

BIKEABILITY AND WALKABILITY AUDIT

for

THE CITY OF WATKINSVILLE

June 2007

Prepared by the Northeast Georgia Regional Development Center

Bikeability & Walkability Audit

Watkinsville, GA

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1. Executive Summary

This bikeability/walkability audit addresses obstacles to safe and convenient cycling and walking opportunities in Watkinsville, Georgia, and provides recommendations on combating these hardships to make the community a more friendly place to access without using an automobile. With a growing population, a large number of school-aged children, a relatively compact land use system, and a small-town atmosphere that continues to develop, Watkinsville is ripe for an increase in the amount of trips - for leisure and transport purposes - made on foot or by bicycle.

However, current conditions reveal significant impediments to safety and convenience in non-motorized travel and recreation within the City of Watkinsville. Narrow streets with high traffic volumes and speeds, little sidewalk coverage, lack of on-street bicycle lanes, and very few crosswalks contribute to a less than ideal experience for the pedestrian or cyclist.

The implications of this are two-fold. First, unsafe walking or riding conditions expose residents and visitors to dangerous experiences and jeopardize health and well-being. Second, perceptions of low safety and/or convenience will lead to a reduction in overall walking and cycling trips made, both for leisure and as transportation.

However, Watkinsville has an opportunity to become a more walkable and bikeable city through long- and short-term planning efforts, smart investment of public dollars in necessary infrastructure, initiation of programs aimed at improving safety and convenience, and increased enforcement of traffic regulations.

The Northeast Georgia Regional Development Center has prepared this audit for the City of Watkinsville as part of a nationwide trend toward bicyclist- and pedestrian-friendly, accessible, and healthy communities.

2. Introduction & Background

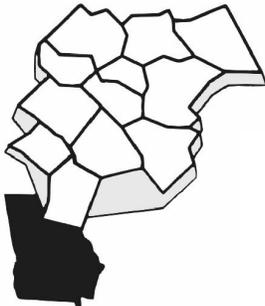
2.1 Introduction

Bikeability and walkability are indicators of a community's quality of life. They are important components of public health and safety, environmentally-sensitive transportation, economic vitality, and neighborly interaction. Communities that foster safe and convenient cycling and walking connections between neighborhoods, schools, employment centers, and recreation and shopping areas are making long-term investments in social, economic, and environmental wellness.

A bikeability/walkability audit focuses on how to counteract obstacles to safety and convenience, both physical and behavioral, for non-automobile travel and recreation.

2.2 Partners

This document was produced by the Planning Department of the Northeast Georgia Regional Development Center for and in conjunction with the City of Watkinsville using funding from the Georgia Department of Transportation. The University of Georgia's Department of Kinesiology, represented by Dr. Elaine Cress and her students, contributed a great deal of work to the walkability portion of this audit, including route identification and survey design, implementation, and analysis. Dr. Clint Moore, a Watkinsville resident and bicycle commuter, volunteered to complete the bikeability survey for this study.



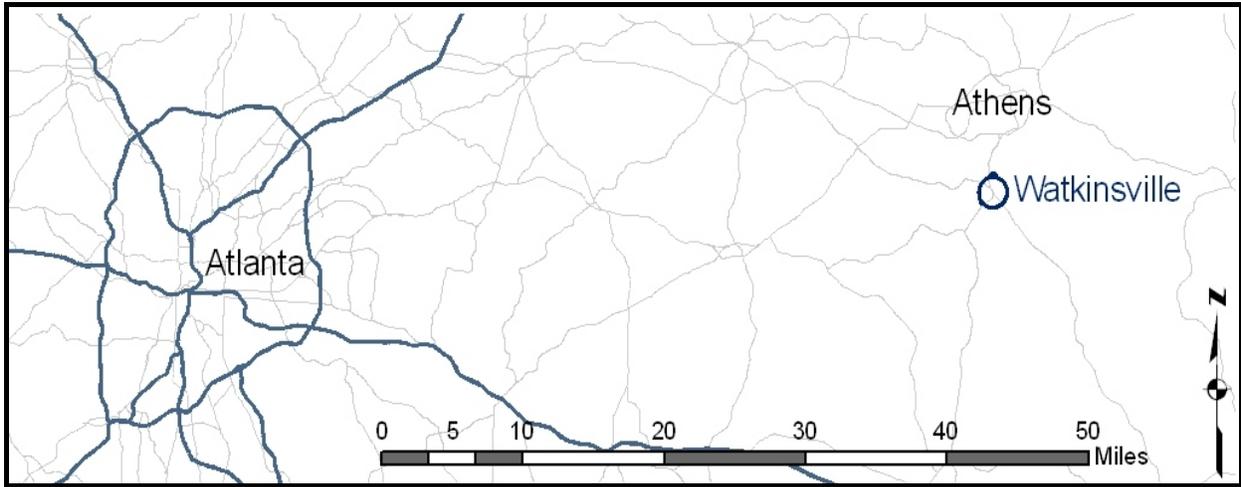
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2.3 Watkinsville Past and Present

The seat of Oconee County, the City of Watkinsville (population 2,535; US Census 2005 estimate) is located in Northeast Georgia, approximately 70 miles (one hour and 30 minutes driving) east of downtown Atlanta and 10 miles south of Athens.

Watkinsville was the county seat of Clarke County before that county's administration and offices moved to Athens in the early 1870s. In 1875, Watkinsville became the seat of Oconee County, which had recently been formed out of half of Clarke County's land mass. Historically, the area's main economic activity was agriculture, but light industry and services now represent the major employment sectors.



The 100 foot-long Elder's Mill Bridge, built in 1897 and moved to its current location off of State Route 15 just south of Watkinsville, is one of the only remaining covered bridges still in use in the state of Georgia and does not rely on any underlying steel beams for support. This bridge and the Eagle Tavern represent two of Watkinsville's main historic resources.

Watkinsville has absorbed some of rapidly suburbanizing Oconee County's recent development, with a population increase of 58% from 1990 to 2005. In 1996, the Oconee Cultural Arts Foundation hosted its first major art exhibit, and has since anchored and supported a thriving and growing local arts community. Several restaurants, offices, and other projects bolster the downtown environment and provide residents from Watkinsville and elsewhere in Oconee County with local eating, shopping, and service options. In the past three years, eight new restaurants have opened and retail business on Main Street



Elder's Mill Bridge (Georgia Department of Transportation)

has increased by 40%. Despite large numbers of residents who commute via automobile to Athens, this new atmosphere both supports and helps necessitate Watkinsville's push toward a more walkable and bikeable community.

