Winston-Salem Urban Area
Sidewalk and Pedestrian Facilities Plan

July 2007
## Volume I
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Chapter 1. Introduction, Goals and Objectives, Vision Statement

1.1 Introduction

Over the past 20 years, the trend towards walking has returned to the forefront. Whether for recreation, to improve our health, for exercise or to just meet neighbors, we have taken to the sidewalks, the gym, the track, greenway trails and sometimes to the street itself to get in our daily walk.

Most of the existing sidewalks are in the urban core of our oldest city and town centers: Winston-Salem, Kernersville and Rural Hall. The Town of Lewisville and the Village of Clemmons began installing sidewalks in the mid to late 1990’s and Walkertown has just recently started installing sidewalks. For the past several decades Forsyth County has experienced a great dispersal of development, and a division of land uses that offered little or no pedestrian connectivity. Roads were designed and built to accommodate this sprawling type of development, again, for the most part without sidewalks. Citizens have moved farther and farther away from the urban core, away from the existing infrastructure, jobs, services and shopping areas; this has made it much more difficult to provide sidewalks at the same level as in the urban core. We have allowed living and working areas to become separated from each other making walking to work or to the drug store a difficult choice. Over time we have increased our dependence on the automobile and reduced our dependence on other modes of transportation.

Because of our need for more and better accessible modes of transportation, planning for pedestrian facilities is on the rise. In 1994 the North Carolina Department of Transportation (NCDOT) realized the need to add pedestrian planning to its multi-modal planning program. They created a Bicycle Program in 1974, and subsequently added pedestrian planning to its bicycle program. In November of 1996, the NCDOT
adopted the Bicycle and Walking in North Carolina, Long-Range Transportation Plan, the first for the NCDOT. Most municipalities in the State had been doing sidewalk planning since their incorporation.

With the adoption in 1999 of the Winston-Salem/Forsyth County 2025 Multi-Modal Long-Range Transportation Plan, the goal has been to enhance and improve the pedestrian infrastructure throughout the county. Now that all nine Forsyth County municipalities have adopted the county’s comprehensive plan the Legacy Development Guide, there is more widespread support for pedestrian accommodations. Legacy provides numerous reasons why we need to plan for better pedestrian accommodations. A well-planned pedestrian transportation system provides for a more balanced overall transportation system. Legacy provides a framework for detailed land use plans within the county, area planning and the development guide process. This Pedestrian Plan also recommends using the area plan process as the framework to build the pedestrian system along non-Thoroughfare Plan streets. Since the area plan process is citizen driven, it offers the most appropriate avenue for the evaluation of existing and proposed pedestrian facilities.

1.2 Goals and Objectives

The first task in the development of the Pedestrian Facilities Plan was to form a steering committee that consisted of individuals who would best represent the users of the pedestrian system. Members of the committee consisted of various City Staff, Town Managers, NCDOT staff, Forsyth County Health Department staff, Winston-Salem/Forsyth County Schools staff, and a representative of The Adaptables. The Adaptables, Inc. is a not-for-profit group headquartered in Winston-Salem, NC. In addition to providing information and referral, advocacy, and community resources to persons with disabilities, The Adaptables, Inc. are also the Center for Independent Living for Davidson, Davie, Forsyth, Stokes, Surry, and Yadkin Counties. The steering committee developed a vision statement and goals/objectives for the Plan. The vision
statement puts forward a future vision of the importance of the pedestrian system to the Winston-Salem Urban Area and its citizens.

Vision Statement

“The Winston-Salem Urban Area is a pedestrian friendly community where sidewalks offer a mode of transportation that provides access for all, promotes healthy lifestyles, and improves air quality.”

Goal 1: Facility Quantity
To increase the number of pedestrian facilities: Sidewalks, crosswalks, pedestrian safety improvements at intersections, and other related amenities.

Objective 1: New sidewalk construction should be a top priority, especially to produce connectivity. In addition, pedestrian crossings, signals, crosswalk treatments, signage, furniture and streetscaping elements should also be a top priority in areas with high pedestrian usage because they significantly increase the use of the pedestrian system.

Objective 2: Funding new pedestrian facilities is a capital intensive task and needs to be a coordinated effort between both the private and public sectors, with the local government taking a strong lead role in aggressively funding, providing matching funding and undertaking policy initiatives to ensure completion of a seamless pedestrian system.

Objective 3: Provide good connectivity between other modes of transportation

Objective 4: Connect neighborhoods to resources, such as, schools, parks, libraries, greenways, bikeways and recreational facilities.

Objective 5: Provide connections to commercial areas and retail centers.

Recommendation
The Capital Improvement Program (CIP) for the City of Winston-Salem and State Transportation Improvement Program (STIP) funded projects for the entire MPO will include those recommendations from this plan.
Reduce sidewalk gaps in the MPO by 25% in ten years.

Goal 2: Facility Quality
To improve the quality of both future and existing pedestrian facilities, especially in those areas that are suffering from poor conditions.

Objective 1: Pedestrian facilities should be kept in a safe and accessible condition in the entire MPO.
Objective 2: Connect current sidewalk network.
Objective 3: Promote walkable communities.

Recommendations
- The MPO should reduce the level of sidewalks meeting fair or poor rating in the pedestrian facility inventory by 25% in the next ten years.
- The City of Winston-Salem should conduct a survey every five years to determine the satisfaction level of its citizens on pedestrian facilities; this should include personal safety including vehicular traffic conflicts and lighting.
- Creation of a citizen request form.
- Creation of a citizen advisory committee.

Goal 3: Safety and Security
To enhance real and perceived pedestrian safety while increasing pedestrian activity.

Objective 1: Eliminate all pedestrian barriers.
Objective 2: Provide disabled accommodations at all intersections.
Objective 3: Provide grade separations where possible.
Objective 4: Provide safe crosswalks and signaling.

Recommendation
- As pedestrian activity continues to increase, the MPO should work to reduce pedestrian/motor vehicle related accidents.
- City Code and/or Ordinance changes to allow for an unobstructed path on sidewalks.

Goal 4: Coordination
To assure that those people and agencies responsible for providing transportation and land use options assume pedestrian considerations in their everyday policies and practices.

Objective 1: Capital Improvement Programs and Transportation Funded projects should include coordinated pedestrian projects which optimize limited resources to maximize connectivity and safety benefits.
Objective 2: Land development and policy should include pedestrian considerations as a core concern in every instance, including during preliminary project scoping. New development should be required to provide sidewalk connections to the nearest continuous sidewalk segment, just as would be required for water, sewer, or street connectivity.

Recommendation
- The MPO should develop guidelines that address aesthetics including building massing, eliminating blank walls, pedestrian furniture, and streetscapes to encourage pedestrian activity.

Goal 5: Quality of Life
To encourage healthier lifestyles.
**Objective 1:** Provide a means of physical activity and exercise.  
**Objective 2:** Use sidewalks to reduce vehicle trips and improve air quality.

**Recommendation**
- Evaluate user surveys for transportation and recreation and parks.
- Evaluate national census data for vehicle ownership, modes of transportation utilized, etc.

Goals, objectives and recommendations are grounded in realistic expectations of funding levels and other variables that may influence implementation, but also aggressive enough to inspire confidence that the Vision and Mission of the Pedestrian Plan will be achieved.

### 1.3 Benefits of Walkable Communities

For many years, small and large communities across America have been implementing strategies for better serving the needs of their community. They do this because of their obligations to promote safe travel for their residents. The benefits of safe modes of transportation include increased health and fitness, additional transportation options, lower levels of traffic congestions on area roadways, improved air quality from lower rates of vehicle emissions and an increased sense of community among residents.

Obesity from poor eating habits and lack of exercise has become a critical issue in America today. Our unhealthy lifestyles lead to increased rates of many diseases. The increased rates of disease reduce over-all quality of life for individuals and lead to increased medical costs for families, companies and local governments. Increasing our activity levels is a crucial part of any strategy directed at improving overall community health, and walking is an excellent way to increase regular activity levels.
Many factors go into determining quality of life for citizens of a community: the local education system, prevalence of quality employment opportunities and affordability of housing are all items that are commonly cited. Increasingly though, citizens claim that access to alternative means of transportation and access to quality recreational opportunities such as parks, trails, greenways and bicycle routes are important factors for them in determining their overall pleasure within their community. Sidewalks provide connectivity to these desired resources, limiting the need for automobile traffic. Communities that are attractive for residents can also attract new businesses and industries, and in turn, additional residents.

When people decide to get out of their cars and onto sidewalks, they make a positive environmental impact. They reduce their use of gasoline which then reduces the volume of pollutants in the air. Other impacts can be a reduction in overall neighborhood noise levels and improvements in local water quality as fewer automobile-related discharges end up in the local rivers, streams and lakes.

In 2001, The National Household Travel Survey found that roughly 40% of all trips taken by car are less than two miles. By walking rather than driving, citizens can have a substantial impact on local traffic and congestion. Additionally, many people do not have access to a vehicle or are not able to drive. An improved sidewalk pattern provides greater and safer mobility for these residents.

During 2006, the Winston-Salem Department of Transportation sent surveys out to random community members as well as handed them out at a variety of locations throughout the City. While this survey asked questions regarding all modes of transportation, specific questions were asked regarding sidewalks. See Appendix A for these results.

Many private and public organizations have completed studies and surveys that show the many benefits of walking. The ideas presented above are only a small sample of the information that is available.
Chapter 2. Background Information

2.1 History of Sidewalks

Some of the oldest paths and trails in Forsyth County are located in the earliest settlements; Bethabara, Bethania and Salem. Bethabara, established in 1753, was the first Moravian settlement in North Carolina. On December 27, 1757, the first burial occurred in God’s Acre in Bethabara. This is the first established walking path in Bethabara, from the settlement to the burial grounds. Other paths in the settlement included one from the Mill Site to the Stranger’s graveyard and the path to the Mill Site itself. Other significantly traveled paths in the area included the Great Wagon Road passing very near Bethabara and the Old Plank Road which passed through downtown Winston-Salem. Bethabara never had formal sidewalks; they simply used worn dirt paths. (interview with Ellen Kutcher, 5/4/2006).

Salem was founded in 1766 by Moravians from the settlements of Bethabara and Bethania. The earliest reference to sidewalks in Salem occurs on 1 September 1801, "The Sisters desire that their entrance to the Church is paved, because the path is very bad in case of rain. Bricks would serve as the cleanest pavement." (Aufseher Collegium minutes). Hard firing of brick was not common until after the American Revolution. Prior to the Revolution, it is unlikely that brick was used as a paving material. By the mid-nineteenth century, brick was the preferred sidewalk paving material although there is evidence of stone and dirt walkways.

Sidewalks were a common feature in housing developments prior to World War II. Unfortunately, during the building boom of the 1940s and 1950s, sidewalk construction in housing developments came to a virtual halt. During the late 1980s and early 1990s,
sidewalks started making a limited appearance in the new housing development areas.

2.2 Location and Demographics

The Winston-Salem Urban Area Metropolitan Planning Organization (MPO) lies in the Piedmont Triad region of North Carolina. It is located about one and a half hours west of Raleigh and about one and a half hours north of Charlotte. It consists of four counties, all of Forsyth County, northern Davidson County, northeast Davie County, and southern Stokes County. Within those counties in the MPO, there are twelve municipalities; Bethania, Bermuda Run, Clemmons, Kernersville, King, Lewisville, Midway, Rural Hall, Tobaccoville, Walkertown, Wallburg and Winston-Salem. The MPO encompasses 335,853 acres with a combined population of 346,036. The area’s economic history is in the tobacco and textile industries but more recently has migrated to more of a banking and medical research economy. There are also two major universities, Winston-Salem State University and Wake Forest University, and two major hospitals, Forsyth Memorial Hospital and Baptist Medical Center in the MPO. The table to the left, based on 2000 US census data, shows the racial makeup of the MPO.

