the North Carolina Lakes District Regional Bike Plan; Warren County, NC Tourism Marketing Plan; Warren County Parks and Recreation Master Plan and Warren County-2022: Comprehensive Development Plan.

It should be noted that the Warren County CTP highway transportation improvements going through the Town of Macon could potentially undermine a pedestrian friendly environment and need careful consideration before implementation. These proposals are listed below.

Listed are projects in the adopted Warren County Comprehensive Transportation Plan (CTP) that may have an impact on pedestrian access and conflict with the objective of building a more pedestrian friendly town. Potential CTP conflicts with the needs of pedestrians must be anticipated and addressed.

Road, rail and bicycle improvements in and around Macon included in the adopted Warren County CTP (Adopted by Macon on October 9, 2007 and Warren County on November 5, 2007) that may have an impact on pedestrian access:

1. US 158 is recommended to be widened to a 4-lane freeway facility with new location bypasses recommended for Littleton, Macon, Norlina and Vaughn (CTP, P.19).
2. The remaining portion of US 158 going through Macon after the bypasses and road widening takes place is identified as an existing "Other Major Thoroughfare (CTP, Sheet 2 of 4)." Accommodation for bicycle and pedestrian access must be included with attention paid to the existing minimal building setbacks in the center of town, allowing for preservation of these buildings as well as the small town atmosphere in the heart of Macon.
3. The railway corridor going through Macon is identified as inactive (CTP, Sheet 3 of 4) and the rails were pulled up in 1984. The CTP states that the corridor is being preserved for future use (CTP, P.43). The potential exists to design a rail-trail for bicyclists and pedestrians providing a local as well as a regional link, extending from Norlina to Roanoke Rapids, though this link has not been identified as such in the CTP.
4. An off road bicycle route segment following the Old Macon Highway (SR1318) east of Macon has been recommended (CTP, Sheet 4 of 4), but the opportunity exists to have a link extending from Norlina to Roanoke Rapids (as in item 3 above).

Benefits of a Pedestrian Lifestyle

Improving pedestrian infrastructure, walkability and connectivity in a community is an important ingredient to the health, well-being and growth of the community itself, including its residents and visitors. Pedestrian planning does require time and effort, but the outcome is well worth the input.

Lower income groups traditionally have the least access to transportation. The ability to get to a job is often impacted by the cost of owning a reliable personal vehicle. According to the American Automobile Association, the cost of operating a small sedan for a year is approximately \$7,962, while walking is basically free (AAA, P.6). The American Public Health Association supports research that shows that transportation investments can have a deep impact on the public health of the elderly, the poor, the disabled and other vulnerable groups. Adverse health impacts such as increased risk of heart disease, asthma and obesity

can be improved by implementing a multimodal transportation system that promotes health and equity in the community by meeting the needs of users of all ages and abilities.

Increasing evidence suggests that the design characteristics of a community have an impact on physical activity, social equity and the ability to age in place, as well as water quality (CDC, P.9). The Center for Disease Control recommends that adults need at least two hours and thirty minutes of a moderate intensity aerobic activity such as brisk walking every week along with muscle strengthening activities. Children and adolescents need at least one hour of physical activity every day (CDC, "Physical Activity for Everyone," www.cdc.gov). The design of a community should allow its inhabitants to safely walk and be able to achieve this health benefit if they desire. Residents of Macon would all benefit from improved walkability for health, safety and financial reasons and would be aided by the implementation of a comprehensive pedestrian plan.

Walking and bicycling as a form of recreation is becoming more and more popular. The Town of Macon has the opportunity to be a participant in a bike route extending from Warrenton through Macon and connecting to a proposed route around Lake Gaston in the North Carolina Lakes District (www.nclakesdistrict.com) forming a part of the North Carolina Lakes District Regional Bike Plan. The North Line Trace/NC Bike Route 4 runs across the state from east to west just south of the Virginia border, following US 158 for part of the route (<http://www.ncdot.gov/travel/mappubs/bikemaps/default.html>). By creating a bicycle and pedestrian friendly environment, tourists are encouraged to visit and patronize local establishments, contributing to recreation based economic development in the region.

Many ingredients contribute to the overall quality of life for the citizens in a community such as Macon. Some of these ingredients are the local education system, quality employment opportunities, and housing affordability. Increasingly, citizens claim that access to alternative means of transportation and nearby recreational opportunities such as parks, trails, greenways, and bicycle routes, are important factors for them in determining their overall pleasure within their locale. Communities that possess these amenities increasingly attract new industries, businesses and new residents. In addition, the benefits of a pedestrian lifestyle positively impact individuals within the community by enabling increased social interactions as people talk to one another and spend more time outdoors, contributing to their overall health and quality of life.

Some benefits of a pedestrian lifestyle:

1. An important ingredient to the health, well-being and growth of the community itself, including its residents and visitors
2. Has a positive impact on physical activity, social equity and the ability to age in place, as well as water quality
3. Contributes to tourism through recreation based economic development
4. Provides a safe and inexpensive way for residents to access local schools, businesses, amenities and destinations

Part 2: CURRENT CONDITIONS

Existing Conditions

Macon Town Center has a compact structure concentrated around the intersection of US 158 and SR 1500 which larger towns would like to copy after experiencing problems related to rapid growth. Macon has great potential to become a walkable and pedestrian friendly community with the addition of a pedestrian infrastructure.

Pedestrian facilities are currently limited on Main Street along US 158, as well as other streets linking to the center of Macon. Pedestrians are forced to walk at the curb edge on the road or on the grass to destinations such as the United States Post Office. Several sidewalks currently exist along parts of Main Street and Tulip Lane which require some refurbishment. However, a network of sidewalks along the town's streets could greatly improve both its walkability and aesthetics. The other main issue that currently impedes walkability in Macon is the lack of dedicated pedestrian road crossings and traffic calming measures. The Average Annual Daily Traffic (AADT) volume measured just outside of Macon on US 158 is 4,400 vehicles and is projected to more than double by 2035 (Warren County CTP, Figure 4).



The Macon Post Office illustrating absence of sidewalk along this portion of Main Street (US 158)



Intersection of US 158 and SR 1500 in Macon Town Center (Main Street and Macon-Embroid Road /Willow Road) showing historic town buildings and existing sidewalk that could be refurbished



View of Macon Town Center buildings in previous photo from Church Street looking toward US 158 and SR 1500 (Main Street and Doc Thompson Road/Oak Road)

The Pedestrian Plan Questionnaire completed in the spring of 2015 mentions the intersections at Main Street (US 158) and Macon-Embryo Road (SR 1500), Elm Street and Macon-Embryo Road, as well as Oak Street (SR1500) and Church Street as the top three intersections needing pedestrian facilities or pedestrian facility improvements. These same areas are again mentioned as the top corridors that need improvement for pedestrian facilities or pedestrian facility improvements as well as Church Street and Maple Street.