2.4 Concept Plan

In September 2006, the Northeast Georgia Regional Development Center produced the Watkinsville 2026 Concept Plan as a guide to the future. The plan addresses land use, housing, employment, recreation, transportation, local and regional coordination, and natural and cultural resource preservation.

One of 16 "Key Features" of the Concept Plan addresses multi-modal transportation accessibility:

The plan supports the creation of a multi-modal master plan that includes greenway trails, bicycle lanes, and sidewalks prioritizing projects and coordinating new development with the construction of new facilities as well as providing connectivity to regional and statewide multi-modal facilities.

This shows that the citizens and leadership of the City of Watkinsville recognize the importance of and need for multi-modal transportation planning, especially in relation to non-motorized travel.

The first objective of the plan's Transportation goal is to:

Invest in the necessary infrastructure (sidewalks, bicycle lanes, greenways and trails, signalization and signage) to accommodate alternative forms of transportation and increase mobility options.

The plan's third Parks and Recreation objective reads, "Link the parks, open spaces, and recreation areas with the existing and planned bicycle, pedestrian, and multi-use trail networks." Further into the plan, in the Transportation section, the concept of choice in travel is addressed: "If streets provide pedestrian and bicycle accessibility people will have the freedom to choose how to travel to take care of their needs."

These passages provide explicit evidence of the community's commitment to reducing automobile dependency, providing residents with options in transportation, creating recreational travel opportunities, and more tangibly, building an infrastructure to enable these ends.

Additionally, the Concept Plan addresses the implications of safety in bicycling and walking on the transportation system:

A safe environment minimizes exposure to vehicle accidents and other hazards, and contributes to livability by enhancing people's sense of comfort and giving them freedom to choose to walk and bicycle without any danger. Creating a safe environment supports people choosing an alternative to the automobile and fosters public social contact.

Drawing a direct connection between personal transportation choices and the safety of the entire transportation system, the Concept Plan here asserts that residents should have the ability to choose a mode of travel with equity in safety and comfort across all modes. Further, the plan links the impact of safety on choices to engendering improved community interaction by encouraging residents to leave behind their cars for local trips and use sidewalks or bike lanes where they will

increase the likelihood of meeting their friends and neighbors.

The plan also speaks to linking land use with transportation in order to create developments that are more bikeable and walkable:

Coordinating land planning with the design of an interconnected street network ensures that the thoroughfares can support other objectives related to multi-modal transportation (specifically bicycle and pedestrian activities) and can replace internal vehicle trips with alternative methods of travel decreasing congestion on the arterial network.

This section connects walkability and bikeability to development patterns by demonstrating the effects of design on reducing automobile travel and in turn, a congested local street system.

In sum, this Watkinsville 2026 Concept Plan suggests a framework to improve cycling and walking environments, experiences, and options in the City. This audit will extend beyond conceptual goals and provide specific recommendations to improve safety and convenience in bicycle and foot travel. The ultimate goals of increasing the quality of experience for existing users and of encouraging non-users to begin to walk and bicycle within Watkinsville will be paramount to success in this project.

2.5 What is a Bikeable and Walkable Community?

A bikeable and walkable community is one in which residents and visitors are safe and feel safe using an interconnected, functional, and attractive system of bicycling and walking routes. Goals of bikeability and walkability can include reducing the environmental impacts of daily transportation, improving public health through increased exercise and improved safety, empowering the transportation-disadvantaged with greater mobility, generating tourism and economic activity by attracting foot and bicycle traffic into town, and creating a setting that fosters citizen interaction.



3. Bikeability

3.1 Methods

Watkinsville resident Clint Moore volunteered to serve as the citizen representative for the bikeability portion of this audit. As a daily bicycle commuter between Watkinsville and the University of Georgia, Dr. Moore provides the unique input of someone who is deeply familiar with the streets of both Watkinsville and with those of nearby Athens. Alongside Northeast Georgia Regional Development Center staff, Dr. Moore cycled predetermined routes throughout the community and completed a bikeability checklist developed by a partnership of the National Highway Traffic Safety Administration, the Pedestrian and Bicycle Information Center, and the US Department of Transportation.

Routes were selected to link residential areas to destinations such as downtown, shopping centers, the library, parks, cultural amenities, and other locations (route map in Appendix 1).

The bikeability checklist (Appendix 2) facilitates an evaluation of the type and physical quality of space for cycling on each roadway, the degree of safety and comfort at intersections, attitudes and behavior of nearby drivers, and the overall ease of bicycling. It also encourages the rider to think about specific measures that he or she took to make the ride safer, such as using appropriate gear (helmet, reflective clothing, lights), obeying laws and riding predictably, and extending courtesies of the road to other travelers. Five points-based categories use a scale of 1-6 for a total possible score of thirty on each route.

Dr. Moore also provided a narrative description of the routes and the experience of riding these thoroughfares in Watkinsville (Appendix 3). This delivers tangible insight into the environment (physical and behavioral) one might witness while cycling in town.

It should be noted that due to Dr. Moore's high level of comfort and expertise as an urban/commuter cyclist, his findings involving Watkinsville's bikeability characteristics are not necessarily representative of the typical resident who usually utilizes an automobile for commuting and running errands. Dr. Moore is likely able to navigate a dangerous route much more safely and predictably than the average recreational cyclist. This means that he is likely able to tolerate a less bikeable environment than would be a parent riding with young children or a beginning cyclist with little high-traffic road experience.

3.2 Routes

Northeast Georgia Regional Development Center staff and Dr. Moore identified the following routes for inclusion in the bikeability portion of this study. Routes were chosen because of their status as arterial or collector streets. Low-traffic, residential streets were not examined because they are typically safe and often feature low connectivity.

Route A: GA 15 and Main Street in downtown

Route B: Harden Hill Road heading NE from the city limits into downtown and Main Street, and Simonton Bridge Road heading NE to the city limits

Route C: Macon Highway from the bypass heading NE into downtown and Main Street, with spurs of New High Shoals Road heading NE and Colham Ferry Road heading N to Macon Highway

Route D: GA 53 heading SE from the bypass into downtown and Main Street

Route E: Barnett Shoals Road from the city limits heading W into downtown and Main Street

Route F: VFW Drive North from Harden Hill Road to GA 53

Urban cyclists typically prefer connectivity among more direct, major roads (which often feature minimal topography) to slower, more circuitous local streets. However, parents with children, slower cyclists, or those just beginning to cycle in town may be more comfortable riding as much of their route as possible on less frequently traveled residential streets.