It is important to look at the demographic characteristics of who is living in the MPO in order to create a plan that appropriately addresses needs. The following discussion assesses the MPO’s population in comparison to the state. When working with pedestrian related issues, it is important that the discussion assess characteristics such as age, income and commuting.

Race. The Winston-Salem Urban Area MPO has a racially diverse population with 69 percent of the population Caucasian (North Carolina 72 percent), 23 percent of the population African American (North Carolina 21 percent), 6 percent of the population Hispanic or Latino (North Carolina 4.7 percent) and 1 percent of the population Asian
The MPO reflects the trends of the state of North Carolina in terms of racial makeup.

**Age.** The median age for the Winston-Salem Urban Area MPO is 36 years old with the state and nation average at 35.3 years old. This high median age may be attributed to the large medical field population. Those aged 5 and under represent 7 percent and those 65 and over represent 12 percent of the population. The state average for those over 65 is 21 percent.

**Vehicle Ownership.** In the Winston-Salem Urban Area MPO, 8.6 percent of households have no vehicle and 34.4 percent have one vehicle. Both of these rates are similar to the state (7.5 percent no vehicles and 32.3 percent one vehicle). At the same time, the MPO has similar rates of two vehicles per household (38 percent) as those of the state (39 percent).

**Work Commute.** The Winston-Salem Urban Area MPO’s work commute for workers 16 years and over may be reflective of its vehicle ownership. The MPO has 80 percent of workers 16 years and older that travel to work by car while the state average is 79 percent. Reflecting vehicle ownership, 1.5 percent of the MPO’s workers take public transit (1 percent state) and 1.9 percent walked to work (1.9 percent state).

This statistical information shows that the Winston-Salem Urban Area MPO is full of pedestrians – from lower income populations that can not afford cars and the elderly who no longer drive, to medical professionals that walk to work and students walking to school.

### 2.3 Injury Analysis

The issue of safety is one of the most important aspects of planning and constructing pedestrian facilities. Sidewalks and other pedestrian facilities give the pedestrian a safer place to walk other than in the street. The data in Table 2a shows that in Forsyth
County alone from 2000 to 2004 there were a total of 436 crashes that involved a pedestrian; resulting in 35 deaths. The table also shows injury type, no injury, or unknown. Forsyth County over the five years averaged 7 deaths per year. According to the National Safety Council, approximately 5,900 pedestrians are killed by automobiles every year nationally with 84,000 suffering nonfatal injuries. Almost one-third of these victims are children under the age of 15 yet they represent only about 15% of the U.S. population.

Table 2a Winston-Salem Urban Area MPO Injury Data from 2000 to 2004

<table>
<thead>
<tr>
<th>Injury</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>Totals</th>
</tr>
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<tbody>
<tr>
<td>Fatality</td>
<td>8</td>
<td>4</td>
<td>12</td>
<td>5</td>
<td>6</td>
<td>35</td>
</tr>
<tr>
<td>Disabling Injury</td>
<td>9</td>
<td>10</td>
<td>9</td>
<td>10</td>
<td>10</td>
<td>47</td>
</tr>
<tr>
<td>Evident Injury</td>
<td>14</td>
<td>25</td>
<td>30</td>
<td>39</td>
<td>40</td>
<td>148</td>
</tr>
<tr>
<td>Possible Injury</td>
<td>22</td>
<td>31</td>
<td>47</td>
<td>29</td>
<td>42</td>
<td>171</td>
</tr>
<tr>
<td>No Injury</td>
<td>2</td>
<td>7</td>
<td>3</td>
<td>5</td>
<td>5</td>
<td>22</td>
</tr>
<tr>
<td>Unknown</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>13</td>
</tr>
<tr>
<td>Totals</td>
<td>58</td>
<td>79</td>
<td>104</td>
<td>91</td>
<td>104</td>
<td>436</td>
</tr>
</tbody>
</table>

Counts are of pedestrians.

All of the data in both Table 2a and 2b has been obtained from the University of North Carolina Highway Safety Research Center.

Table 2b shows the age of the pedestrian compared to the type of injury sustained for Forsyth County from 2000 to 2004. As you can see Forsyth County has fared somewhat better than the national average when trying to keep our children safe when walking. About 20 percent of the total pedestrian injuries occurred in children age 15 or younger compared to about 33 percent nationally.
<table>
<thead>
<tr>
<th>Age Grouped</th>
<th>Fatality</th>
<th>Disabling Injury</th>
<th>Evident Injury</th>
<th>Possible Injury</th>
<th>No Injury</th>
<th>Unknown</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 5</td>
<td>3</td>
<td>3</td>
<td>7</td>
<td>6</td>
<td>1</td>
<td>1</td>
<td>21</td>
</tr>
<tr>
<td>6-10</td>
<td>2</td>
<td>2</td>
<td>17</td>
<td>10</td>
<td>2</td>
<td>2</td>
<td>34</td>
</tr>
<tr>
<td>11-15</td>
<td>2</td>
<td>1</td>
<td>17</td>
<td>13</td>
<td>1</td>
<td>0</td>
<td>33</td>
</tr>
<tr>
<td>16-20</td>
<td>2</td>
<td>2</td>
<td>16</td>
<td>18</td>
<td>4</td>
<td>1</td>
<td>43</td>
</tr>
<tr>
<td>21-25</td>
<td>1</td>
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<td>13</td>
<td>11</td>
<td>3</td>
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<td>26-30</td>
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<td>13</td>
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<td>25</td>
</tr>
<tr>
<td>31-40</td>
<td>3</td>
<td>8</td>
<td>25</td>
<td>39</td>
<td>5</td>
<td>2</td>
<td>82</td>
</tr>
<tr>
<td>41-50</td>
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<td>9</td>
<td>21</td>
<td>26</td>
<td>1</td>
<td>2</td>
<td>64</td>
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<tr>
<td>51-60</td>
<td>5</td>
<td>5</td>
<td>11</td>
<td>16</td>
<td>3</td>
<td>1</td>
<td>41</td>
</tr>
<tr>
<td>61-70</td>
<td>4</td>
<td>3</td>
<td>6</td>
<td>11</td>
<td>1</td>
<td>1</td>
<td>26</td>
</tr>
<tr>
<td>&gt;70</td>
<td>9</td>
<td>6</td>
<td>6</td>
<td>7</td>
<td>0</td>
<td>0</td>
<td>28</td>
</tr>
<tr>
<td>Unknown</td>
<td>0</td>
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<td>1</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>35</strong></td>
<td><strong>47</strong></td>
<td><strong>148</strong></td>
<td><strong>171</strong></td>
<td><strong>22</strong></td>
<td><strong>13</strong></td>
<td><strong>436</strong></td>
</tr>
</tbody>
</table>

There are many issues that affect crash data. One can be the under reporting of accidents, which may happen when the people involved in an accident may not wish to involve government officials. This is often the case with high populations of minorities or recent immigrants to the United States. In addition, many pedestrian related incidents are not reported because the resulting property damage cost is relatively low compared to vehicle on vehicle crashes, so the parties involved decide not to contact the authorities. While it is important to commend the Winston-Salem Urban Area MPO for its relatively low crash statistics, it is also important to recognize that these may not be entirely accurate and that improvements to local pedestrian facilities are still critical and necessary.
Chapter 3. Existing Plans, Programs, and Policies

3.1 MPO Planning Documents

The Federal government, through the recently adopted SAFE, ACCOUNTABLE, FLEXIBLE, EFFICIENT TRANSPORTATION EQUITY ACT: A Legacy for Users (SAFETEA-LU) requires that all urbanized areas develop and maintain a transportation plan that not only plans for roads and highways but plans for all modes of transportation including the pedestrian. The State also produces long-range policy, project and funding documents that are based on local level needs and state level interests and capacities.

Of all the plans, guidelines and strategies, the most commonly referenced documents for guiding the development for sidewalks in the MPO are: NCDOT's Long-Range Statewide Multimodal Transportation Plan (updated in 2004), The Winston-Salem Urban Area 2030 Transportation Plan, and the City-County Planning Board’s Legacy Development Guide. In each of the Plans, their function is to coordinate and guide sidewalk planning in a manner that meets the most critical needs first by developing projects that serve the greatest number and types of users.

As is the case in many municipalities, there are guidelines, goals, rules and requirements when planning for and constructing sidewalks. The following paragraphs summarize the key documents that were referenced when designing the Pedestrian Facilities Plan for the MPO.

NCDOT Statewide Multi-Modal Transportation Plan

The following information is from the Bicycle and Pedestrian section of the Statewide Multi-Modal Transportation Plan adopted in 2004:
In recent years, bicycle and pedestrian facilities have gained widespread acceptance in North Carolina as a legitimate transportation mode that serves an important, albeit sub-regional, transportation function. This progress is largely due to the efforts of NCDOT's Division of Bicycle and Pedestrian Transportation (DBPT), which actively partners with local governments to identify bike/pedestrian needs and provide technical assistance. DBPT, the oldest of its kind in the U.S., acts as a statewide advocate for bicycle/pedestrian safety and establishes policy guidance through materials such as *Bicycling & Walking in North Carolina: A Long-Range Transportation Plan* (1996) and the *Planning and Designing Local Pedestrian Facilities Report* (1997).

Although public interest for bicycle/pedestrian facilities is steadily growing, facility implementation challenges still exist. For example, NCDOT's current policy for sidewalk improvement cost sharing places a substantial financial burden on local governments. In many cases, needed sidewalks or extra width necessary for bicycle lanes are not incorporated into a project due to a lack of local funding. Planning for these types of facilities is now being considered earlier in the NCDOT planning process. Over time, this attempt to "mainstream" bicycle/pedestrian facilities will require additional training and active participation by DBPT staff to update design manuals and planning procedures.

Historically, state spending on stand-alone bicycle and pedestrian projects has been approximately $6 million per year. Assuming the development of new initiatives, doubling this annual allocation would provide much needed assistance without creating a significant financial burden on NCDOT. Therefore, the total annual bicycle/pedestrian needs are considered to be $12 million per year, amounting to $300 million over 25 years.

Notable features of NCDOT policy include:

- A sliding funding scale for sidewalk construction
- Requirement to have right-of-way in fee simple ownership or in easement if not already within the berm width of the roadway.
• Bridges of less than 200 feet in length scheduled to be built or replaced will have sidewalk on both sides funded by NCDOT; bridges over 200 feet will have sidewalk on at least one side of the structure. This is true ONLY if curb-and-gutter is present on both approaches leading to the bridge.
• There is no funding cap on the project cost, although “betterment” costs will be borne by the municipality.

Recommendations

✓ Requiring municipalities to cost share on one type of transportation facility but not on another introduces artificial bias towards the “free” facility. While municipalities are required or are encouraged to share in certain aspects of highway construction such as utility relocation, right-of-way preservation, or on-site wetlands mitigation, there is no direct cost to the municipality for constructing a roadway. The recommendation is to include sidewalk facilities as the norm in roadway construction and widening unless 1) an unsafe situation is introduced by including pedestrian facilities and 2) it is in a rural area or a limited access highway where pedestrians would not be allowed. This would bring NCDOT in agreement with federal guidance on this point and potentially alleviate a considerable amount of unnecessary disagreement during the formulation of transportation improvement programs.
✓ Update the NCDOT 1994 administrative process in light of the increased emphasis on context-sensitive solutions, i.e. adopted greenway plans.
✓ Include rural, unincorporated areas into the pedestrian policy. Since counties are generally not allowed under existing North Carolina State Statue to hold road right-of-way, they typically do not participate in any transportation construction or maintenance activities, including sidewalk maintenance.
✓ The justifications for sidewalk construction on bridges should be clearly indicated, and some flexibility on the need for curb-and-guttering on bridge approaches should also be added and defined in the State’s policy.
Winston-Salem Urban Area MPO 2030 Transportation Plan

The overall goal for the Winston-Salem Urban Area is a balanced and sustainable transportation system that links highways, transit, greenways, bikeways and sidewalks into a seamless transportation network that provides choices for people’s travel needs. Pedestrian Planning for the MPO has traditionally been found in the Winston-Salem Urban Area MPO Transportation Plan. With the 1999 adoption of the 2025 Long-Range Multi-Modal Transportation Plan, the Transportation Advisory Committee (TAC) adopted a series of policies with distinctive objectives to improve and enhance the safety and accessibility of pedestrians; improve our health and safety; and reduce our dependence on the automobile.