The Town of Macon also contains some lovely and potentially historic buildings, churches and residences built during its heyday as a railway town. Many of the older Macon structures have been surveyed by the North Carolina State Historic Preservation Office, including the Macon School and related houses. Examples of such buildings on Main Street near the town center are the double fronted brick building where Macon Auto Sales is located and the Macon General Store. The Edgerton family gave land in the last quarter of the 19th century for the construction of three Macon churches (<http://maconnorthcarolina.com/>). Two of the churches are located on Church Street and one church is located along the Old Macon Highway east of the town center. ; fYYbk ccX` Cemetery is located a little further east along Old Macon Highway at the intersection of Church Hill Road (SR 1335). Several attendees at the Public Input Meeting on May 19th mentioned walking to this cemetery from town.



Macon Methodist Church



Macon Baptist Church



Macon Second Baptist Church

Macon Churches on Church Street and Old Macon Highway built on land deeded by the Edgerton family



Elm Street – a Macon residential area within walking distance of main town buildings and features

Providing a pedestrian network could improve pedestrian visibility, walkability and also potentially attract visitors to the downtown area in the future, especially if some revitalization takes place to renovate or add contextually compatible new buildings and businesses to the town center. Without the appropriate traffic calming, the post office, town businesses and homes along these routes are just buildings along the side of US 158 heading west to Norlina or east to Littleton. Macon is a lovely small town with an interesting history-it should be noticed!

Current Policies, Plans and Programs

Pedestrian links and improvements will consider the adopted Warren County Comprehensive Transportation Plan (CTP), the Warren County-2022: Comprehensive Development Plan, the Warren County Parks and Recreation Master Plan, the Warren County, NC Tourism Marketing Plan: 2014-2016 and the Warren County Health Department's "On the Road to Wellness" walking trails brochure.

Warren County CTP proposals affecting Macon are listed in the light green box on page seven of this document. The Warren County-2022: Comprehensive Development Plan has among its goals, objectives and strategies to protect water quality and natural resources, to consider a Greenway Program to add connectivity within the County, to promote tourism and preserve existing historic sites, to enhance and maintain recreation facilities and programs as well as to consider a Rails to Trails Program to utilize inactive rail easements creating potential walking and bicycling trails enhancing connectivity in the County (Pp.83-87).The Warren County, NC Tourism Marketing Plan:2014-2016 seeks to promote opportunities in Warren County for cultural heritage travelers and nature-based travelers among others (P.12).Macon has both of these opportunities, which could provide economic development potential. The Warren County

Parks and Recreation Master Plan proposes the construction of a playground in Macon (P. 37) which has taken place. Additional space remains in this town owned parcel to include other recreational activities and recreation related structures. Walking and bicycling were popular activities in the surveys undertaken for the Warren County Parks and Recreation Master Plan and in many cases, were among the top ten activities(P.21).

Part 3: PLAN RECOMMENDATIONS

Possibilities to Consider

The Town of Macon Pedestrian Plan should go hand in hand with revitalization of the downtown area. By encouraging contextually compatible and site specific revitalization, the Macon downtown area could greatly benefit by taking advantage of its existing compactness. Environmentally sensitive choices, such as permeable paving and street tree planting along pedestrian and bicycle routes should also be considered and can be reinforced by stormwater and zoning ordinances (see VI. Goals, Objectives, Strategies, Warren County-2022: Comprehensive Development Plan, Pp.83-87).

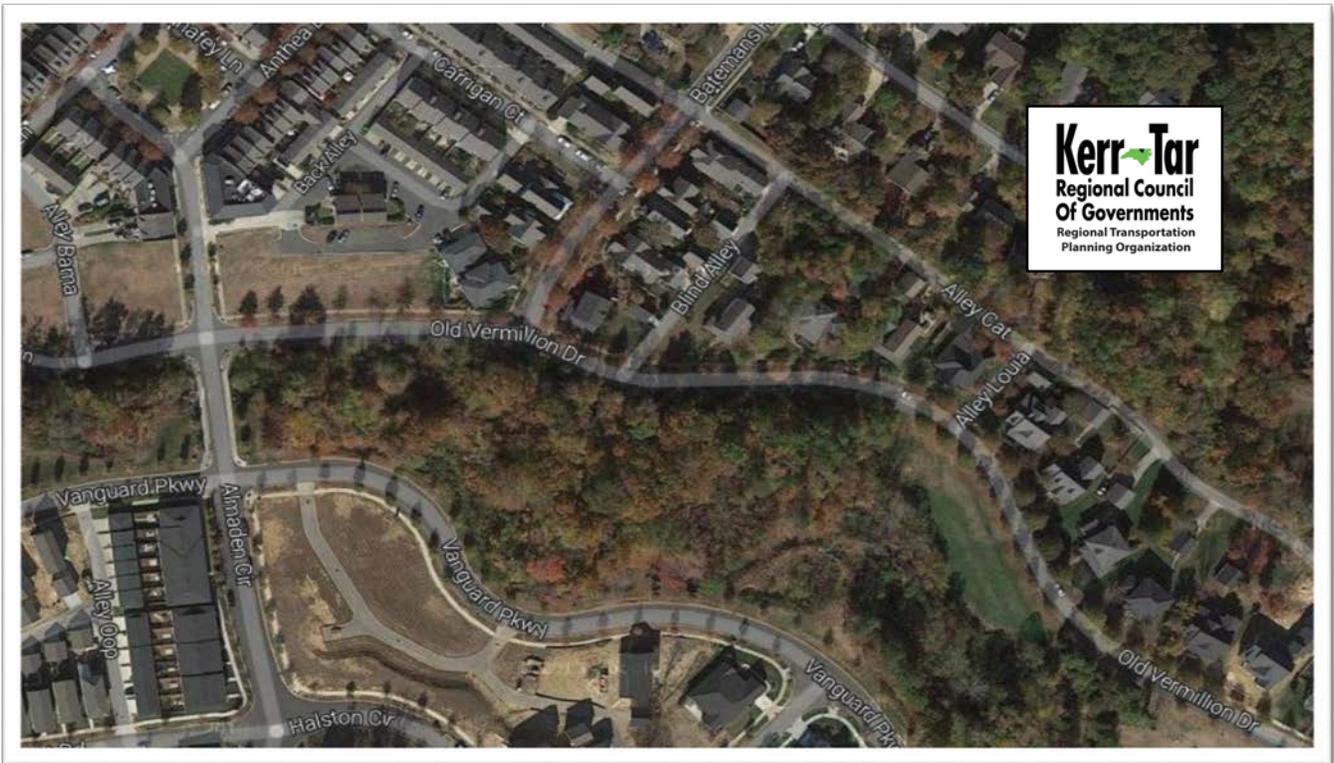
Some of the benefits of such revitalization efforts in Macon could positively impact the town by:

- Increasing the tax base because unoccupied or underutilized buildings are converted to businesses that produce revenue
- Increasing the mix of retail so that dollars that would be spent in other locations are circulated locally
- Encouraging building maintenance and rehabilitation within the town
- Increasing tourism and tourism-related spending
- Promoting the downtown as its own unique and attractive place that serves as a focus of life in the community
- Creating new pride in the community as well as new jobs, businesses and investment
- Decreasing the cost of municipal services to the town because the city limit is not expanding outwardly
- Creating a community where people can live, work, and socialize without the necessity of traveling long distances
- By combining such revitalization efforts with a pedestrian plan as well as other modes of transportation, vehicular traffic can also be reduced- thereby lessening its associated health and economic costs

As Central Macon grows, it is important to ensure that newly developed portions of town be interconnected. Streets with cul-de-sacs should be allowed only if a curvilinear or rectilinear street network determined by topography and natural features is not possible. Creating street networks in this manner enhances connectivity to the center of town and between neighborhoods. New sidewalks and bike paths can be constructed as an integral part of this new development. In areas near streams, single loaded residential streets can be constructed outside of the flood zone with homes facing informal pedestrian paths located in the park-like riparian zone.