3.3 Results

Route A: GA 15 and Main Street

Route A is the lowest-scoring, and therefore, theoretically least bikeable portion of the network identified in this audit. No dedicated space for bicycles, heavy and fast-moving traffic, and presence of trucks and/or buses on the roadway contribute to make this route unsafe and uncomfortable for cycling. Main Street in downtown Watkinsville is the only section of this route that is well-lit; it is also the sole section with relatively high “ease of use” (intuitive way-finding, secure bicycle parking, etc.), providing cyclists with a moderately suitable environment for riding.

Specific problems, in addition to traffic with high volumes and speeds, include:

- Potholes on Main Street
- Cracked/broken pavement
- Debris in the roadway (glass, sand, gravel)
- Uneven surface and/or gaps
- Long waits at intersections
- Signals that do not change for bicycles
- Confusion over where to ride through intersections
- Drivers passing cyclists too close, not signaling, running red lights or stop signs, and cutting off cyclists
- Harassment (or prior harassment) by drivers

Of a possible thirty total points, this route scored nine.

Route B: Simonton Bridge Road and Harden Hill Road

This route contains two slightly different segments. Simonton Bridge Road is a hostile and unsafe environment for cycling, and while Harden Hill Road features less and slower traffic, it fails to present a dramatically better environment for cycling. In addition to very (Simonton Bridge Road) and relatively (Harden Hill Road) heavy volumes and speeds, both routes lack significant lighting; Simonton Bridge Road also features a narrow and unsafe bridge crossing.

Other problems, such as the following, contribute to a difficult bicycling experience:

- Potholes, debris, and uneven surface/gaps on Harden Hill Road
- Cracked/broken pavement
- Drivers passing cyclists too close, not signaling, and running red lights or stop signs
- Harassment (or prior harassment) by drivers
- Drivers cutting off bicycle traffic

Route B scored 12 points overall (out of thirty).

Route C

Comprised mainly of Macon Highway from the bypass to downtown (including spurs of New High Shoals Road and Colham Ferry Road), Route C exhibits slightly better characteristics for safe and comfortable bicycling than Routes A and B. Of these three segments, New High Shoals is the clear leader for current bikeability, ranking first overall of any individual segment in the cycling portion of this study.

Macon Highway and New High Shoals Road exhibited heavy or fast-moving traffic (Colham Ferry Road did not); New High Shoals Road contains adequate space for cycling. Additionally, Macon Highway and Colham Ferry Road both lack sufficient lighting.

Problems in other categories include:

- Potholes on Colham Ferry Road
- Cracked/broken pavement
- Bumpy/angled railroad tracks on Colham Ferry Road and Macon Highway

This route received sixteen points.

Route D: GA 53

This route consists only of GA 53 from the bypass to Main Street downtown. With the exception of high-quality, even pavement, this route presented many problems. Traffic is extremely heavy and fast, with no formal or informal space for cycling, and bicyclists are exposed to truck and bus traffic.

These additional problems also face or are likely to face cyclists:

- Long waits at intersections
- Signals that do not change for bicycles
- Confusion over where to ride through intersections
- Drivers passing cyclists too close, not signaling, running red lights or stop signs, and cutting off cyclists
- Harassment (or prior harassment) by drivers

Route D scored fourteen points, six of which came from its high ranking in pavement quality.

Route E: Barnett Shoals Road

The most consistently high-scoring route in the study, Route E runs the entire length of Barnett Shoals Road in Watkinsville, and features a wide, bicycle-friendly right-of-way with relatively little traffic. However, some of this traffic includes buses and trucks, and the roadway is not well-lit.

Other obstacles to safe cycling include:

- Cracked/broken pavement
- Debris in the roadway (glass, sand, gravel)
- Bumpy/angled railroad tracks
- Signals that do not change for bicycles
- Drivers passing cyclists too close, not signaling, running red lights or stop signs, and cutting off cyclists
- Harassment (or prior harassment) by drivers

This route ranked highest with eighteen points out of thirty.

Route F

Connecting GA 53 and Harden Hill Road, VFW Drive serves as Route F. This corridor is mainly a residential connector street, but also houses Watkinsville's City Hall. Low traffic and good lighting at night are positive characteristics for cycling along VFW Drive, but no dedicated cycling space exists.

Other problems include:

- Cracked/broken pavement
- Drivers passing cyclists too close, not signaling, and running red lights or stop signs

The aggregate score for this route is seventeen.

4. Walkability

4.1 Methods

The methods used to gauge walkability in Watkinsville differ significantly from those in the bikeability section of this audit. This is because of the willingness of an outside group to execute a questionnaire for walkability, but also serves as a way to evaluate two different techniques for utility and efficiency.

A University of Georgia Department of Kinesiology class, directed by Dr. Elaine Cress, composed and distributed walkability surveys as part of its project for the Spring term of the 2007 academic year. Residents were invited to pick up and drop off surveys at Watkinsville City Hall, the Oconee Public Library, Sweet Retreat, and Girasole's Restaurant.

Respondents followed a predetermined route, or multiple routes, based on origins such as residential areas and destinations including downtown, shopping centers, the public library, parks, cultural amenities, and other locations (map in Appendix 4).

Questions addressed physical elements (sidewalks, crosswalks, obstructions, etc.), perceived safety (such as driver behavior and ease of following safety rules), overall pleasantness, hypothetical scenarios for gauging what is necessary to make people walk more, and demographic information (Appendix 5).

The Northeast Georgia Regional Development Center conducted a field analysis of existing sidewalk and crosswalk conditions in Watkinsville, and found deficiencies in both areas.

4.2 Routes

The UGA Kinesiology study identified four main routes for walking in Watkinsville, as follows:

- Route A: Christian Drive, heading NW starting at Felton Drive, with a cut-through into Harris Shoals Park, SE on Experiment Station Road/SR 15, and SE along Main Street
- Route B: Harden Hill Road heading NE from the city limits and NW along Main Street, including the following side streets connecting to Harden Hill Road:
 - Jacobs Drive
 - Jackson Drive
 - Christian Drive
 - VFW Drive
 - Hight Drive
- Route C: Taylor's Drive, Taylor's Court and cut-through to Katie Lane heading SW, Wilson Road SW, Third Street between Barnett Shoals Road and Simonton Bridge Road, Barnett Shoals Road from Third Street to Main Street, and Main Street NW to Simonton Bridge Road
- Route D: Simonton Bridge Road heading SW from the city limits to Main Street

These four routes provide the framework of arterial streets that connect residential zones with the destination areas mentioned above. Minor residential streets, for the most part, were not included in this audit because of their relatively low traffic volumes, speeds, and hazard potential.