Two objectives of this adopted plan as it pertains to pedestrians are:

Promote land use patterns and transit-oriented design standards that support walking, bicycling and public transit and reduce the number and length of automobile trips.

Create a bikeway/sidewalk/greenway network that is an integral part of the transportation system and provides an alternative means of transportation and recreation.

The TAC also adopted a goal that by 2004 the following list of roadways should have sidewalks:

1. Hanes Mall Blvd (Stratford Rd to Silas Creek Pkwy): Hanes Mall to Frontis Plaza Drive completed—funding in place in 2006, project scheduled for completion.
2. Bethabara Park Boulevard (University Parkway to Reynolda Road): Sidewalks have been installed from Hine Park to the existing sidewalk along Bethabara Park Boulevard—project on schedule for completion, funding yet to be designated.
3. Stratford Road (Executive Park Boulevard to Knollwood Street): City Bond Project
for Stratford Road is currently being evaluated for the installation of sidewalks.

4. Reynolda Road (Yadkinville Road to Shattalon Drive): This project will be completed with the next issuance of sidewalk bonds.

5. Lewisville-Clemmons Road (Peace Haven to US 421): In progress in 2006. Sidewalks will be installed as a part of the widening of Lewisville-Clemmons Road, TIP project # V-3119.

Recommendations

- Amend the UDO to require the installation of sidewalk along all major and minor thoroughfares within the Growth Management Area 1-4, as defined on the Growth Management Plan Map, when projects are petitioned for both general use, and special use zoning petitions and building permits.
- Include the installation of sidewalks on both sides of a Thoroughfare Plan street when it is planned for widening in the Transportation Improvement Program (TIP), City bond projects, and Capital Improvement Programs (CIP).
- Include all sidewalk and pedestrian recommendations adopted as part of an Area Plan in the Pedestrian Facilities Plan.
- Include all sidewalk and pedestrian recommendations adopted as part of an area plan or comprehensive plan in Bermuda Run, Bethania, Clemmons, Kernersville, King, Lewisville, Midway, Rural Hall, Tobaccoville, Walkertown, Wallburg and Winston-Salem in the Pedestrian Facilities Plan and the capital improvement budget process for the jurisdictions.
- Include all sidewalk and pedestrian recommendations in the Revitalizing Urban Commercial Area (RUCA) report.

Legacy Development Guide

This is the comprehensive plan for Winston-Salem and Forsyth County and serves as the primary reference for growth management strategies, community development practices, and resource protection activities in Forsyth County and all eight of its
municipalities. It was adopted in 2001 and has a horizon date of 2015. Updates and companion documents are regularly produced. During the creation of this comprehensive plan, a vision for the area’s transportation options was developed along with a set of ten guiding principles. The vision includes an expansion of sidewalks and the ten principles represent the continuing interest in expanding transportation options, promoting connectivity between destinations, and ensuring that the character of the community supports human-scale experiences and improves overall livability. Chapter 4 Transportation Alternatives contains most of the information with regards to the pedestrian.

Notable features of the plan include:

- **Objective 3** - Design streets and highways that are safe, efficiently and effectively move vehicular traffic, accommodate pedestrians and bicyclists and have minimum negative environmental impacts.
- **Objective 6** - Create a bikeway/sidewalk/greenway network that is an integral part of the transportation system and provides an alternative means of transportation as well as recreational opportunities.

**Recommendations**

- Define and illustrate the concept of a pedestrian-oriented environment as recommended in Legacy through the following: the Legacy toolkit; Area Plans; and UDO amendments, including those for the mixed-use zoning district, planned residential developments and infill developments.
- Improve pedestrian circulation and safety in parking lots and around community institutions (such as schools) through the Planning Board’s site plan review authority and by revising the UDO to include standards for pedestrian circulation in parking lots and around institutions.
- Address how sidewalks should be provided in relation to infill and redevelopment within existing neighborhoods as part of the proposed Infill Development Standards to be included in the UDO.
Area Plans

One of the recommendations of *Legacy* is to prepare Area Plans for all of Forsyth County. These are detailed plans that apply the goals and policies of *Legacy* to specific areas of the community. Detailed land use recommendations are made for an area with the involvement of local neighborhoods. More detailed proposals for pedestrian facilities than is possible in the Winston-Salem Urban Area MPO pedestrian facilities plan have been and will be considered in Area Plans. This plan acknowledges the recommendations of the recently adopted Area Plans. As Plans in other areas are completed and adopted, the pedestrian facility recommendations of those plans will become part of this Plan.

Any Area Plans developed by other towns, such as the one most recently developed for the historic community of Vienna in Lewisville, will also become a part of this Pedestrian Facility Plan.

Greenway Plan

The goal of the *Greenway Plan Winston-Salem/Forsyth County 2015* is to improve the quality of life for residents of Forsyth County by expanding coverage of the existing greenway system thus providing recreational opportunities, protection of our natural environment and open space, and opportunities for walking and bicycling to a variety of destinations.

Forsyth County and its municipalities adopted the countywide Greenway Plan in 2005. The existing greenway system has approximately 17 miles of trail built. The Greenway Plan recommends that all major rivers and creeks with identified flood zones be designated as Greenway Corridors and include greenway connectors along minor creeks, utility corridors, and sidewalks. The Plan also recommends that minimum 40 foot easements be acquired along creeks that are greenway connectors, and identify greenway trails and connectors for development over the next 10-15 years. The
Greenway Plan calls for the construction of thirty-four miles of trails by the year 2015 with the major ones being sections of Brushy Fork, Muddy Creek, Tomahawk Creek, Grassy Fork Creek, Piedmont Trails, and extension of the Strollway.

The City of Winston-Salem operates one off-road, paved, pedestrian trail, the 1.2 mile Strollway. It provides access from downtown south connecting to the Salem Creek Greenway Trail.

**Recommendation**
- Coordinate the goals, policies, and development priorities of the greenway plan with those to be developed for this plan to achieve consistency of vision and approach for the overall pedestrian circulation system in the Winston-Salem Urban Area MPO.
- Connect proposed sidewalks to existing and proposed greenways.

**Revitalizing Urban Commercial Areas (RUCA)**

In July of 2002, the Winston-Salem City Council included the revitalization of older commercial areas in its Strategic Plan. Since that time, twelve areas have been identified as Revitalizing Urban Commercial Areas (RUCAs). Recommendations include public improvements, private site improvements, and regulatory changes. For each of the twelve areas, sidewalk needs (both new sidewalks and repair of older sidewalks) are noted.

**Winston-Salem Urban Area Comprehensive Bicycle Plan**

The Winston-Salem Urban Area Comprehensive Bicycle Plan was adopted by the Winston-Salem City Council in 2005. As this plan specifically pertains to bicyclists in the MPO, it does make recommendations for shared facilities such as sidewalks on bridges and sidepaths along busy roads. Below is the section of the City of Winston-Salem Code as it applies to cyclists and sidewalks:

![Figure 12: Strollway, Downtown Winston-Salem](image)
Sec. 42-286. Right-of-way of pedestrians; riding on sidewalk

(a) Whenever any person is riding a bicycle upon a sidewalk, such person shall yield the right-of-way to any pedestrian and shall give audible signal before overtaking and passing such pedestrian.

(b) It shall be unlawful for any person to ride a bicycle upon a sidewalk in the following locations or on the following streets;
   (1) Central business district.
   (2) Sunset Drive from First Street to Glade Street.
   (3) Liberty Street from 14th Street to 17th Street.

Parks and Open Space Plan, Winston-Salem and Forsyth County 2015

This parks and open space plan describes how the City of Winston-Salem and Forsyth County will provide parks and recreation opportunities for a ten-year period. The plan works to merge long established standards for “level of service” in recreation facilities and a newer practice of community standard setting.

All existing plans, programs and policies play a major role in the development of an overall pedestrian plan for the MPO. The end product is one “master” plan which could be referenced by the MPO when developing pedestrian facilities for their communities.

3.2 Adopted Sidewalk Plans and Policies

Of the twelve municipalities within the Winston-Salem Urban Area MPO, Clemmons, Kernersville, Lewisville, Walkertown and Winston-Salem currently have policies in place for sidewalk construction. Table 3a identifies the municipality and what each requires for sidewalk construction.
Table 3a

<table>
<thead>
<tr>
<th>City</th>
<th>Street Type</th>
<th>Width</th>
<th>Side of Street</th>
<th>Material</th>
<th>Planting Strip</th>
</tr>
</thead>
<tbody>
<tr>
<td>Winston-Salem</td>
<td>Collector</td>
<td>5</td>
<td>One side</td>
<td>Concrete</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Minor Thoroughfare</td>
<td>5</td>
<td>Both Sides</td>
<td>Concrete</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Major Thoroughfare</td>
<td>5</td>
<td>Both Sides</td>
<td>Concrete</td>
<td>Yes</td>
</tr>
<tr>
<td>Kernersville</td>
<td>Subdivision</td>
<td>5</td>
<td>Both Sides</td>
<td>Concrete</td>
<td>Yes</td>
</tr>
<tr>
<td>Clemmons</td>
<td>Subdivision</td>
<td>5</td>
<td>One Side</td>
<td>Concrete</td>
<td>No</td>
</tr>
<tr>
<td>Lewisville</td>
<td>Subdivision</td>
<td>5</td>
<td>One Side</td>
<td>Concrete</td>
<td>No</td>
</tr>
<tr>
<td>Walkertown</td>
<td>Subdivision</td>
<td>5</td>
<td>One Side</td>
<td>Concrete</td>
<td>No</td>
</tr>
</tbody>
</table>

In the Town of Kernersville the ordinance is as follows:

*Sidewalks shall be required in all residential subdivisions where curb and gutter streets are required. Sidewalks have to be placed three (3) feet back of curb and shall be five (5) feet in width … Sidewalks shall be placed on both sides of all residential streets with curb and gutter. …*

In the Town of Lewisville the ordinance is as follows:

*All new conventional residential subdivisions shall provide sidewalks, greenways, or bikeways at a ratio of one linear foot of sidewalk, greenway or bikeway per linear, centerline foot of public streets when considering the PRD or subdivision as a whole. … The exact location and type of pedestrian connection shall be determined during site plan and subdivision review process with emphasis on the functional relationship of the required connection to destination points and other existing or planned pedestrian segments. …*

In the Village of Clemmons the ordinance is as follows:

*All new planned residential developments and conventional subdivisions shall provide sidewalks, greenways, or bikeways at a ratio of one linear foot of sidewalk, greenway or bikeway per linear, centerline foot of public streets when considering the PRD or subdivision as a whole. … The exact location and type
of pedestrian connection shall be determined during site plan and subdivision review process with emphasis on the functional relationship of the required connection to destination points and other existing or planned pedestrian segments. …

In the Town of Walkertown the ordinance is as follows:

*Major subdivisions with public street dedication must have curb and gutter on both sides of the street and sidewalks on at least one side of the street. Streets, sidewalks and curb and gutter must be built to North Carolina Department of Transportation subdivision roads, minimum construction standards.*

*New commercial projects within the town core area requiring zoning or building permits must build sidewalks along the street frontage to connect adjoining parcels. These sidewalks must be built outside of the street right-of-way. The site must have internal sidewalks if there are multiple commercial buildings within the project.*

*If the project includes interior streets, sidewalks must be built on at least one side along these streets to connect to street frontages. Then sidewalk must be built along the street frontage to connect adjoining parcels.*

*New residential construction within the town core area requiring zoning or building permits shall either build sidewalks along the street frontage or deed a minimum 5-foot sidewalk easement outside the existing right-of-way for future sidewalk construction. Church projects and Neighborhood Business Zoning will be considered residential for the purposes of this ordinance.*

Rural Hall adopted the *Town of Rural Hall Bicycle and Pedestrian Facilities Plan* in 2001. The primary goal of the study is to guide the Town of Rural Hall and its citizens in the development of bicycle and pedestrian facilities.
Recommendations

- All existing and proposed thoroughfares must have sidewalks on both sides of the road. The sidewalks must be at least five feet in width with at least five feet of landscaping between the edge of the road pavement and the sidewalk.
- Sidewalks should be constructed on at least one side of each residential collector and local street.