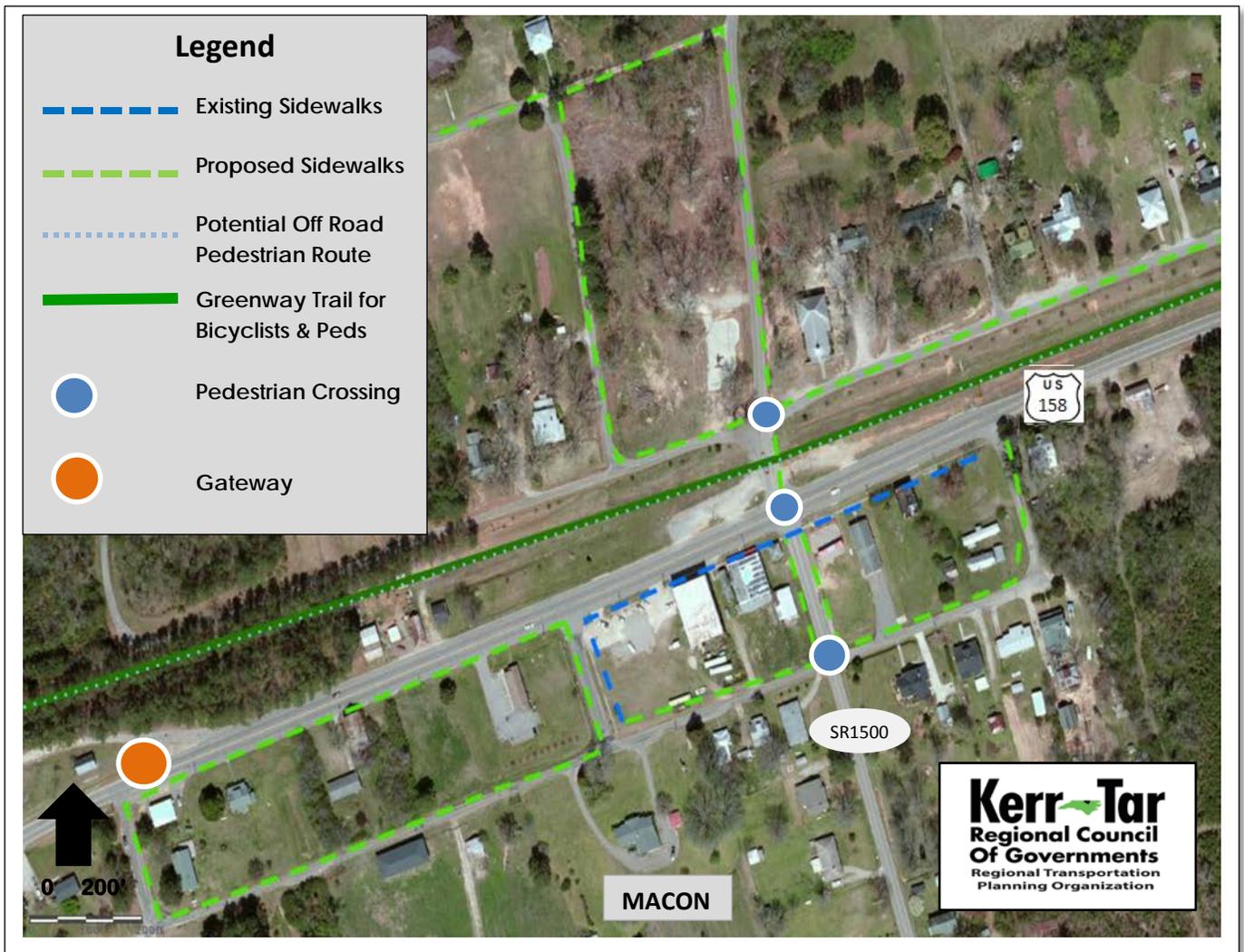


An example of a single loaded residential street opposite parkland with stream-Monteith Park, Huntersville, NC



An example of curvilinear streets determined by topography, linked to rectilinear street grid-Vermillion Neighborhood, Huntersville, NC

Walking to and from various locations in the center of Macon such as the Macon Fire Station, Post Office, local churches, historic homes and local businesses is entirely possible due to the compact nature of Macon, but is hampered by the lack of sidewalks. The main barriers in Macon to walking are lack of pedestrian crossings, few traffic calming measures and the absence of a comprehensive pedestrian network including sidewalks and greenway trails. Any sidewalk network created should include curb ramps and truncated domes in compliance with Americans with Disability Act (ADA) standards. *Priority recommendations are listed on the following pages, serving to illustrate some of the key proposals of this plan and are not ranked in order of importance.* To further these recommendations, the Town of Macon is encouraged to liaise with the North Carolina Department of Transportation (NCDOT), Kerr-Tar Regional Transportation Planning Organization (Kerr-Tar RPO) and Warren County.



Macon Plan Overview showing potential sidewalk network, pedestrian crossings, greenway/ rail trail incorporating off road pedestrian routes, as well as a potential gateway location

Priority Recommendation #1:

Repair existing sidewalks.

Macon currently has several sidewalks which are located on Tulip Lane and the business area of Main Street that require some repair and could form the basis of a sidewalk network. Sidewalks should also incorporate signage, waymarking and crosswalks where appropriate.