Additional routes identified as shortcuts but not programmed into the questionnaire include:

- Connection heading NE through an undeveloped field between Bond Drive and Durham Street
- Mulberry Street and Third Street heading SW from Simonton Bridge Road to Main street, Third Street heading SE from Mulberry Street to School Street, and School Street heading SW to OCAF

These routes provide important complements to the established transportation infrastructure by providing safer and potentially more direct access between neighborhoods or from residential areas into destination areas.

4.3 Results

Overall, survey respondents (22 responses total) nearly universally noted problems with space for walking and crossing streets, driver attitudes and behaviors, ease of following safety rules, and overall pleasantness.

Only 18 percent indicated having enough space to walk on their routes, with nearly two-thirds citing too much traffic as a problem and over one-quarter each noting sidewalk problems and other difficulties. Intersections fared somewhat better, with 32 percent of surveys indicating ease of crossing, although over 60 percent of respondents encountered blocked views of traffic and a quarter noted the absence of a crosswalk or signal.

Fewer than 30 percent of responses indicated that drivers behaved well, though more than one-third reported drivers having sped up to make it through traffic lights or having driven through traffic lights outright.

Over two-thirds of answers reported an unpleasant walk, with problems such as dirty walking space (34%); areas that were not well-lit (27%); scary dogs or people (14%); a need for grass, trees, or flowers, and; other concerns (27%).

The only safety rule deemed easy to follow was the ability to look right and left before crossing. Between 60 and 70 percent of respondents indicated inability to cross at crosswalks, walk on sidewalks (or shoulders facing traffic where sidewalks were unavailable), and cross with traffic lights.

Selected route-specific information follows:

	Route A	Route B	Route C	Route D
There was room to walk	29%	17%	25%	0%
Drivers behaved well	14%	17%	60%	38%
Walk was pleasant	43%	33%	20%	0%
It was easy to cross streets	29%	50%	20%	0%
Average Rating, Scale of 1-30	15	12	16	8

In addition to answering predetermined questions, respondents were encouraged to provide detailed comments on their experiences.

Route A Comments:

Uneven terrain; not aesthetically pleasing; trucks entering highway; narrow shoulders; no designated space for walking; crossings are too far between curbs; no crosswalks; blind curves; fast traffic; need speed breaks on Chastain Drive, it is a fast cut-through from Harden Hill Road to downtown; cars were too fast for walking; roads were too congested; cars crossed curb-cuts into/out of driveways and parking lots too fast; no child should be walking here

Route B Comments:

Walking in ditch - hurts ankles; Harden Hill Road really needs sidewalks - it connects many neighborhoods to downtown; no traffic signal; need clearer pedestrian signs; speeding on Harden Hill Road; too much fast traffic; incinerator smell at times; felt anxious and in danger

“I drove into town to walk with my 3 children - ages 6, 4, and 16 months. Unfortunately - I drove 2 routes indicated on attached map because I was afraid for our safety. I had not realized the mapped routes had no sidewalks at all - we just couldn't risk the kids' lives!”

Route C Comments:

Hardly any sidewalks; sidewalks were cracked; dead squirrel; no crosswalks or lights; traffic on Barnett Shoals Road; cars were too fast; decapitated squirrel; some animals can be a deterrent

Route D Comments:

Garbage, guardrails, tall grass, dead animals; narrow bridge; cars speeding and did not move over; shoulders blocked with poles, signs, shrubbery, trenches, guardrails; too much traffic; no crosswalks; road curves - blocked view of traffic; drivers were too close; some drivers widened path for pedestrians; felt anxious and in danger

General Comments:

- “Main roads need: pedestrian friendly signs, crosswalks - not always at intersections. Extension of shoulders on roads if sidewalks are not feasible. Connection from Bond to Durham needs clearing of field, pathway, lights, shrubbery, signage.”
- “Need sidewalks or shoulder expansion. Need garbage pick-up and road-kill removal. Bridge very unsafe.”
- “Simonton Bridge Rd. Is a major avenue into downtown from several neighborhoods. It is really in need of sidewalks to connect that side of town to Main Street.”
- “We live less than a mile away and I won't even let my children ride a bike or walk to the library.”

5. Implementation & Recommendations

5.1 Bikeability

Bikeability in Watkinsville is compromised both by dearth of facilities for bicycling and by human behavior. To become a safer and more convenient place for bicycling, Watkinsville must invest in infrastructure, education, and enforcement. Roads as currently configured do not present options for safe cycling, usually because of lack of space, but often also due to inadequate maintenance. Additionally, both drivers and cyclists alike must be educated about the rules, rights, and responsibilities of safe road use, and laws must be enforced appropriately, evenly, and fairly when violated.

Excluding New High Shoals Road and Barnett Shoals Road, Watkinsville has no functional on-road bicycling space. Further, these two exceptions do not provide dedicated lanes for bicycle use, but rather feature wide driving lanes or shoulders. On-street bicycle travel lanes are safe and predictable spaces for cycling - sidewalks prove dangerous for bicycle riding because of the large number of curb cuts that present high likelihoods of cyclist/motorist conflicts, and many automobile lanes do not provide enough space to accommodate bicycle traffic safely.

The following streets should be considered strongly for construction of bicycle lanes in the near future:

- GA 15 and Main Street
- Simonton Bridge Road
- Harden Hill Road
- Colham Ferry Road
- Macon Highway
- GA 53

Barnett Shoals Road and New High Shoals Road may be able to be striped with bicycle lanes immediately, and VFW Drive should be added to a lower-priority list of projects.

Another important safety measure for cycling is the condition of the roadway's surface. With few exceptions, streets displayed some combination of cracked or uneven pavement and debris in the traveling area (usually pushed to the side, which is where bicycle traffic typically flows). While the former problem requires extensive resource allocation to fix, the latter would be ameliorated by periodic maintenance and cleaning.

A better cycling experience would be facilitated by ensuring that all intersection signals are bicycle-sensitive. The following roads feature intersections at which bicycles do not trigger traffic signal changes:

- Main Street
- GA 15
- Simonton Bridge Road
- GA 53
- Harden Hill Road

The inconvenience of waiting at an intersection for the signal to change may eventually lead to a cyclist choosing to cross or turn against the light, which could lead to extremely dangerous situations. Therefore, it is recommended that these intersections be reexamined and retrofitted to change with the presence of bicycle traffic.