Kernersville adopted the Town of Kernersville Pedestrian & Bicycle Plan in March 2007. The goal of the plan is to guide the town of Kernersville in the development of pedestrian and bicycle facilities.

Unified Development Ordinances (UDO)

The UDO provides for pedestrian access both in the context of the individual development and in terms of pedestrian features as a distinct element of any site development plan. Most recently, in the City of Winston-Salem the UDO was amended to include a subsection 3-13 STREET STANDARDS GOVERNING VEHICLE AND PEDESTRIAN CIRCULATION. Included in the amendments are specific requirements for sidewalk construction and is detailed in Table 3a above. The amendments to the UDO became effective on January 1, 2006 for the City of Winston-Salem. Forsyth County has also adopted the Street Standards ordinance with some changes specific for Forsyth County. Recommendations to clarify and strengthen the UDO for pedestrian access include:

Recommendations

- Definitions: The definitions section of the UDO should include pedestrian-related terms.
- Navigation: Consideration could be given to putting all pedestrian facility requirements in one comprehensive section with cross references in other related sections.
Applications and permits: Consideration should be given to including the overall connectivity and convenience of pedestrian circulation elements as part of the site plan approval process.

Off-street parking requirements: This section should be revised to include more detail on how pedestrian access must be incorporated into parking lot design.

Amend pedestrian related sections of UDO specific to the CBD to allow for free flow of pedestrian traffic.

Winston-Salem: Sidewalk Construction and Repair Policies

There are several methods for sidewalk construction in Winston-Salem: new sidewalk through a bond package, new development and sidewalk payment in lieu fees, and through the Winston-Salem Department of Transportation funding.

When a local government borrows money, it can choose to issue bond debt. With General Obligation bonds, a local government pledges as security for the debt its full faith and credit to repay this debt. Because the resources of the local government stand behind the repayment of this debt, it is considered the most secure form of debt issued by a local government and receives the most favorable interest rates. Because bond rating agencies have consistently given Winston-Salem its highest ratings, the City pays very low interest rates on the repayment of debt. Bond funds are typically used for capital expenditures which may require many years to build using pay-as-you-go financing. Financing projects with bonds provides equity to the current taxpayers by spreading the cost of the project to future users.

When the Engineering Division of the City of Winston-Salem Public Works Department determines that the construction of a required conventional sidewalk or alternative walkway is unfeasible due to special circumstances, including but not limited to: existing ribbon pavement, impending road widening, significant street trees, utility problems, grade problems or other construction difficulties, the City of Winston-Salem requires either, (1) a payment in-lieu of sidewalk construction; (2) construction of
sidewalks in the general vicinity of the project site; or (3) a combination of a conventional sidewalk, alternative walkway, or payment of a fee in-lieu. Payment in-lieu is only required in cases where a sidewalk is likely to be built within five (5) years from the date of plan approval. For payment in-lieu, the cost of the sidewalk construction is approved by the Engineering Division of the City of Winston-Salem Public Works Department and the payment for the sidewalk construction is made to the City of Winston-Salem prior to the issuance of occupancy permits or recording of final plats whichever is applicable. If the sidewalk is not built within five (5) years, the City of Winston-Salem Engineering Division determines whether to construct the sidewalk without the planned street improvement, delay installation further to coincide with a scheduled street improvement which has been delayed, or constructs the sidewalk in the vicinity of the site where it can be feasibly constructed.

Sidewalk Repair and ADA Ramps
Funding for sidewalk repair and ADA sidewalk ramps are requested annually as part of the budget process. Historic funding levels have been approximately $600,000 every other year.
Chapter 4. Engineering: Facilities Data

The Winston-Salem Urban Area MPO’s current pedestrian system is made up of sidewalks, greenways and trails. In order to understand the entire network, it is important to understand the major roads in the MPO, sidewalk location and condition, schools and land uses. The following section describes the existing pedestrian system and its related facilities.

4.1 System Overview

Major Roads

The MPO’s major north-south corridor is US 52. University Parkway also serves as a major north-south link between Winston-Salem and Rural Hall. The MPO’s major east-west corridors include I-40, Business40/US 421, US 311, and US 158.

Data Collection

When developing any plan, the first thing needed is reliable data. Prior to 2004, the MPO has never had data that reflected the entire existing sidewalk system. In June of 2004, staff members with the City of Winston-Salem Department of Transportation began collecting data on the existing sidewalk system. Data was collected by using a Global Positioning System (GPS) and walking all sidewalks within the Winston-Salem Urban Area. Staff collected data on location, condition, material type, and width of all sidewalks. They also collected data on sidewalk obstructions (utility poles, fire hydrants, signal boxes, newspaper boxes and overgrown vegetation). During this process staff located all handicap ramps and WSTA bus stops along existing sidewalks.

Table 4a

<table>
<thead>
<tr>
<th>Municipality</th>
<th>Length (Miles)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Winston-Salem</td>
<td>425.4</td>
</tr>
<tr>
<td>Kernersville</td>
<td>47.7</td>
</tr>
<tr>
<td>Clemmons</td>
<td>12.3</td>
</tr>
<tr>
<td>Lewisville</td>
<td>4.2</td>
</tr>
<tr>
<td>Rural Hall</td>
<td>2.6</td>
</tr>
<tr>
<td>King</td>
<td>1.5</td>
</tr>
<tr>
<td>Bethania</td>
<td>1.0</td>
</tr>
<tr>
<td>Walkertown</td>
<td>0.6</td>
</tr>
<tr>
<td>Sidewalks outside of a Municipality</td>
<td>13.5</td>
</tr>
<tr>
<td>Total</td>
<td>508.8</td>
</tr>
</tbody>
</table>
The first round of data collection was completed in early fall of 2005. Round two of data collection was completed spring of 2007. The data assisted in the development of a large map of the MPO showing the location of the existing sidewalk system. From this map staff can determine where in the system there are gaps or deficient sidewalk. The map can identify areas of need but each “gap” must be field checked to verify if a sidewalk can be constructed. There are situations where there may be a gap showing on the system map, but sidewalks cannot be constructed in that location due to steep slopes, no right-of-way, etc.

**Miles of Sidewalk**

During the data collection process not only are the location of the sidewalks recorded but the length of the sidewalk segments are also recorded. Table 4a shows the miles of sidewalk located in each municipality. Winston-Salem, being the largest city in the MPO, has the most miles of sidewalk while Walkertown, which just recently adopted their sidewalk ordinance, has the fewest miles of sidewalk. Within the MPO there were a total of 508.8 miles of sidewalk constructed as of spring 2007.

The City of Winston-Salem has approximately 1148 miles of road compared to the approximately 425 miles of sidewalk, which means that the City of Winston-Salem has a ratio of .36:1 of sidewalk to roads. In an ideal city, one might imagine that the ratio of miles of sidewalk to miles of roadway should be 2:1. This would be a scenario in which all city roads have sidewalk on both sides. However, this ratio might not always be possible, or even necessary. Even in an ideal city, some roads are limited access, such as I-40 and Business 40 in Winston-Salem. At the same time, some low trafficked neighborhood roads may not need a sidewalk at all, or may not need it on both sides of the road.

**Sidewalk Width**
Data collection also consisted of recording the width of sidewalks. Sidewalk width changes constantly throughout the MPO. The range of sidewalk width is from 2 feet up to as much as 20 feet. Wider widths of sidewalks were usually located in the downtown or city centers of the municipalities. The most common width is 5 feet and is currently the standard when constructing sidewalks. The MPO has approximately 300 miles of sidewalk with a width of 5 feet. Many areas around the United States have started to use a standard width of at least 6 feet, especially if the sidewalk is to be constructed right up against the curb of a street. The new street standards recently implemented in Winston-Salem call for a 6 foot sidewalk if constructed to the back of curb and gutter; otherwise, it is a 5 foot width sidewalk.

**Sidewalk Material Type**

Staff also recorded the material used in the construction of all sidewalks. The majority of sidewalks are constructed using concrete but they also can be constructed out of asphalt, brick, gravel, and stone. Many of the sidewalks constructed in the Old Salem area and Bethania are made from larger pieces of stone. Brick pavers are also a common construction material to use for sidewalks.

**Sidewalk Obstructions**

Once a sidewalk is constructed, especially in a downtown area, there is always a competition for space. There are a number of things competing for that space such as utility poles, signal boxes, newspaper boxes, benches, trash cans, fire hydrants, public art, automobiles and vegetation. While locating the sidewalks in the MPO, staff also located obstructions in the sidewalk. An obstruction, for the purposes of this Plan, is defined as anything blocking the sidewalk in which a person who is disabled could not safely navigate and continue on to their destination. The determination was made by the staff members in the field while collecting data. In many cases the obstruction can be moved in one direction or the other and allow enough room to navigate the sidewalk safely. There are times, however, where things such as fire hydrants and

![Figure 14: Brick Sidewalk](image)
utility poles cannot be easily moved. These items are identified and the proper
department contacted to try and resolve the problem. Many times people use the
sidewalk as a place to park their cars. This is an enforcement issue and the police
department should be notified in situations like these.

The most common obstruction noted in the data is overgrown vegetation. It is the
responsibility of the property owner to keep grass, bushes and trees from growing over
or obstructing the sidewalk. Many people are not aware that they are responsible.

Recommendation

- City codes and ordinances should be reviewed and updated regarding
  penalties for blocking pedestrian facilities.

Sidewalk Condition

Sidewalk condition in the MPO is evaluated by two conditions, uplifting and cracking.
New sidewalks or sidewalk segments that contain no, or very minimal, signs of
cracking or uplifting were rated as “good”. In the MPO there are 462 miles of sidewalk
rated in “good” condition, which is 93 percent of the total sidewalks in the MPO.

Recommendation

- Because sidewalks are continually being constructed throughout the MPO, a
  system is needed to keep the data current.

ADA Accessibility

Americans with Disabilities Act defines accessibility as the presence of a curb ramp at
both ends of the sidewalk segment. A non-compliant segment of sidewalk has either
no curb ramps or a curb ramp at only one end.
Transit

The transit system and the pedestrian system are two pieces of the transportation network that are critically dependant on each other to function well. Many of the people who use transit are also the main users of the pedestrian system. Good sidewalks and safe street crossings are often needed for walking to and from transit stops and pedestrian amenities like benches and shade trees are useful for making the wait at a stop more pleasant. It is important to know where transit stops and routes are when identifying pedestrian needs so as to ensure that adequate facilities are present to support transit and make for a smooth exchange between the two systems.