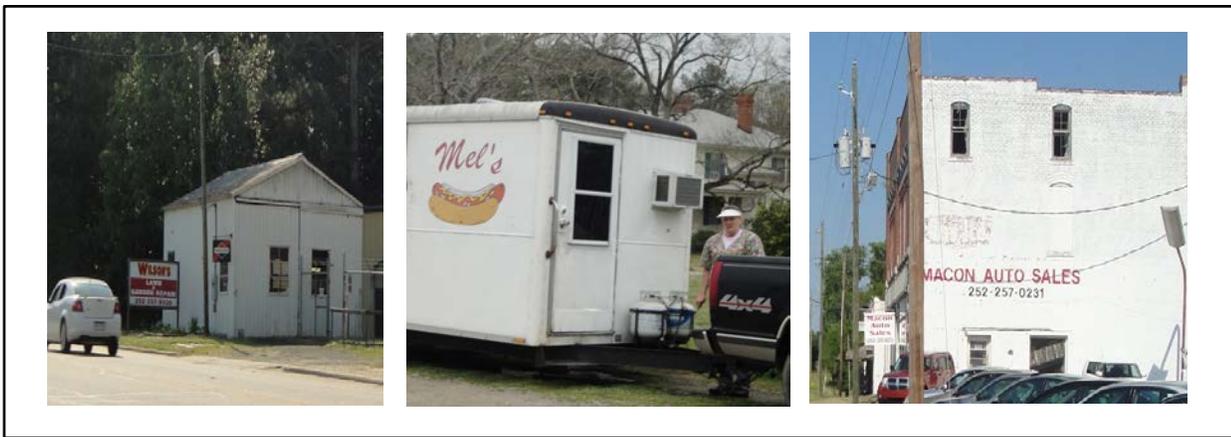


Existing sidewalk along Tulip Lane near Post Office and Town Center

Priority Recommendation #2:

Add sidewalks to downtown area linking potential walking destinations

Proposed sidewalks are indicated with a dashed green line on the Macon Plan Overview located on page 15. Routes are designed to go past potential destinations in the town center, such as the United States Post Office, local park, as well as shops selling food and merchandise to the public. Residential Macon streets, such as Elm Street for example, could be linked by sidewalks to the central area to provide neighborhood connections.



Examples of Local Macon Businesses in the Town Center

Priority Recommendation #3:

Add crosswalks to enhance pedestrian connectivity at the intersection of Church Street and Oak Road (SR 1500), at Main Street (US158) and Macon-Embryo Road (SR 1500) and Elm Street and Macon-Embryo Road (SR 1500)

These new pedestrian crosswalk proposals are indicated by blue dots on the Macon Plan Overview on page 15.

The scale of these improvements should not dominate the Town Center and should make sure that the needs of pedestrians and other nonmotorized modes of transportation are given priority.

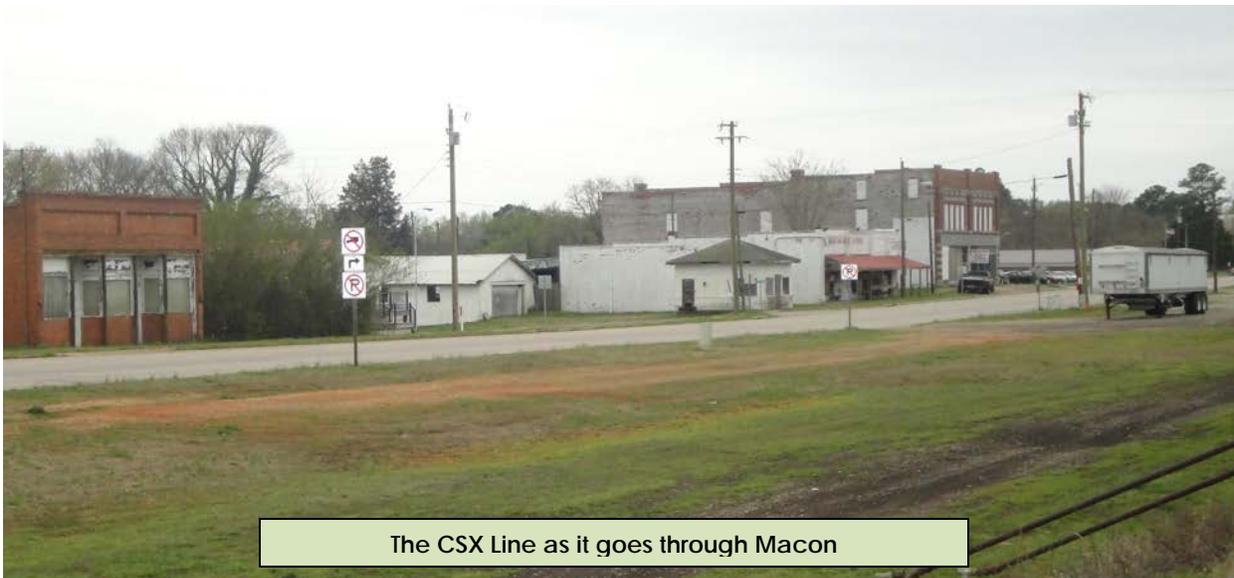
Examples of Pedestrian Crossings

 A photograph showing a standard pedestrian crossing with white zebra stripes on a paved road. Two people are walking across the crosswalk.	<p>Standard Pedestrian Crossing</p>	 A photograph of a tall, yellow, vertical signpost. The sign features a red octagonal stop sign with a white border and a black silhouette of a pedestrian. Text on the sign includes 'STATE LAW' at the top, 'STOP FOR PEDESTRIANS' in the middle, and 'WITHIN CROSSWALK' at the bottom.	<p>In-Road State Law Stop for Pedestrians Sign at Standard Crossing</p>
 A photograph of a pedestrian crossing on a wide street. A landscaped median with green grass and small shrubs separates the crosswalk from the road. A person is walking across the crosswalk.	<p>Pedestrian Crossing with Protected Landscaped Median</p>	 A photograph of a woman standing at a crosswalk. She is looking towards the camera. A traffic signal pole is visible in the foreground, and a car is partially visible in the background.	<p>Accessible Signaled Crossing</p>

Priority Recommendation #4:

Rail Trail on CSX line

A potential opportunity for off-road pedestrian and bicycle access is created that can connect neighboring communities, towns and other areas of the state, providing new avenues for tourism, economic development and health within the Town of Macon (This rail trail could also be the main route to link Macon with other walkable destinations such as Greenwood Cemetery at the corner of Church Hill Road (SR 1335) and Old Macon Highway (SR 1318). It is recommended that the Town work with Warren County and North Carolina Rail-Trails to develop this project. The link could potentially extend from Norlina, through Macon to Roanoke Rapids. This opportunity is identified by the solid green line on the Macon Plan Overview on page 15.



The CSX Line as it goes through Macon



An example of a bike and pedestrian path running alongside existing railway line (Rail with Trail)
Carrboro, NC

In the past, NCDOT actually went to the NC State Legislature and received an appropriation to purchase the Norlina to Roanoke rapids corridor. CSX increased the asking price to cover remediation costs and the legislature would not agree to more money, so the NCDOT had to drop the project. NCDOT would still like to purchase the corridor, but only if CSX will accept a reasonable price. The project could still proceed if the funding and political will to undertake such projects improve (E-mail from Emily Herbert, NC Rail-Trails 4/22/15 to Ann Stroobant, KTCOG).

An example of a rail-trail currently taking shape in Elkin, NC is detailed below:

Elkin, NC-Elkin & Alleghany Rail Trail

- Elkin Valley Trail Association formed to enhance the health and vitality of the Town of Elkin, which is located in Surrey County towards the west near the Virginia line.
- The Rail Trail will eventually connect the Town of Elkin to Stone Mountain State Park, mostly following the right of way of the Elkin & Alleghany RR (15 miles)
- The trail will be a tourism and economic generator

<http://ncrailtrails.org/trails/elkin-and-alleghany>



An example of a rail-trail for bicyclists and pedestrians taking shape in Elkin, NC planned as a tourism and economic generator

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Priority Recommendation #5:

Creating a defined gateway or entry point to Macon, so that everyone, no matter what mode of transportation they use, realizes they are in the Town of Macon!