Another problematic feature of many intersections is the lack of an intuitive route or direction through which to navigate when crossing or turning. With the exception of Harden Hill Road, the previously listed group would benefit from arrows, colored painting, or diagrammatic signs depicting the correct course of travel through intersections.

Regarding driver behavior, every street involved in this audit showed signs (or high potential thereof) of several indicators of poor conduct by motorists:

- Traveling too fast
- Passing cyclists too close
- Not signaling
- Running red lights or stop signs
- Cutting off cyclists
- Harassment

This is typical of a community with an inadequate physical infrastructure for cycling since motorists are not often exposed to cyclists and are either unsure how to act around them or unappreciative of their presence. Two important components of a successful strategy to improve cyclist-driver interaction on roadways are education and enforcement.

Education of motorists and cyclists about proper conduct while traveling is paramount to a respectful (and conflict-free) multi-use roadway environment. Examples include PR campaigns (public service announcements, press releases for publishing in local newspapers, or informal signs and fliers), “Share the Road” signs on all non-residential streets, safe cycling classes that encourage bicyclists to ride predictably and signal, and anything else that will alert all users to the presence of other types of traffic.

Another way to improve the visibility and overall presence of cyclists on local streets is to organize a safety-based, regular (the last Friday of every month at 6PM, for example) ride through town such as BikeAthens’ Courteous Mass. The concept behind such rides is to alert motorists to the presence of law-abiding and respectful bicycle travel or recreation on local streets. They also help to build community and often are accompanied by a stop at a local eating/drinking establishment at the end of the ride.

Second, and more easily implemented than a focused PR campaign or signage installation, a partnership with local law enforcement must be arranged that encourages officers to stop and warn or ticket violators (both cyclists and motorists) upon all violations. A reputation for intolerance of inappropriate behavior on the roads will make all users, whether they are in automobiles, on bicycles, or on foot, much more secure.

5.2 Walkability

As with bikeability, in order to become more walkable, Watkinsville must invest in infrastructure, education, and enforcement. Sidewalks and crosswalks should be extensive, interconnected, well-maintained, accessible, visible, and signed (both for safety and way-finding purposes). Motorists and pedestrians alike should be able to know immediately the appropriate spaces for driving and walking, and should be made aware of the laws of the road through public information campaigns and

educational workshops on safe walking in Watkinsville. Finally, law enforcement officials must take a firm position against violations relating to pedestrian issues, which can be done through both education and enforcement.

Such a combination of safe and accessible physical facilities, an informed and alert public, and the issuance of warnings and/or tickets to both offending drivers and pedestrians will make Watkinsville a better community for walking.

Watkinsville has very little dedicated pedestrian infrastructure. With the exception of sidewalks on portions of Barnett Shoals Road and Main Street/SR15, and crosswalks on Main Street, the City's main roads are void of safe walking facilities and must be added to improvement programs to encourage greater foot traffic and ensure safety for existing pedestrians.

Ideal candidates for sidewalks include:

- New High Shoals Road
- Harden Hill Road
- VFW Road
- Experiment Station Road
- State Route 15
- Simonton Bridge Road
- Barnett Shoals Road (remainder)
- Macon Highway

While Experiment Station Road and SR 15 (between Main Street and the rail line southeast of downtown) are slated for planned sidewalk improvements, the other streets listed above are not.

Various residential collectors, such as Third Street and Thrasher Drive, should be considered for sidewalks as well, but would likely be lower priorities than the more major roads listed above.

Crosswalks should be striped, signed, and when appropriate, signalized, at all non-residential intersections, such as:

- Simonton Bridge Road at Third Street and Second Street
- Barnett Shoals Road at Stone Shoals Way, Industrial Boulevard, Depot Street/Third Street, and Main Street/SR 15
- State Route 15 at Industrial Boulevard, Experiment Station Road, and Thrasher Drive
- Macon Highway at New High Shoals Road and McRee Street
- New High Shoals Road at Harden Hill Road
- Harden Hill Road at VFW Drive
- Experiment Station Road at VFW Drive

Signalization may be necessary at intersections of two major roads such as Experiment Station at SR 15.

In addition to developing new infrastructure for pedestrian travel, Watkinsville should perform periodic maintenance on its existing sidewalk network and ensure that all crosswalks are sufficiently signed and signalized to facilitate safe crossings. In addition to being in disrepair, several sections of existing sidewalk are too narrow or otherwise difficult to navigate to be truly wheelchair-accessible.

The sidewalk along Barnett Shoals Road has undergone significant wear and tear, and is broken in several locations - this should be rectified by re-pouring concrete where appropriate. Additionally, curb cuts along this route are steep in certain locations. A section of sidewalk along the west side of Main Street between Barnett Shoals Road and Harden Hill Road bulges significantly and should be redesigned to accommodate wheelchair use.

The crosswalk at Main Street and Simonton Bridge Road appears to be inaccessible and should be reconstructed to afford more room to turn and level the severe slopes at curb cuts. A crosswalk sign at Main Street and Third Street blocks sight of the Eagle Tavern's sign. Additionally, this vertical yellow sign that is posted alongside the right-of-way next to the traffic lane, in addition to the other similar signs on Main Street, may not be explicitly visible to all motorists on Main Street.

Connectivity is another important opportunity for improvement in walkability. The UGA Kinesiology project team identified three important cut-through routes that connect neighborhoods to each other or to other destinations:

- Christian Drive heading N into Harris Shoals Park and its trail system
- Bond Drive heading NE across a vacant lot to Durham Street
- Taylor's Drive S to Katie Lane

These connections are important because they may allow residents to reach destinations faster and safer than roads alone; this becomes especially important to young children who can access their friends' houses without leaving neighborhood streets. However, developing these connections from informal cut-through routes to public spaces could require significant costs. An alternative would be to organize residents into volunteer work teams and seek donated supplies from merchants such as the Stone Store, Home Depot, Lowe's, or others. In addition to creating a safe, usable facility for little cost, this can also lead to increased sense of ownership and community among residents, which fosters interaction and security through increased presence.

Streetscaping techniques can be used both to increase the aesthetic qualities of a corridor and to reduce the risk of bodily harm to pedestrians, cyclists, and motorists alike. Street trees delineate the driving corridor, provide a visual and physical buffer between pedestrians and cars, and can act to protect pedestrians against errant vehicles that may veer outside traffic lanes. Traffic islands in the middle of the street provide another opportunity for vegetative beautification, but more importantly, serve as refuge in a wide crosswalk area between far-apart corners or mid-block curbs.