Winston-Salem Transit Authority (WSTA)
The City of Winston-Salem assumed the operation of the local fixed route bus system in 1968, naming it the Winston-Salem Transit Authority (WSTA). Fixed route buses serve all of the City’s major destinations including universities, hospitals, schools, businesses and shopping centers. WSTA also operates the paratransit system (Trans-AID) in all of Forsyth County. In 1997, a new multi-modal Transportation Center was opened in downtown Winston-Salem.

The fixed route system operates Monday through Friday from 5:30 A.M. to 7:00 P.M. for their daytime routes. Evening service is from 6:30 P.M. to midnight. WSTA operates buses on Saturday from 6:30 A.M. to 7:00 P.M. No service is provided on Sunday. As of January 2007, base fares are $1.00 and transfers are free. All vehicles are wheelchair accessible and all buses are equipped with bike racks.

Trans-AID provides transportation services to the elderly and disabled Monday through Saturday. The majority of passengers are clients of human service agencies. Trans-AID is also the Americans with Disabilities Act (ADA) complementary paratransit service for WSTA’s fixed route service.
Piedmont Authority for Regional Transportation (PART)
In June 1997 the North Carolina General Assembly passed Article 27, GS160A authorizing the formation of a Regional Transportation Authority in the Triad. This regional transportation authority was formed by the four largest cities, in the territorial jurisdiction, Winston-Salem, Burlington, High Point, and Greensboro. PART’s services include shuttles, express buses, ridesharing and commuter rails.

Since fare systems, routes and other policy options are subject to change, people are encouraged to contact the transit service agencies directly before taking their first trip.

Schools

It is important to discuss the school system in the pedestrian plan because schools are a prime opportunity to promote walking, both for the students nearby and for the employees who work there. Across the nation, the Safe Routes to School Program (discussed in further detail in Chapter 8) is promoting walking to school for a variety of reasons, including the need to combat today’s childhood obesity epidemic. In addition, schools are locations that are already the focal point of much car use and pedestrian activity.

The Winston-Salem/Forsyth County School system has a total of 67 schools: 40 elementary, 16 middle schools and 11 high schools. With 3,214 teachers, the school system averages approximately 47,000 students each year.

Figure 18: Carver High School, Winston-Salem
Chapter 5. Engineering: Pedestrian Facilities Plan

5.1 Where do people walk?

Trip Attractors

People in the MPO currently walk to a variety of destinations for a great number of activities. Each of these destination points is referred to as an attractor. The most common categories include:

- Schools (ex. All public and private elementary, middle, and high schools)
- Colleges (ex. Wake Forest University, Winston-Salem State University, Salem College, Forsyth Technical Community College, NC School of the Arts)
- Religious Institutions
- Parks, Playgrounds, Greenways (ex. Joanie Moser Park, Tanglewood Park, Skyland, Salem Creek Greenway, Silas Creek Greenway)
- Recreation Centers (ex. Reynolds Park Recreation Center)
- Shopping/Retail/Services (ex. Northside Shopping Center, Hanes Mall area)
- Libraries (ex. Clemmons Branch, Rural Hall/Stanleyville Branch, Southside Branch)
- Business Parks, Office Parks, Hospitals (ex. Central Business District (CBD), Forsyth Medical Center)
- Other Modes of Transportation: Bus Stops/Park and Ride Lots (Winston-Salem Transportation Center)

Each of these categories of attractors will be considered when determining locations for improvements and new sidewalks.
5.2 Opportunities

Improving pedestrian transportation in the Winston-Salem MPO can build on previous efforts. The main opportunities are 1) improving on the existing pedestrian system, and 2) taking advantage of more recent land use patterns that are placing more residents within walking distance of activities. The chief opportunity available to the MPO is the expansion of the existing sidewalk system.

The second opportunity is the existing patchwork of destination points. Until recently, land uses and development patterns in the MPO were not created so that a citizen could walk easily to destinations. The City-County Planning Board is trying to create development patterns that form a tight network of destinations from parks to residential areas, to schools, to employment centers, to shopping and tourist opportunities. Because the distance between these destination points can be quite short, there is significant potential for residents to make trips on foot. This pattern of land use makes it easier to build the sidewalk network.

5.3 Connectivity

Connectivity is a major issue when looking at a sidewalk system as a mode of transportation. Obviously for the system to function properly it must connect to the most popular destination points. It also should be a seamless system, one free of obstructions or missing segments and one in which you feel safe and comfortable. Not only should connectivity within the sidewalk system be addressed but connectivity between modes is also very important. Each trip begins and ends by walking. Whether driving a car, taking the bus, riding a bike or taking the train a person must first walk in order to get to those other modes. The sidewalk system should connect to transit stations, bus stops, greenways, park and ride lots, etc.
Recommendations

- Future connectivity should be addressed in all planning documents. As the Piedmont Authority for Regional Transportation expands throughout the MPO and the regional rail systems is considered, pedestrian facilities need to be accommodated.
- Address street crossings, not just at intersections but where sidewalks exist on only one side of the street.
- Link existing sidewalk facilities to retail center, institutions, office parks, and industrial facilities to internal pedestrian facilities.

5.4 Methods for Developing Facilities

This section describes the types of construction, maintenance and development projects used to create new sidewalks for pedestrians. Note that roadway, transit and re-construction projects offer an excellent opportunity for sidewalks to be incorporated into facility improvements. Another excellent opportunity for an increase in sidewalks is the subdivision and re-zoning process. It is much more cost-effective to provide a sidewalk when these projects are initiated than to come back later and “retrofit” a sidewalk into the existing site.

Roadway Construction/ Reconstruction & Bridge Replacements

Recommendations

- Pedestrians shall be accommodated any time a new road is constructed or an existing road is reconstructed. In the long-term, all roadways shall have pedestrian facilities. However, side paths are an acceptable solution when a roadway has high-speeds and high-traffic volume.
- All new or replacement bridges shall accommodate pedestrians on both sides of the bridge.
Re-zoning and Subdivisions

As part of the zoning and subdivision process, the City/County Planning Board looks at the overall design of the project. There are certain requirements that must be met based on the *Unified Development Code*. This includes location and construction of sidewalks.

Traffic Calming

In 2003, the City of Winston-Salem adopted a traffic calming policy for both existing neighborhoods and new developments. The goal of the policy is to improve neighborhood quality of life by reducing the negative impact of vehicular traffic in residential neighborhoods and by promoting safe and pleasant conditions for all users of local streets.

5.5 Corridor Identification

Corridors identified in this section are roads in which sidewalk construction is required on either one or both sides of the street depending on road classification. If a street is submitted in the zoning and subdivision process, then the requirements for sidewalk construction must meet the *Unified Development Ordinance*.

Non-residential developments and multi-family developments not requiring approval by the Planning Board or elected body are required to construct sidewalks if the development is located on one of the following roads per the *UDO*. 
Major and Minor Thoroughfares or higher

The Thoroughfare Plan Map and Technical Report which was revised in 2005 by the Transportation Advisory Committee (TAC) is the guiding document when deciding which major and minor thoroughfares or higher should be considered sidewalk corridors within the MPO. All of the existing and proposed major and minor thoroughfares are identified in the document with a “future” cross-section associated with each segment of road. Each segment’s recommended cross-section determines if sidewalks are required on those major or minor thoroughfares or higher.

Collector Streets

Currently, the MPO is in the process of developing a collector street plan. Once this plan is complete, it will identify both existing and proposed collector streets throughout the MPO. All collector streets, except those located in the Rural Growth Area as defined by Legacy, will also serve as sidewalk corridors.

Recommendation

- All Collector Streets will have sidewalks on both sides of the street.

Schools

Each school has its own unique situation, and planning for sidewalks around each school must be done on an individual basis. Some schools located in the more developed sections of the urban area have sidewalks where school children can safely walk or bike to school. There are also schools located in the suburban and rural areas that are not easily accessible by foot or bike. There may also be safety issues along some streets where a school is located due to heavy traffic volumes.

The State of North Carolina Department of Public Instruction gives a recommendation that bus stops be located no closer than 1.5 miles from a school. Each city and/or
municipality in the State of North Carolina establishes their own bussing practices. Within the Winston-Salem/Forsyth County school system, bus stops are located no closer than .5 miles from a school.

**Recommendation**
- Sidewalks shall be constructed on one side of each street within a .5 mile radius of each school, both public and private, excluding the Rural Growth Area. (For further information see Chapter 8, Safe Routes to School).

### 5.6 Ranking Criteria

The Sidewalk and Pedestrian Facility Plan steering committee developed ranking criteria by which all sidewalk project recommendations will be evaluated. These ranking criteria include an evaluation of the following defining characteristics for a sidewalk project:

- **Street type:** Five categories, Major Thoroughfare, Minor Thoroughfare, Collector Street, Local Street and Cul-de-sac/Deadend, are considered for sidewalk projects. The highest ranking is given to a Major Thoroughfare.
- **School:** Points are awarded for each school, up to four schools total, located within a half-mile radius of the sidewalk project.
- **Pedestrian generators:** Five categories, Residential Areas, Park/Playground/Recreation Center, Shopping/Retail and Services, Library, and Business Park/Office, are considerations for a sidewalk project. Each category may only be counted once and must be within a half-mile radius.
- **Connectivity:** The highest ranking is given to those projects that connect to existing sidewalks, greenways, and bike trails.
- **Bus Stops (Winston-Salem projects only):** This includes a project located along a PART/WSTA stop and Park/Ride lots.
Other factors play an integral role in the development of a sidewalk project. Right-of-way constraints may be an issue with the construction of some sidewalk projects. If there is not enough right-of-way to construct the project, then the estimated cost per linear foot would increase dramatically and may cause the project not to be built. In most situations right-of-way is usually not a problem. Other issues considered by the steering committee includes: average daily traffic volume, sight distance problems, and posted speed limits.

The ranking process will be used throughout the Winston-Salem Urban Area and the municipalities of the MPO each time a request is made for a sidewalk project. Projects that are located within the city limits of Winston-Salem will be ranked only against other projects from Winston-Salem. All other projects from the other municipalities and the counties will be ranked against each other. Another factor considered when ranking possible sidewalk projects is feasibility; meaning, can be constructed in that location.
Chapter 6. Engineering: Standards and Guidelines

This chapter of the Winston-Salem Urban Area MPO Pedestrian Sidewalk and Facilities Plan acts as a stand-alone guidance document for the consideration, design, and construction of pedestrian facilities in the entire MPO. This is to be considered as recommended practice only; best practice in the design of pedestrian facilities must obviously be tempered through sound engineering practice that recognizes the site-specific physical constraints of various landscapes as well as cultural and community context.

Guidance on the design of pedestrian facilities has been published by NCDOT (1997); American Association of State Highway and Transportation Officials (AASHTO, 2004); and the Federal Highway Administration of the USDOT (FHWA, 2002). The recommendations herein rely heavily on those sources and others; users are encouraged to refer to them for additional information.

6.1 On-Road Pedestrian Facilities Design Guidelines

Sidewalk Width

The width of sidewalks should accommodate two persons walking past one another, a width generally perceived to be five feet when not directly behind the curb and gutter, at a minimum. In areas of high pedestrian activity or a more diverse use of sidewalk, additional width and different paving and streetscaping options should be considered.
The minimum width of a sidewalk and planting strip shall be as follows:

<table>
<thead>
<tr>
<th>Land Use – Street Type</th>
<th>Sidewalk</th>
<th>Buffer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central Business District</td>
<td>8 feet</td>
<td>Variable</td>
</tr>
<tr>
<td>Commercial/Industrial</td>
<td>5 feet</td>
<td>3.5-6.5 feet</td>
</tr>
<tr>
<td>Residential-Thoroughfares &amp; Collector</td>
<td>5 feet</td>
<td>3.5-6.5 feet</td>
</tr>
<tr>
<td>Residential-Local</td>
<td>5 feet</td>
<td>3.5-6.5 feet</td>
</tr>
</tbody>
</table>

Other situations may require additional sidewalk width including: overhang from parked vehicles from off-street or angled parking areas, additional buffer from traffic when a planting strip can not be installed, and transit stops that provide seating or shelter for patrons.