Macon is its own unique town with a unique history, not a place that one just passes through on the way to Lake Gaston or to Interstate 85. Several intersections in Macon have gateway potential, such as the intersection of Elm Street and Main Street (US158) at the town line. The gateway can complement the proposed sidewalks, off-road pedestrian links and greenway trail. The gateway is identified with an orange dot on page 15 and can include a Welcome to Macon sign.

Care should be taken to preserve existing historic buildings which have minimal setbacks and to allow for emergency access. Make sure the needs of pedestrians are considered with crosswalks designed to Americans with Disabilities Act (ADA) standards, adequate signage, and traffic calming measures, so that no mode of transportation is ignored. The defined gateway could take the form of a planted traffic circle, a planted median strip or a bump out. This can also be important if a bypass is constructed around Macon as proposed in the CTP. A gateway to the town would define the area.

Examples of Gateways (which could also include a Welcome to Macon Sign)



Priority Recommendation #6:

Add further amenities to the existing park, including sidewalks around the perimeter.

The park is an attractive feature for the entire population of the town, currently with play equipment for children. A sidewalk could be added around the perimeter of the block to encourage walking for health as well as to link the surrounding streets to town. As the town owns the entire block where the park is located, additional features could be added to enhance its health and recreational potential for all ages, such as a shelter, as well as interior trails incorporating exercise stations.



Priority Recommendation #7:

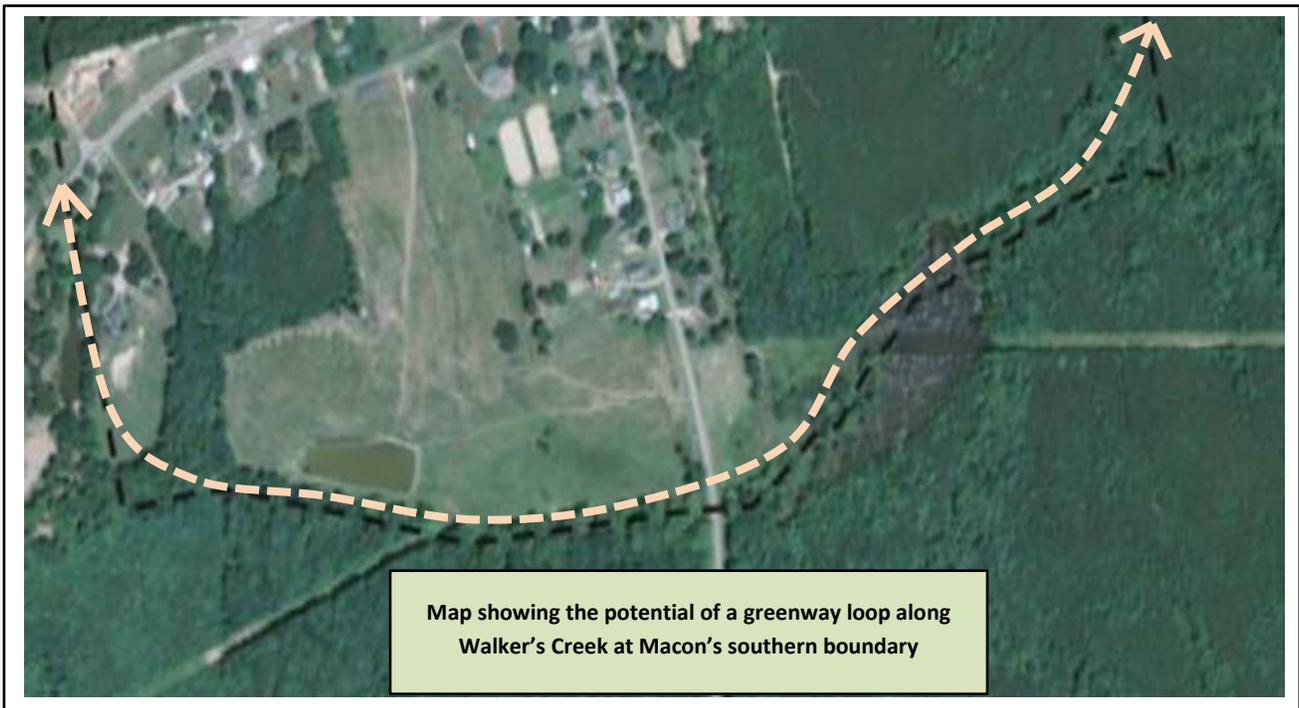
Encourage new infill development in town

Development must complement the scale of the existing buildings with sidewalks at the front (as currently exists in central Macon). Parking can also be located behind the buildings to encourage pedestrians to walk along the street and not park right in front of their destination.



Priority Recommendation #8:

New Greenway along Walker's Creek creates the opportunity for a loop trail (and could also incorporate new development as on page 14)



Part 4: RECOMMENDED POLICY AND ORDINANCE MODIFICATIONS

No new road facilities should diminish pedestrian access. There are four lane road improvements referenced in the Warren County CTP along US 158, which without proper consideration and design could disable other modes of transportation in favor of the automobile as well as encroaching on buildings in the center of Macon that have minimal setbacks. Forming a Macon Pedestrian Committee could assist the Town in prioritizing pedestrian needs.

Locations of New Public Facilities

By policy, locations of new public facilities should first take into consideration pedestrian access. The current placement of the town hall, fire station, post office, churches and local businesses allow individuals living in the community to be less car dependent (especially with augmented pedestrian infrastructure).

- For the development of new schools, a school location should be determined that is within walking distance of the majority of residential areas. Where students live within walking or biking distance, school policy should encourage and assist children to go to school without the use of cars or buses. Currently, the nearest school is Vaughan Elementary, located about five miles away-too far to easily walk.
- The locations of any new post offices, health departments, Social Security offices, parks, libraries, police stations, abuse care centers, courts, DMV offices and other civic facilities should be in a location where pedestrian access is top priority. Simply placing these facilities near a sidewalk is not adequate, but placing these facilities on a sidewalk within a short walk to neighboring residents is ideal. Many of the users of these facilities are not able to or cannot afford to drive. In cases where there is typically one branch office, a central location is best. The town should have a policy to work with the county, the state, and the federal governments to make this possible.
- Plans for new roadway construction must not compromise projects and concepts brought forth in the Macon Pedestrian Plan. A new roadway should never sever a planned shared-use path corridor and a road widening project must always leave room for sidewalks.

Part 5: FUNDING AND IMPLEMENTATION

Sample Cost Estimates for Facilities

Approximate unit costs for the types of pedestrian projects proposed in this plan are listed below and are based on some example project costs that have been recently implemented, along with costs of other pedestrian projects. These are only example costs and should not be used to determine actual costs for specific projects. An engineer's estimate should be obtained before requesting project funding from County, State, or Federal sources.