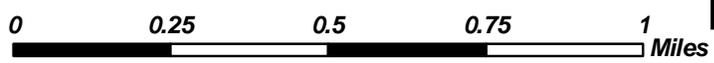
Along these lines, streetscaping can be complemented by frequent litter and dead animal removal, and elimination of obstacles such as mail boxes, garbage cans and recycling bins, and utility poles from the walking right-of-way.

Finally, Watkinsville should require all new developments to construct accessible sidewalks and multi-use paths between neighborhoods and greenspace. While individual projects may not immediately connect to existing sidewalk or path networks, this practice will help to pedestrianize the City as it develops or redevelops. An ordinance requiring such standards has already been proposed in Watkinsville.

Appendix 1. Watkinsville Bikeability Routes

Legend

- Route A
- Route B
- Route C
- Route D
- Route E
- Route F



Go for a ride and use this checklist to rate your neighborhood's bikeability.



How bikeable is your community?

Location of bike ride (be specific): _____

Rating Scale:



1. Did you have a place to bicycle safely?

a) On the road, sharing the road with motor vehicles?

- Yes Some problems (please note locations):
- No space for bicyclists to ride
 - Bicycle lane or paved shoulder disappeared
 - Heavy and/or fast-moving traffic
 - Too many trucks or buses
 - No space for bicyclists on bridges or in tunnels
 - Poorly lighted roadways
- Other problems: _____

b) On an off-road path or trail, where motor vehicles were not allowed?

- Yes Some problems:
- Path ended abruptly
 - Path didn't go where I wanted to go
 - Path intersected with roads that were difficult to cross
 - Path was crowded
 - Path was unsafe because of sharp turns or dangerous downhill
 - Path was uncomfortable because of too many hills
 - Path was poorly lighted
- Other problems: _____

Overall "Safe Place To Ride" Rating: (circle one)

1 2 3 4 5 6

2. How was the surface that you rode on?

- Good Some problems, the road or path had:
- Potholes
 - Cracked or broken pavement
 - Debris (e.g. broken glass, sand, gravel, etc.)
 - Dangerous drain grates, utility covers, or metal plates
 - Uneven surface or gaps
 - Slippery surfaces when wet (e.g. bridge decks, construction plates, road markings)
 - Bumpy or angled railroad tracks
 - Rumble strips
- Other problems: _____

Overall Surface Rating: (circle one)

1 2 3 4 5 6

3. How were the intersections you rode through?

- Good Some problems:
- Had to wait too long to cross intersection
 - Couldn't see crossing traffic
 - Signal didn't give me enough time to cross the road
 - Signal didn't change for a bicycle
 - Unsure where or how to ride through intersection
- Other problems: _____

Overall Intersection Rating: (circle one)

1 2 3 4 5 6

Continue the checklist on the next page...

4. Did drivers behave well?

- Yes Some problems, drivers:
- Drove too fast
 - Passed me too close
 - Did not signal
 - Harassed me
 - Cut me off
 - Ran red lights or stop sign
- Other problems: _____

Overall Driver Rating: (circle one)

1 2 3 4 5 6

5. Was it easy for you to use your bike?

- Yes Some problems:
- No maps, signs, or road markings to help me find my way
 - No safe or secure place to leave my bicycle at my destination
 - No way to take my bicycle with me on the bus or train
 - Scary dogs
 - Hard to find a direct route I liked
 - Route was too hilly
- Other problems: _____

Overall Ease of Use Rating: (circle one)

1 2 3 4 5 6

6. What did you do to make your ride safer?

Your behavior contributes to the bikeability of your community. Check all that apply:

- Wore a bicycle helmet
- Obeyed traffic signal and signs
- Rode in a straight line (didn't weave)
- Signaled my turns
- Rode with (not against) traffic
- Used lights, if riding at night
- Wore reflective and/or retroreflective materials and bright clothing
- Was courteous to other travelers (motorist, skaters, pedestrians, etc.)

7. Tell us a little about yourself.

In good weather months, about how many days a month do you ride your bike?

- Never
- Occasionally (one or two)
- Frequently (5-10)
- Most (more than 15)
- Every day

Which of these phrases best describes you?

- An advanced, confident rider who is comfortable riding in most traffic situations
- An intermediate rider who is not really comfortable riding in most traffic situations
- A beginner rider who prefers to stick to the bike path or trail

How does your community rate? Add up your ratings and decide.

(Questions 6 and 7 do not contribute to your community's score)

1. _____	26-30	Celebrate! You live in a bicycle-friendly community.
2. _____	21-25	Your community is pretty good, but there's always room for improvement.
3. _____	16-20	Conditions for riding are okay, but not ideal. Plenty of opportunity for improvements.
4. _____	11-15	Conditions are poor and you deserve better than this! Call the mayor and the newspaper right away.
5. _____	5-10	Oh dear. Consider wearing body armor and Christmas tree lights before venturing out again.
Total _____		

Did you find something that needs to be changed?

On the next page, you'll find suggestions for improving the bikeability of your community based on the problems you identified. Take a look at both the short- and long-term solutions and commit to seeing at least one of each through to the end. If you don't, then who will?

During your bike ride, how did you feel physically? Could you go as far or as fast as you wanted to? Were you short of breath, tired, or were your muscles sore? The next page also has some suggestions to improve the enjoyment of your ride.

Bicycling, whether for transportation or recreation, is a great way to get 30 minutes of physical activity into your day. Riding, just like any other activity, should be something you enjoy doing. The more you enjoy it, the more likely you'll stick with it. Choose routes that match your skill level and physical activities. If a route is too long or hilly, find a new one. Start slowly and work up to your potential.