Recommendations
- Eliminate both high and low contact points with tree branches, mast-arm signs, overhanging edges or amenities or furniture.
- Provide clear space between walls on one side of walkway and amenities, parking overhang, or plantings on the curb side of the walkway.
- Eliminate obstructions located in the sidewalk, i.e. utility poles, newspaper boxes, mail boxes, fire hydrants. Where this is not possible, provide adequate clearance around obstruction.

6.2 Signals

Traffic signals and how they are phased or timed in coordination with each other greatly affect pedestrian safety. The State Division 9 Office is responsible for signals along State roadways such as on University Parkway, and other, and the Winston-Salem Traffic Engineering staff is responsible for signals along City roadways unless under agreement with NCDOT.
City and State traffic engineers determine need for pedestrian signals based on the Manual on Uniform Traffic Control Devices (MUTCD) Guidelines. The MUTCD is produced by the Federal Highway Administration and contains standards for traffic control devices that regulate, warn, and guide road users in all 50 States to optimize traffic performance, promote uniformity nationwide, and help improve safety. The MUTCD lays out criteria or “warrants,” including pedestrian traffic volume and proximity to schools, for installation of pedestrian signals.

### 6.2 Crosswalks

Each city/municipality is responsible for installing and maintaining crosswalks on local roads according to established standards and specifications. They must work cooperatively with NCDOT when it comes to installing crosswalks on State Roads. Crosswalks are important pedestrian facilities and traffic control devices but are often taken for granted or overlooked, despite their impact on how pedestrians and motorists view a pedestrian crossing area. There are several factors that contribute to crosswalk effectiveness: visibility, location, design, appropriateness to the situation and enforcement.

Cross streets and intersections can be barriers to pedestrians when there is no or inadequate designation indicating where to cross. If a crosswalk is worn away, difficult to see or does not exist, then pedestrians are not encouraged to cross and motorists are not given a visual cue or warning to watch for pedestrians. A marked crosswalk includes the use of pavement markings and either signs or signals that are noticeable to motorists and pedestrians. Crosswalks should be:

**Recommendations**
- Coordinate with signals or signs for maximum effectiveness.
- Be consistent so that they are recognizable throughout the MPO.
- Made visible.
Twin lines for pedestrian crossings are not very visible and can be confused with other pavement markings.

**Recommendations**
- Zebra or other patterned, or stamped asphalt, shall be used generally and especially where there are no signal controls or at busy intersections.

### 6.3 Mid-Block Crossings

Mid-block crossings pose special problems for many state and local departments of transportation, since pedestrians will often choose to cross at the location that is the most convenient for them, not necessarily where it is the safest. The Charlotte Department of Transportation has developed important research and guidance for assessing alternative treatments at mid-block crossings. This guidance is based, in part, upon the work of FHWA and Charles Zegeer in examining a number of unmarked and marked mid-block crossings. Zegeer noted that a simple marked crosswalk by itself is often insufficient to provide a good cue to motorists that a pedestrian crossing is in front of them, particularly on roadways exceeding 12,000-15,000 vehicles per day (vpd). This is especially true in poor lighting conditions, short sight distance situations, multi-lane crossings, and high-volume streets. The Winston-Salem Urban Area MPO assumes that pedestrians will be using every street and making crossings, so the question becomes how best to safely accommodate pedestrians in a crossing situation.

When evaluating a mid-block crossing, Charlotte DOT considers: traffic volume, proximity to the nearest signalized crossing, vehicle speeds, and vehicular/pedestrian volumes. Other factors like roadway width and the presence of a high number of pedestrians will also influence the decision to locate a mid-block crossing and the type
of treatment needed to help ensure safe pedestrian crossings. The treatments that Charlotte identified are in the table below, along with costs and operating parameters.

### Mid-Block Crossing Treatment Design Criteria (Charlotte DOT, 2005)

<table>
<thead>
<tr>
<th>Pedestrian Mid-Block Crossing Treatment</th>
<th>AADT</th>
<th>Operating Speed</th>
<th>Approximate Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signs</td>
<td>5,000-35,000</td>
<td>Less than 45 mph</td>
<td>$250-350</td>
</tr>
<tr>
<td>High-Visibility Markings</td>
<td>5,000-12,000</td>
<td>Less than 35 mph</td>
<td>$500-1,500</td>
</tr>
<tr>
<td>Colored/Textured Markings</td>
<td>5,000-12,000</td>
<td>Less than 35 mph</td>
<td>$5,000+</td>
</tr>
<tr>
<td>Curb Extensions</td>
<td>5,000-12,000</td>
<td>Less than 35 mph</td>
<td>$5,000-25,000</td>
</tr>
<tr>
<td>Raised Crosswalks</td>
<td>5,000-15,000</td>
<td>Less than 30 mph</td>
<td>$2,000-15,000</td>
</tr>
<tr>
<td>Refuge Island</td>
<td>12,000-30,000</td>
<td>Less than 40 mph</td>
<td>$10,000-40,000</td>
</tr>
<tr>
<td>Median</td>
<td>15,000-35,000</td>
<td>35-40 mph</td>
<td>Varies greatly</td>
</tr>
<tr>
<td>In-Pavement Illumination</td>
<td>5,000-15,000</td>
<td>Less than 35 mph</td>
<td>$40,000</td>
</tr>
<tr>
<td>Pedestrian-Only Signal</td>
<td>15,000-35,000</td>
<td>35-45 mph</td>
<td>$40,000-75,000</td>
</tr>
<tr>
<td>HAWK Signal</td>
<td>15,000-35,000</td>
<td>35-45 mph</td>
<td>$35,000-60,000</td>
</tr>
</tbody>
</table>

Every mid-block crossing treatment will require a specific investigation by the relevant transportation department prior to initiating design and construction. Mid-block treatments can be useful in improving safety in areas with fairly high pedestrian crossings and low numbers of vehicles and vehicle speeds.

### 6.4 Special Features

Mobility Impaired Designs
The Winston-Salem Urban Area MPO strives to maintain a pedestrian system that is fully accessible to all of its citizens regardless of individual mobility limitations, and in accordance with the Americans with Disabilities Act of 1990 (ADA). This is accomplished through design sufficiency as well as recognizing appropriate details that make designs user-friendly. The following is not a comprehensive guide, but offers guidance on a number of criteria design details that should be considered when developing portions of the pedestrian system.

**Typical Curb Ramp Design**

Curb ramps are a significant and required feature of accessible pedestrian transportation systems, and must be designed carefully to fulfill their function and the requirements of the Americans with Disabilities Act.

**Recommendation**

- Curb ramps should not have a slope greater than 1:12, meaning that for every foot of travel, the slope should not rise more than one inch.
- Provide a tactile warning to the visually impaired, raised truncated domes with a color contrast to the background material should be used.
- Curb ramps will be placed entirely within the area of the marked crosswalk, so that a pedestrian can enter the ramp space at an angle perpendicular to the direction of travel. The standard is to have separate curb ramps on each corner; if a shared curb ramp is constructed, then the width and radius should accommodate the user so that entry onto the ramp is parallel to the direction of travel.

The *ADA Accessibility Guidelines for Buildings and Facilities* has an easy to use format for locating specific design criteria related to curb ramps, rise/run restrictions on ramps, and figures illustrating basic concepts.
In the City of Winston-Salem, the Mayor’s Council for Persons with Disabilities sponsors a Barrier Awareness Day. Barrier Awareness Day begins with a Challenge event where participants pair up with a person with a disability, and a "guardian angel." The participant assumes the same disability as their guide and the guardian angel is there to assist as all three return to the community. Participants may decide to go back to their place of work or visit the mall or a grocery store to experience first hand the physical and attitudinal barriers people with disabilities face on a daily basis. Participants include community citizens and governmental employees who oversee construction of City facilities, such as sidewalks, streets, and housing.

**Grade-Separated Crossing**

It is often desirable to provide a separated-grade crossing of a major street, sometimes in conjunction with a stream crossing at the same location. A grade-separated crossing provides continuity of a bicycle/pedestrian facility over or under a barrier. This can be provided by either a bridge or an underpass. Pedestrians are sensitive to uninviting interiors of such crossings, and will not use them if they perceive them to be threatening due to especially long traverses in poorly lit conditions.

If the roadway is not elevated, then the openings of an underpass should be flared out to provide clear lines of sight. Minimum widths are 10-12 feet for traverses less than 60 feet in length. Wider widths are suggested for urban areas of longer traverses. Vertical clearances should be a minimum of 8 feet, but 10 feet is more desirable. AASHTO provides guidance for lighting in underpasses in their *Roadway Lighting Design Guide*. Providing below-grade crossings must also be dependent on the proximity to floodways.

When constructing pedestrian overpasses it is important to remember that pedestrians will not use an overpass that is inconvenient. Instead, they may choose a time saving, and sometimes more hazardous crossing. Fencing or other controls may be required to reinforce the safe crossing point.
Currently in Winston-Salem, there are seven pedestrian underpasses and five overpasses.

Underpasses:
1. Silas Creek Parkway and Yorkshire Road
2. Silas Creek Parkway between Bethabara Road and Fairlawn Drive (part of greenway)
3. R.J. Reynolds High School on Northwest Boulevard
4. Deacon Boulevard between Coliseum and Groves Stadium
5. Convention Center under 5th Street
6. Cherry Street/Marshall Street Deck under Cherry Street
7. Highland Avenue near 12th Street

Overpasses:
1. Old Salem over Old Salem Road
2. between 13th Street and Northwest Boulevard over University Parkway
3. between Vargrave Street and Willow Street over US 52
4. over Cherry Street at the Convention Center
5. over 3rd Street between Liberty Street and Town Run Lane

Recommendations
- Pedestrians should not be put into a situation where they are at risk from rapidly rising flood waters
- Crossings shall be well lit for pedestrian safety

Rail-to-Trail Program

Rail-trails are multi-purpose public paths created from former railroad corridors. Flat or following a gentle grade, they traverse urban, suburban and rural America. Ideal for many uses, such as bicycling, walking, inline skating, cross-country skiing, equestrian
and wheelchair use, rail-trails are extremely popular as recreation and transportation corridors. Since the 1960s, 13,150 miles of rail-trails have been created across the country. Rail-trails also serve as wildlife conservation corridors, linking isolated parks and creating greenways through developed areas, and as a means of preserving historic landmarks.

When a railroad proposes a corridor for abandonment, it must notify the Rivers and Trails program of the National Park Service. Rivers and Trails shares the information with Rails-to-Trails Conservancy (RTC), which notifies community activists and officials of the impending abandonment. RTC's early warning packet also provides information on how to preserve a corridor for trail use through railbanking. Federal regulations require interested parties to request railbanking within 30 to 45 days. Without the early warning system, many community leaders would learn of rail abandonment too late to preserve corridors for public use.

The only existing Rail-to-Trail system in the Winston-Salem Urban Area MPO is the Strollway in Winston-Salem. This is a one-mile trail that connects downtown Winston-Salem to Historic Old Salem and the Southeast Gateway area. The trail is constructed of asphalt and crushed stone. It is well-lit and provides access to adjacent neighborhoods.