Sidewalks

- \$15 per foot for curb and gutter (plus 10% for design and administration)
- \$30 per square yard sidewalk (plus 10% for design and administration)
- 5' sidewalk – The Town of Mooresville is spending \$119 - \$200 per linear foot (\$629,000 - \$1,056,000 per mile) for recent sidewalk projects. This figure includes all necessary costs of design & administration, curb & gutter, various retrofitting costs, etc.

Shared-Use Paths

- Floodplain paths, such as creek or sewer paths may require more site preparation. Floodplain costs usually involve drainage issues (i.e., need for culverts and bridges, or geotextiles), permitting issues, and boardwalk. Greenways are typically constructed on creek corridors or sewer easements.
- Rail Trails and side paths that have the advantage of being on a relatively cleared alignment with some existing grading and base work already complete can be constructed more economically. Typical Costs Associated with Floodplain Shared - Use Paths on Waterways or Sewer Lines:
 - \$120 per linear asphalt foot (installation including grading, clearing, construction, and a subbase with 18" on either side of asphalt for shoulder stabilization) \$633,600 per mile + 10% administration and design = approximately \$700,000 per mile = \$132 per linear foot
 - 10' Concrete walkway: \$300,000 - \$500,000 per mile (with design and administration – add 10%)
 - 10' wide prefabricated "Steadfast" type Pedestrian Bridge: \$1,200 per linear foot with design, engineering, installation and administration costs. An 8' wide clearance can reduce this cost.
 - 10' paved asphalt path (with two-foot margins and associated improvements): \$100 - \$125 per foot (\$528,000 - \$660,000 per mile.) Add 10% for design and administration.
 - Boardwalk: Historically \$200 / linear foot (\$1,056,000 / mile), lately has increased to \$225 - \$250 per linear foot. Unit prices on bids can see boardwalks come in anywhere from \$150 - 350/LF. Boardwalk is 8' clear.

- Converted Culverts and Underpasses: \$60,000 - \$100,000. The cost varies according to width, lighting needs, if stream restoration is involved and other circumstances.
- Greenway designers typically estimate \$120 per linear foot for construction of path (clearing, grading, and subbase -- 14' wide, asphalt trail 10' wide).
- General estimates consistently identify \$1,000,000/mile for the design and construction of greenway (10' wide asphalt).
- Rail Trail construction can be estimated at \$510,000 per mile, based on other North Carolina Rail Trail projects plus an additional 10% for design and administration. This plan uses \$106 per linear foot to calculate all costs estimations for paths built on roadway and other upland corridors.
- The American Tobacco Trail (a rail trail in the Raleigh-Durham area) cost \$330,000 per mile for construction costs in 2002. The City of Durham notes that they have seen a 10 – 11% increase in construction costs in later years, with a more moderate climb earlier. This cost included hauling away ballast and ties (not rails), filling in areas of bad soil, upfitting 12" and 18" drain pipes to 24" and 36" to meet new code requirements, grading, and paving.
- 10' Crushed Rock walkway: \$80,000 - \$120,000 per mile (with design and administration – add 10%). These greenways have high maintenance costs.

Intersections

- Crosswalk/Countdown signal: \$5,000 per intersection (this includes installation and an additional installed post). This cost can be up to \$15,000 per intersection if a retrofit is done with Accessible Pedestrian Signals (APS) devices.
- Curb extensions: \$5,000 - \$25,000
- Simple neighborhood crosswalks with signs and markings: \$500 - \$1,500
- Enhanced crosswalk with special stencils, raised platforms, or special signage: \$5,000
- Raised crosswalks: \$2,000 – \$15,000
- Refuge island: \$10,000 – \$40,000
- In pavement illumination: \$25,000 – \$40,000 per crossing
- Pedestrian only traffic signal: \$40,000 - \$75,000
- Hawk signal: \$40,000
- Mid Block Flashing Crosswalk: \$20,000 for equipment and \$20,000 to install

Lane Marking

- Bicycle or vehicle lane striping (thermoplastic): \$15,000/mile with design and administration for both sides of the road
- \$1.20 per linear foot of thermoplastic for line striping
- \$350.00 for each set of performed thermoplastic bike symbols with arrows

Lighting, Landscaping, and Signage

- Lighting: Varies widely depending on type of light and location. Lighting an underpass could be \$2,000 - \$5,000 for 3 to 4 lights. Mecklenburg County Parks and Recreation recently paid approximately \$11,000 for the wiring and installation of 2 underpasses (8-12 lights under each)
- Landscaping: Contractor installed foliage costs around \$400 - \$500 per tree and \$25 - \$50 per shrub
- Marking a route with signs: \$2,000 per mile with design and administration Signs: \$250 – \$350 each

Traffic Calming

Some general cost estimates and other notes are included here from the United States Department of Transportation for traffic calming facilities:

Measure	Reduces Traffic	Noise	Loss of Parking	Restrict Access	Emergency Entrance	Maintenance	Cost
Traffic Education Campaign	Maybe	No change	None	None	None	No	Varies
Speed Display	Yes	No change	None	None	None	No	\$250/day
Neighborhood Sign	Maybe	No change	None	None	None	No	\$200/sign
High Visibility Crosswalks	Maybe	No change	None	None	None	Yes	\$1K-\$5K
Police Enforcement	Yes	No change	None	None	None	No	\$75/hour
Narrowing Lanes	Yes	No change	None	None	None	Yes	\$1K-\$3K
Speed Limit Signing	Maybe	No change	None	None	None	No	\$200/sign
Stop Signs	Maybe	Increase	None	None	None	No	\$200/sign
Signing Restrictions	No	No change	None	Yes	None	No	\$200/sign

Funding Strategies

A combination of funding sources will be needed to construct the infrastructure projects recommended in this report. The Town of Macon and subsequent planning entities should seek all viable funding opportunities for project implementation, including Federal and State monies where available (i.e. inclusion on the State TIP). Bond issues by the county or town to pay for future construction projects such as streets, sidewalks, trails and greenways are a possibility. Special funding programs for specific types of projects should also be pursued where appropriate. Private foundations, such as the Blue Cross Blue Shield of NC Foundation, should be researched to identify possible funding options (<http://www.bcbsncfoundation.org/about-us/>). Although many funding sources potentially can provide revenues for project implementation, it is likely that local government funding will be a primary component (for matching federal / state funds and for implementation where other revenue streams are not available). Therefore, it is recommended that the Town establish a set aside amount in the annual Public Works budget for pedestrian infrastructure project implementation. An annual set aside would ensure that progress is made every year on constructing the specified projects, and would illustrate a commitment from the Town to improve walkability.

The NCDOT Bicycle and Pedestrian Planning Grant Initiative is an example of a matching grant program (<https://connect.ncdot.gov/municipalities/PlanningGrant/Pages/default.aspx>). There is a prospective allowance in the state legislative budgets for fiscal years 2016-2017 that if allocated might provide the NCDOT Divisions with funding to build small safety related projects, including sidewalks. If this funding is allocated, Macon's NCDOT Division, which is Division 5, may be able to assist. The possibility also exists of contacting legislators who have Macon within their jurisdiction. Sometimes the legislators have access to limited funding for building small projects such as sidewalks.