Appendix 3. Descriptive Write-Up, Dr. Clint Moore

City of Watkinsville Bikeability Assessment

May 2007
Clint Moore

This is a narrative response to the Bikeability checklist for Watkinsville. It assesses each principal roadway in a way that could not be expressed through the survey questions. The roadways reviewed were:

- MS Main Street (SR 15 – from SR 53 to SR 24)
- NMS N. Main Street (SR 15 – from SR 53 to city limit)
- SMS S. Main Street (SR 24 – from SR 15 to city limit)
- GH Greensboro Hwy (SR 15 – from SR 24 to city limit)
- ESR Experiment Station Rd (SR 53 – from SR 15 to city limit)
- BSR Barnett Shoals Rd (from SR 15 to city limit)
- SBR Simonton Bridge Rd (from SR 15 to city limit)
- HHR Harden Hill Rd/Old Bishop Rd (from SR 15 to city limit)
- NHS New High Shoals Rd (from SR 24 to city limit)
- CFR Colham Ferry Rd (from SR 24 to city limit)
- VFW VFW Dr (from SR 53 to Harden Hill Rd)

Checklist Categories

1. Space and traffic

With three exceptions, no roads provided lane width that could be used simultaneously by a bicycle and a motor vehicle. NHS and BSR have either dual lanes or wide single lanes for a portion of their length, and VFW has no lane markings. The travel lanes of MS in the downtown core are wide, but bikes have to move far into the lane to avoid doors of parked cars. All other roads lacked paved shoulders, and the pavement edge often dropped abruptly several inches to dirt and gravel or led steeply into a ditch. All roads have fast traffic at times, but most roads have consistently fast traffic. The narrowness of some roads (HHR, parts of SBR) makes high traffic speeds particularly hazardous to all users and residents. Traffic is usually heavy on all of the state routes and is heavy on the secondary roads at morning and afternoon peak times. Large trucks frequently occur on GH, MS, ESR, NMS, and BSR. Except on MS, street lighting is spotty and does not light any route without large swaths of shadow.

2. Road surface

ESR has been recently paved and is the only principal roadway that has a smooth surface. The other state routes leading into town have numerous surface cracks. On these roads, long continuous cracks run approximately 1 foot parallel to the pavement edge, exactly where a cyclist would be riding. The secondary roads have many cracks, dips, potholes, pavement cuts, and other irregularities: HHR has an especially poor surface. The roads are mostly clear of debris, but sand and gravel accumulate at some intersections (e.g., ESR & NMS, NHS & SMS, CFR & SMS). The new railroad grade crossing on GH is quite smooth. The grade crossing at

BSR was in good shape (though signs to warn cyclists and motorcyclists of the angled crossing seem advisable), but those at CFR and HHR (Old Bishop Rd) are not.

3. Intersections

The three signals that regulate the MS intersections all provide sufficient time for cyclists to move through the intersection, but none appear to be tuned to be triggered by a bicycle. Lane positioning is generally clear at these intersections. Signage appears to be sufficient at other intersections. Because of the high speed and high volume of traffic, especially on the state routes, many cyclists would be uncomfortable in positioning to the left-hand side of a travel lane to make a left turn. For the same reason, cyclists would have difficulty entering some of the main roads from side streets (e.g, VFW at ESR, NHS at SMS).

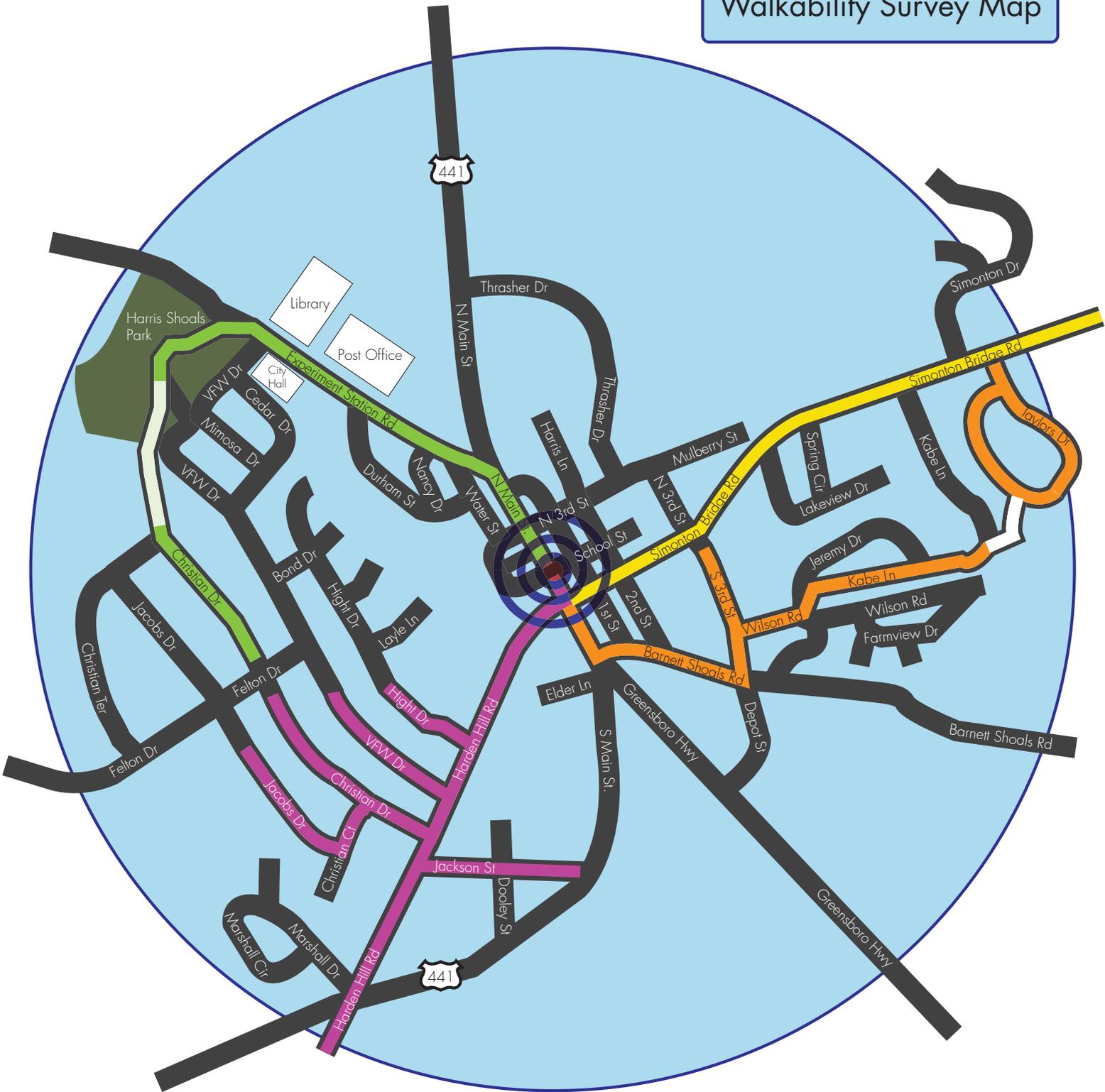
4. Driver behavior

The great majority of drivers that I encounter in Watkinsville are courteous, or at least not outwardly hostile, but many exhibit careless behaviors that routinely endanger me and other users of the road. The most common examples are speeding, failing to check for cross traffic at intersections, and distractions in the car. The worst and most inexplicable example is one that I see several times on each ride: overtaking the cyclist by passing into oncoming traffic. A very few drivers are overtly hostile to cyclists. Even with an open passing lane, such drivers will maintain their lane position and pass me inches to my left. In rarer cases (all have occurred in Watkinsville), drivers may verbally harass me, cut me off, or throw objects at me.