**Recommendations**
- Norfolk-Southern Railroad line along Stratford Road and Northwest Boulevard in Winston-Salem
- Norfolk-Southern Railroad line from 25th Street to downtown research park in Winston-Salem

**Traffic Calming for Pedestrian Safety**

The Winston-Salem Urban Area MPO has a proactive policy to provide safe, on-street environments for vehicular, pedestrian and bicycle travel. The City of Winston-Salem
conducted and implements several traffic calming studies each year that analyze and recommend appropriate treatments to slow vehicles and discourage high "cut-through" traffic volumes of cars and trucks. Although a complete treatment of traffic calming principles and guidance is beyond the scope of this document, there are a number of principals that should be emphasized during the evaluation, design, and implementation of traffic calming devices.

- The installation of some traffic calming devices, if inappropriately designed, can impede the safe movement of cyclists, mobility-impaired pedestrians, emergency response vehicles, and some vehicle types such as combination truck-trailers or motorcycles.

Sited and designed properly, traffic calming can successfully enhance pedestrian environments. If poorly designed and/or located, traffic calming measures can have the opposite of the intended effects on the walking environment and potentially the safety of pedestrians.

| TRAFFIC CALMING TREATMENTS AND POTENTIAL FOR POOR DESIGN TO INFLUENCE DIFFERENT USER GROUPS |
|---------------------------------|---------------------------------|----------------|----------------|----------------|
| Device/Treatment                | Description                      | B | P | MI | VI |
| Curb Extensions "pinch points"  | Curb extensions, planters, or centerline traffic islands that narrow traffic lanes to control traffic and reduce pedestrian crossing distances. Also called “chokers.” | ● | □ | ○ | ○ |
| Speed tables, raised crosswalks | Ramped surface above roadway, 2-3 inches high, 10-20 feet long. | ○ | ○ | □ |   |
| Mini-circles                    | Small traffic circles at intersections. | □ | □ | □ | □ |
| Median islands                  | Raised island in the road center (median) narrows lanes and provides pedestrian with a safe place to stop. | □ | □ | □ |   |
| Channelization island           | A raised island that forces traffic in a particular direction, such as right-turn-only. | □ | ○ | □ |   |
| Tighter corner radii            | The radius of street corners affects traffic turning speeds. A tighter radius forces drivers to reduce speed. It is particularly helpful for intersections with numerous pedestrians. | □ |   |   |   |
| Speed humps | Curved, 2-3 inches high, 10-20 feet long hump. | ○ | □ |
| Rumble Strips | Low bumps across road that make noise when driven over. | □ | □ |
| Chicanes | Curb bulges or planters (usually 3) on alternating sides, forcing motorists to slow down. | ● | |
| Roundabouts | Medium to large circles at intersections. | □ | □ | ○ | □ |
| Pavement treatments | Special pavement textures (textured concrete or asphalt) and markings to designate special areas. | ○ | ○ | ○ |
| Bike lanes | Marking bike lanes narrows traffic lanes. | □ | |
| "Road diets" | Reducing the number and width of traffic lanes, particularly on arterials. | ○ | |
| Horizontal shifts | Lane centerline that curves or shifts. | ○ | □ |
| 2-lanes narrow to 1-lane | Curb bulge or center island narrows two-lane road down to one lane, forcing traffic for each direction to take turns. | □ | |
| Semi-diverters, partial closures | Restricts entry/exit to/from neighborhood. Limit traffic flow at intersections. | □ | |
| Street closures | Closing off streets to through vehicle traffic at intersections or mid-block. | □ | |
| Stop signs | Additional stop signs, such as 4-way stop intersections. | □ | □ | □ | □ |
| Neo-traditional street design | Streets with narrower lanes, shorter blocks, T-intersections, and other design features to control traffic speed and volumes. | □ | □ |
| Perceptual design features | Patterns painted or stamped into road surfaces and other perceptual design features that encourage drivers to reduce their speeds. | ○ | |
| Street trees | Planting trees along a street to create a sense of enclosure and improve the pedestrian environment. | □ | |
| Special reductions | Traffic speed reduction programs. Increased enforcement of speeding violations. | ○ | |

B=Cyclist; P=Pedestrian; MI=Mobility Impaired Person; VI=Visually Impaired person
No impact to pedestrians; □ Light Potential Impact; ○ Moderate Potential Impact; ● Serious Potential Impact

Parking Facilities

Everyone becomes a pedestrian once they park their car, but there are many examples of poor parking lot design. The most common design issue is that the
primary carriageway for vehicles in the parking lot happens to coincide with where the greatest numbers of pedestrians are crossing, directly in front of the main entrance. Other issues include poor sight lines to spot pedestrians, bad transition areas from the public domain to the private parking area, and inconvenient pedestrian access between parking areas, shops, and adjacent communities. Through the driveway permitting process, the site plan review process and revision to the UDO, attain the following:

**Recommendations**
- Provide continuous transitions from the street into a safe landing area in the parking lot; do not dump pedestrians into the throat of a driveway.
- Maintain good sight lines at major turning points inside the parking area.
- Whenever possible, provide perpendicular pedestrian access into the front of a high volume land use such as major retail use.
- Move the main parking aisle away from the principal entrance.

**Temporary Pedestrian Access**

The construction or expansion of roadways, utilities, or private development sometimes requires that sidewalks be temporarily closed to allow for the movement of construction vehicles on and around the site. When pedestrian facilities are closed temporarily, the entity responsible for the construction is also responsible for providing adequate access through or around the site as well as signage that provides advance warning to pedestrians and motorists of the closure. Both the MUTCD (Manual of Uniform Traffic Control Devices), NCDOT Draft Planning and Designing Local Pedestrian Facilities, and the ADA (Americans with Disabilities Act) stipulate that safe passage should be maintained throughout a temporary closure unless it occurs during an extreme situation such as a natural or man-made emergency. During private construction within the City limits, it is the responsibility of the City of Winston-Salem to ensure compliance with these rules by regular monitoring.
Chapter 7. Education, Encouragement and Enforcement

Achieving the goal of creating a coordinated and safe walking environment can not be obtained without informing and enforcing pedestrian activities. The “Three E’s” of pedestrian activity – Education, Encouragement, and Enforcement – are important supports to capital improvements. Educating people about safe walking habits, enforcing laws for both pedestrian and driver, and encouraging walking as a mode of transportation are important in the Winston-Salem Urban Area MPO. The implementation and phasing of all programs and policy changes in this chapter are based on a tentative five-year schedule, gauged on existing and anticipated revenue.

7.1 Education

Education needs to be targeted at particular age groups and audiences: school-age children, teens, college students, adults, senior adults; government staff for pedestrian transportation issues; and motorists for awareness of pedestrian issues.

Many do not understand what “walk” and blinking or steady “don’t walk” signals mean. Many motorists do not know that the law requires that they yield to pedestrians in marked crosswalks whether traveling in a straight line or turning at a corner. Many parents do not know how to effectively teach their children street and sidewalk safety. Substantial numbers of people who know the laws fail to follow them consistently.

Different education programs have been tried throughout the United States with varying degrees of success. School-based programs have the most impact on pedestrian education. This can include things from walk zones and walkability audits to instructional modules for the classrooms. Another successful program is geared
toward seniors. This program includes information regarding crossing precautions and pedestrian safety.

**Recommendations**

- Disseminate information about the rules of the road for drivers and safety tips for pedestrians through: school, school crossing guards, parent education programs, police, elder services, driver education classes, taxi companies, transportation centers, and public service announcements

- Encourage people to report unsafe conditions for walkers through a website and telephone number. The response to callers should include information about whether or not the problem can be fixed immediately.

- Work with the Department of Motor Vehicles to ensure that motor vehicle laws regarding bicyclists and pedestrians are emphasized in driver education materials and driver tests.

**7.2 Encouragement**

Encouragement programs can take many different forms and can be directed to varied audiences such as walkers, motorists, employers and developers. It is in the interests of the people who live and work in Winston-Salem Urban Area MPO that more people walk. There are many things the MPO can do to promote walking.

Throughout the MPO there are already many programs in place that encourage walking, both as a mode of transportation and as a source of exercise. One example: Forsyth County offers a six-week walking program, *Step up Forsyth!*, during the fall each year that encourages walking for exercise and offers incentives for the most miles walked. Other facilities that offer walk-for-health programs include the YMCA, the City of Winston-Salem and Wake Forest University Baptist Medical Center, just to name a few.
Recommendations

- Publish and distribute a Winston-Salem walking guide, covering a variety of pedestrian issues. Include suggested walking routes, walking safety tips, and pedestrian rights and responsibilities.
- Find and publicize prominent Winston-Salem Urban Area MPO walkers.
- Promote neighborhood walks, neighborhood cleanups, historical walks, nature walks, arts walks, and greenway walks.
- Create a special marked pedestrian route for tourists.
- Make walking promotion a more prominent part of the City’s exercise program for City staff.
- Promote the idea that walking is pleasant in almost all weather conditions if you are dressed for it.
- Organize a walk to work week.
- Continue to work with local schools and the Department of Public Works to promote walking to school.

Education and encouragement are essential to the success of a pedestrian system. Building trails, sidewalks and other facilities is important, but the bottom line is getting the public to safely use the facilities by demonstrating that pedestrian transportation provides real benefits and by teaching safe user skills. Strong efforts aimed at encouraging changes in travel behavior, and educating system users about basic safety and traffic laws, need to be made regularly to have an effect and create mutual respect among all roadway users. Successfully raising public and government awareness about the importance of pedestrian transportation, as well as how to best implement regional and local networks and safely use them, will rely upon ongoing collaboration between citizen interest groups and government agencies.
7.3 Enforcement

The engineering staff and police department are charged with many responsibilities for keeping citizens in the MPO safe, as well as participating in various community-based programs like the local CRIMESTOPPERS and Neighborhood Watch groups.

When motorists break traffic laws, they endanger pedestrians and add to an atmosphere that inhibits people from walking and allowing their children the freedom to explore their neighborhoods. Among the most dangerous motorist infractions are failing to yield for pedestrians in crosswalks, speeding, going through red traffic signals, speeding up rather than slowing down at intersections, failing to stop at stop signs, and parking too close to corners.

Errant bicyclists, especially unlighted bicyclists and those who ride in the wrong direction or go through red traffic signals or stop signs, also present a danger to pedestrians as well as to themselves.

Another difficult issue for pedestrians is bicycles on sidewalks. The sidewalk is an appropriate place for children to ride; adults are generally safer on the street. Bicycle riding is banned on sidewalks in the Central Business District. If they ride on sidewalk elsewhere, cyclists must proceed at no faster than a normal walking speed, always yield to pedestrians, and give an audible warning when passing.

Long waits at some intersections may encourage pedestrians to jaywalk. The very short times for walk signals in the MPO (at most intersections, 7 seconds or less out of an 85 to 90 second signal cycle), may foster a tendency to disregard the signals there.

There are many opportunities for enforcement throughout the MPO. Enforcement can be passive with more of an educational emphasis, such as passing out informational
flyers to pedestrians who are caught jaywalking or disobeying traffic laws. Or enforcement can be active such as with sting enforcement, a rotating program of targeting intersections or crossings for intensive enforcement for one or more days.

**Recommendations**
- Increase enforcement of traffic laws to discourage speeding-especially in school zones, running red lights and stop signs, and parking too close to an intersection.
- Investigate devices that could assist in law enforcement, e.g., the use of cameras at intersections to film cars disobeying traffic signals.
- Continue the MPO’s bicycle facilities program to make the streets safer for bicyclists by incorporating bicycle lanes and other improvements into street reconstruction projects.
- Work to change traffic laws that now require motorists and cyclists to yield to pedestrians to instead require that motorists and vehicles stop for pedestrians.
- Conduct a campaign to inform pedestrians that obeying the law is important for their own safety.