The Federal Highway Trust Fund, which receives money from a federal fuel tax, has been used in the past to fund small paved shoulder improvements to accommodate bicyclists and pedestrians.

The Town of Macon has successfully applied for and used Powell Bill Funds to pave some of the municipal roads in town, such as Elm Street. Powell Bill funds can also be used for bikeways and sidewalks located along public streets and highways (<https://connect.ncdot.gov/municipalities/State-Street-Aid/Pages/default.aspx>).

The N.C. Parks and Recreation Trust Fund (PARFT) provides dollar for dollar matching grants to local governments for recreational and parks projects that serve the public (http://www.ncparks.gov/About/grants/partf_main.php). Castalia, a town located in nearby Nash County, has recently received PARFT funding to help fund a park in its jurisdiction. The Land and Water Conservation Fund (LWCF) is a federal source of matching grants to state and local governments for public outdoor recreation areas and facilities (http://www.nps.gov/nrcr/programs/lwcf/exemp_prjts.html).

The Recreational Trails Program is a possibility to fund trails at the state level. The program was authorized by Congress in 2012 as part of the Moving Ahead for Progress in the 21 Century Act (MAP-21) (http://www.ncparks.gov/About/trails_RTP.php). This source of funding could be potentially used if a trail is developed along the old railway line still owned by CSX through Macon. Also the potential exists to obtain support and guidance for a project of this type through North Carolina Rail Trails, an organization that works with communities across the state to create trails on abandoned rail corridors for public use (<http://www.ncrailtrails.org/>).

The Plan Adoption and Approval Process

The recommended policy and priority identifications should be fully considered as Warren County updates its existing zoning ordinances and comprehensive development plan. Incorporating the policy recommendations in the updated planning and zoning tool kit will play a major role in defining the future pedestrian environment of Macon.

Part 6: APPENDICES

1. Facility Standards and Guidelines

Guidelines for the placement and design of pedestrian facilities should be flexible to some extent so that context-sensitive design solutions can be implemented, but should adhere to standards established by the American Association of State Highway and Transportation Officials (AASHTO), the Manual on Uniform Traffic Control Devices (MUTCD), and the NCDOT.

Several overall guidelines for facility development are highlighted below.

- Give transportation priority to the completion of pedestrian routes to schools, neighborhood shopping areas, parks, and transit stops.
- Incorporate the natural and historical linear aspects of the town into pedestrian projects.
- Ensure that the safety and convenience of pedestrians are not compromised by transportation improvements aimed at motor vehicle traffic.
- Ensure that the pedestrian circulation system is safe and accessible to children, seniors and the disabled.
- Street furniture, vendors, water fountains, bicycle racks, lighting, and other pedestrian amenities should be welcomed, but also be placed out of the immediate pedestrian travel area.
- Establish links between sidewalks, trails, parks, and the rest of the community.
- Retain public pedestrian access when considering private right-of-way requests.

- Support changes to existing policies that would enhance pedestrian travel.
- The pedestrian system should connect to residential, commercial, industrial, educational, and recreational areas.
- Off-site street improvements or enhanced bicycle and pedestrian facilities may be required as a condition of approval for land divisions or other development permits.
- Aesthetics and landscaping shall be a part of the transportation system.
- Coordinate transportation planning and efforts with neighboring municipalities.

A number of specific pedestrian improvement projects are proposed in this plan. These projects will play an important role in helping to improve the walkability of the town; however, it is even more important to ensure that appropriate pedestrian accommodations are made with future development. It is useful for the town to consider a set of guiding design principles that cater to the needs of pedestrians and the general means by which these needs are to be met. Some basic principles for incorporating pedestrian accommodations in a transportation system include the following:

- It should be accessible.
- It should connect to the places where people want to go.
- It should be easy to use and convenient.
- It should provide a sense of place and make an effort to be appealing to the senses.
- It should be well maintained.
- External factors such as noise, crime potential, exposure to the elements, and hazardous objects should be minimized.
- It should be used for multiple purposes such as dining, shopping, and special events so long as it does not contradict any of these principles.

2. Sidewalks (and other pedestrian facilities)

Clearly, no pedestrian system is complete without sidewalks. Even if no pedestrian travel exists, studies show that walking can be expected to increase when the facilities are provided, and walking levels are highest when the pedestrian routes are complete and continuous. It is relatively easy to design a policy that requires new development to include sidewalks in their construction, but it can be difficult to retrofit new sidewalks into existing communities. The American Association of State Highway and Transportation Officials (AASHTO) recommend the construction of sidewalks on all city streets, including those in rural areas. The Institute of Transportation Engineers (ITE) recommends sidewalk installation on both sides of the street whenever possible for new urban and suburban streets, especially in commercial areas,

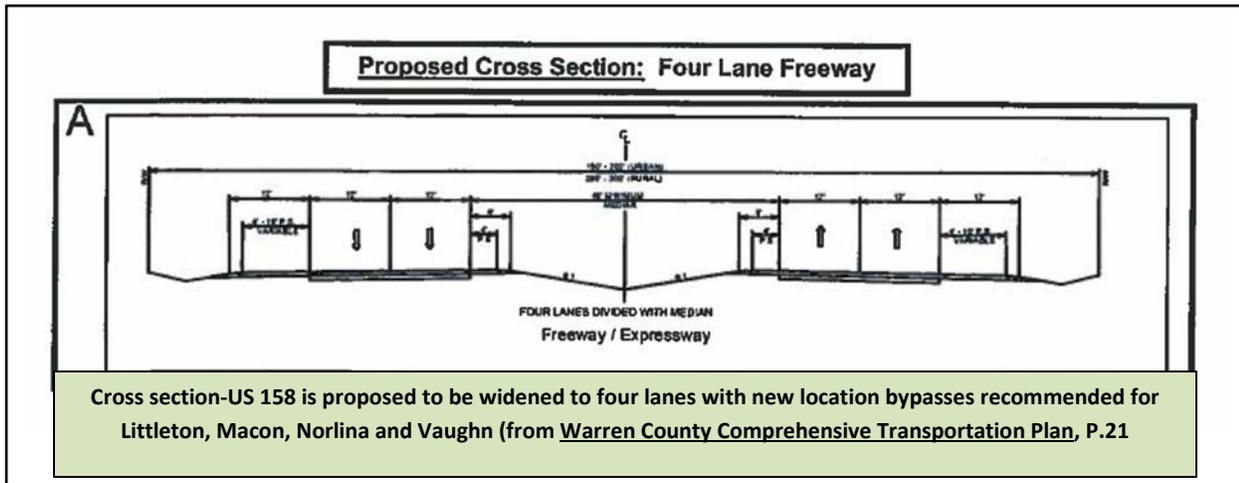
residential areas with four or more units per acre, or residential areas on major arterials and collectors. If sidewalks on both sides of the road are not possible, lower density rural residential areas might adequately serve its pedestrians with a sidewalk on only one side and/or four-foot wide shoulders. Although separate pedestrian and automobile corridors are necessary on any roadway other than a low-speed driveway, sidewalks are the most useful along roadways with a fair amount of traffic volume and with speeds higher than 25 miles per hour. The higher the speed of traffic, the more the need may exist to route the pedestrian away from that road. Store frontage walkways or shared-use paths that provide the pedestrian with multiple options are sometimes preferred. Sidewalks should never be intentionally built directly adjacent to a roadway if the space exists for a buffer such as a planting strip, on-street parking, a furniture zone or bicycle lanes. Because of frequent intersections, dips, and narrow widths, sidewalks are not meant for bicycles other than new riders who are accompanied by a pedestrian trainer. One of the most common reasons for bicycle/car collisions are attributed to that rider being on the sidewalk.