5. Ease in using bike

Watkinsville has the standard complement of highway and directional signage used in Georgia towns. There are supplemental signs that indicate directions to the post office, library, and points of interest. One of the state bicycle routes passes through Watkinsville (SBR 60), but it is unmarked (like the majority of such routes in Georgia). I am not aware of any bike parking facility in the city, except for a bike rack at the library. In Watkinsville, dogs are supposed to be fenced or on leash, but I have been chased by dogs on occasion (on HHR). Despite the close proximity of Athens and Watkinsville, it is extremely hard to commute by bike between the two cities. There are only two direct routes (NMS to US 441–Macon Hwy or SBR to Whitehall Rd–S Milledge Ave), and both carry heavy, high-speed traffic. The US 441 route, despite its 4 lanes, is slightly preferable only because it has a paved shoulder and because the broader curves and grades offer better visibility. Both routes also have river crossings with steep hills. Local governments and UGA should pursue acquiring the right-of-way of the rarely used railroad line to link these communities with a safe, level off-road path.

Watkinsville
Walkability Survey Map



Map Key	
	Route A
	Rt. A Cut-Through
	Route B
	Route C
	Rt. C Cut-Through
	Route D

Take a walk and use this checklist to rate your neighborhood's walkability.

How walkable is your community?

Location of walk _____

Rating Scale:



1. Did you have room to walk?

- Yes Some problems:
- Sidewalks or paths started and stopped
 - Sidewalks were broken or cracked
 - Sidewalks were blocked with poles, signs, shrubbery, dumpsters, etc.
 - No sidewalks, paths, or shoulders
 - Too much traffic
 - Something else _____
- Locations of problems: _____

Rating: (circle one) _____
1 2 3 4 5 6

4. Was it easy to follow safety rules?

Could you and your child...

- Yes No Cross at crosswalks or where you could see and be seen by drivers?
- Yes No Stop and look left, right and then left again before crossing streets?
- Yes No Walk on sidewalks or shoulders facing traffic where there were no sidewalks?
- Yes No Cross with the light?
- Locations of problems: _____

Rating: (circle one) _____
1 2 3 4 5 6

2. Was it easy to cross streets?

- Yes Some problems:
- Road was too wide
 - Traffic signals made us wait too long or did not give us enough time to cross
 - Needed striped crosswalks or traffic signals
 - Parked cars blocked our view of traffic
 - Trees or plants blocked our view of traffic
 - Needed curb ramps or ramps needed repair
 - Something else _____
- Locations of problems: _____

Rating: (circle one) _____
1 2 3 4 5 6

5. Was your walk pleasant?

- Yes Some unpleasant things:
- Needed more grass, flowers, or trees
 - Scary dogs
 - Scary people
 - Not well lighted
 - Dirty, lots of litter or trash
 - Dirty air due to automobile exhaust
 - Something else _____
- Locations of problems: _____

Rating: (circle one) _____
1 2 3 4 5 6

3. Did drivers behave well?

- Yes Some problems: Drivers...
- Backed out of driveways without looking
 - Did not yield to people crossing the street
 - Turned into people crossing the street
 - Drove too fast
 - Sped up to make it through traffic lights or drove through traffic lights?
 - Something else _____
- Locations of problems: _____

Rating: (circle one) _____
1 2 3 4 5 6

How does your neighborhood stack up?

Add up your ratings and decide.

1. _____ **26-30** Celebrate! You have a great neighborhood for walking.
2. _____ **21-25** Celebrate a little. Your neighborhood is pretty good.
3. _____ **16-20** Okay, but it needs work.
4. _____ **11-15** It needs lots of work. You deserve better than that.
5. _____ **5-10** It's a disaster for walking!
- Total** _____

Now that you've identified the problems, go to the next page to find out how to fix them.

Appendix 6. Project Updates, Mayor Jim Luken

Watkinsville Mayor Jim Luken was kind enough to arrange a site visit with staff to provide updated information on bikeability- and walkability-related projects in the City.

The following information was presented to staff:

- A walking path currently connects VFW Drive at Harris Shoals Park to the Christian Lake subdivision. This path also serves as part of a greenway system within the park, leading foot traffic along creek banks and through wetland environments.
- Sidewalk improvements are currently planned for State Route 15 from the railroad crossing into downtown to connect to existing sidewalks. Right-of-way has been purchased for this project.
- Sidewalk improvements are also currently planned for School Street and Third Street, to form a connection from Main Street at School Street, around Rocket Field, to Main Street at Third Street.
- The City is working on a cut-through from Taylor Landing to Katie Lane.
- A form-based code is currently in production for the City of Watkinsville; this will include a sidewalk ordinance and other sections that will contribute to positive changes in walkability and bikeability.

Mayor Luken also stressed that City leadership is very much aware of walkability and bikeability problems, and that he would like to see more specific design studies done to address some of the more difficult areas (such as Simonton Bridge Road, which contains little-to-no space for improvements). The Mayor and Council are interested in making the community a more walkable and bikeable place for economic, environmental, and social reasons, including downtown development, reduction of automobile reliance, and increased neighborly interaction.

Appendix 7. Evaluation of Methods

As noted in Section 4.1 of this document, different methods were used to evaluate bikeability and walkability in Watksnville. Bikeability information was gathered by Watkinsville resident Clint Moore with assistance from Northeast Georgia Regional Development Center staff. Walkability data were generated by a University of Georgia Kinesiology class directed by Elaine Cress (also a Watkinsville resident).

Though both yielded high-quality information that was critical to NEGRDC's evaluation of the City's bicycling and walking environments, the method used to assess bikeability was less time-consuming and more qualitative than the public survey-based walkability data gathering process. However, the fact that an outside group (UGA Kinesiology) was able to contribute significant resources makes such a process both productive and effective, and this should be evaluated for future availability. Coordination has been and will continue to be beneficial to all involved parties.