Bicycle provisions are addressed briefly in this plan as a traffic calming measure, but should be addressed completely in a separate plan.

ITE Recommendations for Sidewalks:

- Central Business District: Wide enough to accommodate users. Minimum 8 feet.
- Commercial area outside the central business district: 7 feet wide if no planting strip is possible, or 5 feet wide with a 2-8 foot planting strip (Wider planting strips accommodate greater buffers from traffic and the opportunity to plant large shade trees).
- Residential areas should have 5 foot-wide sidewalks with a minimum of two-foot wide planting strips.
- 4 to 8 foot wide planting strips or furniture zones are recommended along all sidewalks to provide separation from vehicles. This space is useful for landscaping, lighting, poles, trash receptacles, signage, water fountains, benches, weather debris, bike racks, and curb ramps. Six foot wide minimum buffer strips between the sidewalk and the curb are required for the correct slope needed to accommodate ADA requirements for curb ramps while maintaining the sidewalks' 2 % maximum cross slope. Eight foot wide buffers are recommended for the planting of any shade tree.
- Sidewalks should be clear of obstructions such as utility poles, sign posts, fire hydrants, bike racks, newspaper stands, etc. These objects must remain in the furniture zone or planting buffer strip.
- Vertical clearance should be at least 7 feet from ground level to the bottoms of signs or the lowest tree branches.

- Increasing sidewalk widths by 2 - 3 feet would accommodate shoulder-high intrusions like building walls, bridge railings, and fences.
- Maximum cross-slope of 1:50 (2%) is considered to be level. Limit running slope to 5% (1:20), or no greater than 8.33% (1:12) where topography requires it. Ramps with level upper and lower landings are necessary for ADA requirements.



3. Small Town Main Street Program

The North Carolina Department of Commerce’s Small Town Main Street Program assists small towns in making improvements to reestablish their downtowns as thriving economic centers. Since the Program’s start in 1980, towns have experienced a total gain of \$1.66 billion in new investment and 14,600 new jobs. While the Main Street Program takes a wide approach to improving downtowns, many plans completed through the Program include initiatives to make streets more bicycle and pedestrian friendly. Towns have focused on improving sidewalk connectivity, creating marked walking routes, installing bike lanes, and implementing street-level design improvements for a more enjoyable walking experience. Transforming downtown shopping into an enjoyable, active experience has helped towns attract consumer spending that might previously have occurred at larger shopping centers outside their tax base and improve downtown property values.

As previously stated, the Town of Macon is compact and has the potential for a wonderful downtown area. The Town would greatly benefit from directing future resources and planning efforts towards enhancing this area. While relatively small, the potential for a vibrant, walkable area could be achieved by encouraging and assisting in the revitalization of the historic buildings in downtown Macon. The Small Town Main Street program focuses on small, rural towns that need assistance with downtown development, but are not likely because of their size or resources, to apply for the regular Main Street program.

<http://www.nccommerce.com/rd/main-street/nc-small-town-main-street-program>

4. Town of Macon Pedestrian Survey Responses

These three pages contain the tabulated survey responses from members of the public that attended the Macon Public Input Meeting on May 19th, 2015 as well as several responses from other individuals who were unable to attend, but wished to fill out the survey.

Macon Pedestrian Questionnaire (Page 1 of 3)

TOWN OF MACON PEDESTRIAN PLAN QUESTIONNAIRE RESPONSES

1. How long have you lived in Macon?	< 1yr	1-5 yrs	5-10 yrs	>10 yrs	Do not reside in Macon	Total
				16		16

2. What is your age?	<18	18-24	25-34	35-44	45-54	55-64	65 or older	Total
	2				2	4	8	16

3. How important to you is the goal of creating a walkable community?	very important	somewhat important	not important	don't know	Total
	14	2			16
4. How pedestrian friendly is Macon today?	very	somehow	somewhat unfriendly	very unfriendly	Total
	5	7	3	1	16
	No Knowledge				

5. How often do you make walking trips now?	5+ x week	3-4 x week	at least once a week	a few times a month	never	Not Answered	Total
	4	2		5	5		16
6. For what purposes do you walk most now and/or would you want to walk for the future (check all that apply)							
Fitness or recreation	14						
Primary transportation	3						
Social visits	5						
Shopping							
Walking baby or dog	5						
Other Walk to PO=1; Do not walk=1	2						

7. What factors discourage walking in Macon? (check all that apply)							
Lack of sidewalks and trails	12						
Poorly maintained sidewalks	7						
Traffic	5						
Unsafe road crossings	7						
Lack of nearby destinations	4						
Aggressive motorist behavior	4						
Physical barriers	4						
Lack of time	2						
Lack of interest	1						
Other-Please specify Dogs=1	1						

Macon Pedestrian Questionnaire (Page 2 of 3)

TOWN OF MACON PEDESTRIAN PLAN QUESTIONNAIRE RESPONSES

8. Which destinations in town are you most likely to walk to in Macon? (Top Three)							Did not	Answer Q.8#2
Trails and greenways					3			
Parks					9			
Local stores / businesses					2			
Restaurants / food trucks					3			
Civic buildings (Town Hall, Fire Station, Post Office)					11			
Work					1			
Entertainment					1			
Public Transportation								
School								
Other	Church=3; Exercise=1; Did not specify=1				5			
9. Please select your top three improvements in order to help prioritize pedestrian needs in Macon. Did not Answer Q.9=3								
Repair/replace existing sidewalks					8			
Fill in the gaps in the existing sidewalk network					7			
Add new sidewalks					10			
Add crosswalks and other improvements at key crossings					6			
Construct a greenway trail/multi-use path system					5			
Create more pedestrian friendly destinations					5			
Improve public transportation								
Address barriers to pedestrian travel					2			
Improve pedestrian accommodations at key intersections (crosswalks, ramps, signals)					3			
Other-Please specify	Resurface Macon Highway=1				1			
10. Rate the importance of adding crosswalk and sidewalk improvements to the following locations:								
		Very important	Important	Somewhat important	Not important	Did not	Answer Q.10=3	
Schools				1	4			
Stores / businesses	6	2	1	1				
Town Hall	6	4						
Post Office	9	4						
Fire Station	7	4						
Parks	6	3						
Neighborhoods	6	2						
Other-Please specify	Church=1; Sidewalk at PO=1	2						

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