Greater enforcement of existing traffic laws is necessary to improve the mutual respect between motorists, bicyclists and pedestrians. Such stepped up enforcement is needed to change the behavior of bicyclists, pedestrians and motorists who sometimes flagrantly and dangerously ignore traffic regulations, creating unsafe conditions for all parties. Implementation of all these efforts will require highly collaborative participation among many diverse interests including transportation agencies, public health districts, law enforcement agencies, non-profit advocacy groups, schools, tourist and visitor bureaus, regional employers, public healthcare providers and others.
Chapter 8. Safe Routes to School

The Safe Routes to School program is a national and international movement to enable and encourage elementary and middle school children to walk and bicycle to school. Through the use of the "5 Es", engineering, education, enforcement, encouragement and evaluation, programs and projects can be developed to create a safe, appealing environment for walking and biking to school that will encourage a healthy and active lifestyle from an early age. Safe Routes to School will also enrich the quality of our children's lives and benefit communities by implementing projects and activities that will reduce traffic congestion, improve air quality, and enhance neighborhood safety. Safe Routes to School is seen as one vital step toward reducing the alarming nationwide trend of child obesity and inactivity.

The goal of the Safe Routes to School Program is to reverse the decline in the numbers of children walking and biking to school, and the rise in obesity and physical inactivity. In 1969, approximately 50% of children walked or biked to school, and 87% of the children living within one mile of their school arrived under their own power. Today, fewer than 15% of schoolchildren walk or bike to school. As a result, kids today are less active, less independent, and less healthy. In addition, as much as 20 to 30% of morning traffic is generated by parents driving their children to school. The health implications are well documented. For example, over the last 25 years, air pollution has been linked to a 74% increase in asthma rates among children ages 5-14, and a 160% increase in children up to age 4.

The Safe Routes to School Program provides an avenue to increase the activity levels of children as well as to create stronger communities that have good bicycle and pedestrian environments. A Safe Routes to School Workshop is a great way to kick-off a Safe Routes to School Program to improve the health of children and the community by making walking and bicycling to school safer, easier, and more enjoyable. A workshop helps communities develop programs based on their unique situations while
providing basic strategies and useful resources to consider as they develop an action plan to overcome barriers identified.

The workshop is one day long and held during the week. The outcome of the workshop is a SRTS Action Plan that addresses engineering, educational, encouragement and enforcement activities geared toward the needs of the school.

An outline of the North Carolina grant program and funding information is shown below. Keep in mind that in order to qualify for funding, a workshop instructed by facilitators trained by the National Center of Safe Routes to School is required. Federal-aid funds are provided to State DOTs over five Federal fiscal years (FY 05-09).

North Carolina funds:
$1.00 million (FY05), $2.33 million (FY06), $3.13 million (FY07), $3.88 million (FY08), $4.85 million (FY09).

State usage:
70 to 90 percent of the grant must be used for infrastructure projects, and 10 to 30 percent for non-infrastructure projects.

No local funding match required: 100% federally funded

- Grant applications must address the infrastructure (engineering) and non-infrastructure (education, enforcement and encouragement) aspects based on the SRTS Action Plan developed in the local workshops.
- Eligible recipients include state, local and regional agencies, and non-profit organizations.
- Jurisdictional levels for the grant are school level, school system or region-wide, and state-wide
- Primary beneficiaries must be K-8th grade students
Infrastructure projects must be within two miles of a school and on public property or private land with legal public-access easements
Funding is through a reimbursable grant process - not a cash up front process
Competitive grant program administered by North Carolina Department of Transportation
Award recipients must comply with federal and state funding requirements

8.1 Activities for Schools

Walking School Bus

The walking school bus addresses the needs of students and the concerns of parents. One or more adults, depending on the size of the group, accompany a group of students who pick up other students along a planned route, similar to the traditional school bus. They walk as a group on their commute to and from school.

Adults can take turns walking with students by having assigned days of duty. Children can be picked up at their homes or at "staging areas" where they "catch the bus". The staging areas should also have adult supervision. The bus participants can have fun with the idea by wearing a specific color, use a wagon for the backpacks, or hold a rope linking them all together. Adults can utilize the opportunity to teach pedestrian safety skills to students while walking to school as well.

Bike Trains

Bike trains are similar to the walking school bus except that students ride their bikes to school in groups. These are usually utilized when older students are involved.

A bike safety workshop (sometimes called a bike rodeo) should be offered to teach students important safety habits, including the importance of wearing a bike helmet.
Bike racks should be available to students to secure their bikes while at school. Bike trains need more adults to supervise bicyclists and adults should be good role models.

**Walking Wednesdays**

Another way to promote walking to school is to begin a "Walking Wednesday" program. Designate a weekly or monthly Wednesday as "Walking Wednesday". Encourage students to walk to school with their friends, family, caregivers, or as part of a walking school bus. To further encourage children to walk, use this program to reward individuals or classes that have the greatest percentage of students participating.

**Alternative Drop Off**

In situations where students are outside the walkable limits (½ mile from the school), and are bused or are driven, finding an alternative drop-off location for walking to school is an option. This way these students can also participate in Walk to School Day. Buses and private vehicles can stop a few blocks away from the school in a parking lot that has facilities such as sidewalks connecting to the school. Students are greeted by adult volunteers who walk with the children the remaining way to school. Recruit volunteers before Walk to School Day and provide them with directions to the alternative drop-off.

In looking for an alternative drop-off lot, make sure that there is enough space for buses and other vehicles to stop, safely drop-off students and park so parents and community members can leave their vehicles and walk with students. Examples of alternative drop-off locations are shopping centers, community centers, parks, and places of worship.

Be sure to invite your school district transportation director and bus drivers to walk with students!
8.2 North Carolina School Crossing Guard Training Program

As traffic continues to increase on North Carolina’s streets and highways, concern has grown over the safety of our children as they walk to and from school. At the same time, health agencies, alarmed at the increase in obesity and inactivity among children, are encouraging parents and communities to get their children walking and biking to school. In response, the Division of Bicycle and Pedestrian Transportation funded a study on pedestrian issues, including school zone safety, and decided to establish a consistent training program for law enforcement officers responsible for school crossing guards. According to the office of the North Carolina Attorney General, school crossing guards may be considered traffic control officers when proper training is provided as specified in North Carolina General Statutes 20-114.1

In 1998, the Division of Bicycle and Pedestrian Transportation (DBPT) developed a program to train local law enforcement officers who are responsible for training school crossing guards in their respective jurisdictions. Funded by the Governor’s Highway Safety Program, this initiative arose from the need to reduce crashes in school zones.

Once the course was developed, DBPT sponsored two pilot workshops in Winston-Salem and Fayetteville. Participants in those workshops provided feedback and suggestions that were then incorporated into the course, which was last updated in 1999.

With the revised course in place, DBPT sponsored training workshops for school officials and law enforcement offices responsible for training crossing guards in various locations across the state.
The objectives of this course are twofold:

1. To protect North Carolina school children by standardizing instruction and procedures for crossing guards so that motorists across the state will know what to expect as they travel through school zones across the state.

2. To teach children proper pedestrian skills so they will cross safely at other times and locations.

The one-day course includes a morning session devoted to understanding laws about pedestrians and school crossing guards and examining the Instructor’s Manual, which contains everything a person will need to conduct a training course for guards themselves. The afternoon session involves actual practice crossing students at a simulated intersection.
Chapter 9. Pedestrian Facilities Funding Sources for the MPO

9.1 Federal Funding

In 1991, Congress enacted the Intermodal Surface Transportation Efficiency Act (ISTEA), a six year bill authorizing a wide range of federal aid transportation programs. In June of 1998, the Transportation Equity Act for the Twenty-first Century (TEA-21) was enacted and authorized through 2003 and expands on those programs. In 2005, Congress has passed the Safe, Accountable, Flexible, and Efficient Transportation Equity Act a Legacy for Users (SAFETEA-LU), which included specific funding for Safe Routes to Schools programs.

- **Surface Transportation Program (STP)** funds may be used for construction or non-construction projects that benefit bicycles and pedestrians. “Nonconstruction” projects are items such as maps, brochures, and public service announcements. These funds may be programmed to bring sidewalks and intersections into compliance with ADA regulations.

- **Enhancements** – Ten (10%) percent of STP funds are earmarked for Transportation Enhancement Activities (TEAs). The list of activities that are eligible under the TEA program pertaining to pedestrians, include the following:
  - Pedestrian facilities
  - Pedestrian safety and education activities
  - Landscaping and scenic beautification
  - Preservation of abandoned railway corridors
  - Control and removal of outdoor advertising
• **Congestion Mitigation and Air Quality (CMAQ) Improvement Program** funds are similar to STP funds in that they may be used for construction or non-construction projects that benefit bicyclists and pedestrians.

• **Safe Routes to School** Federal-aid funds are provided to State DOTs over five Federal fiscal years (FY 05-09). North Carolina funds: $1.00M (FY05), $2.33M (FY06), $3.13M (FY07), $3.88M (FY08), and $4.85M (FY09). The State has provisions that allow 70 to 90 percent for infrastructure projects and 10 to 30 percent for non-infrastructure projects. No local funding match required: 100% federally funded.

• **Federal Aid Construction Funds** are included in the National Highway System (NHS), Surface Transportation Program (STP), and Congestion Mitigation and Air Quality (CMAQ). The funds provide for the construction of pedestrian and bicycle transportation facilities. The primary source of funding for bicycle and pedestrian projects is STP Enhancement Funding.

### 9.2 State Funding

In North Carolina, the Department of Transportation, Division of Bicycle and Pedestrian Transportation (DBPT) has been the single largest source of funding for bicycle, pedestrian and greenway projects for more than a decade. DBPT offers several programs in support of bicycle facility development. The following information is from NCDOT’s interactive web site [www.ncdot.org](http://www.ncdot.org).

- In 2004, the **Bicycle and Pedestrian Planning Grant Initiative** was initiated by NCDOT, providing communities with planning grants in support of the completion of community-wide bicycle and pedestrian plans. NCDOT will continue this program through 2005 and beyond.
State Construction Funds (not including the Highway Trust Fund for Urban Loops and Interchanges) may be used for the construction of sidewalks and bicycle accommodations that are a part of roadway improvement projects.

Governors Highway Safety Program (GHSP) funding is provided through an annual program, upon approval of specific project requests, to undertake a variety of pedestrian and bicycle safety initiatives amounts of GHSP funds vary from year to year, according to the specific amounts requested. Local requests for small pedestrian projects, such as sidewalk links, should be directed to the relevant NCDOT Highway Division office.

Statewide Discretionary Fund consists of $10 million and is administered by the Secretary of the Department of Transportation. This fund can be used on any project at any location within the State. Primary, urban, secondary, industrial access, and spot safety projects are eligible for this funding.

Transportation Improvement Program (TIP)

Transportation projects in North Carolina progress through a standard process of planning, design and construction. Improvements for walking may be included in the TIP as part of the construction of a highway project or, where no highway project is programmed, as an independent project. Pedestrian projects follow essentially the same TIP process as do highway projects. The Division of Bicycle and Pedestrian Transportation (DBPT) works with localities to create a four-year schedule of projects using the locality’s priority listing of needs along with the adopted project selection criteria. The DBPT compiles candidate pedestrian projects to be considered for inclusion in the TIP from the following sources:

- The prioritized Metropolitan Transportation Improvement Program (MTIP) lists produced by the 17 Metropolitan Planning Organizations (MPOs), which have
been derived from separate lists produced by communities comprising the MPO.

- Project requests that are made at the biennial TIP meetings or through written requests within 30 days of the meetings from the state’s small urban areas, counties, public and private entities, and citizens.
- Internal DBPT assessment of statewide bicycle and pedestrian project needs.

All project requests are documented and distinguished as independent or incidental (part of a highway project). Independent project requests are evaluated by DBPT using project selection criteria. Inclusion of a pedestrian project in the TIP does not guarantee that it will be implemented; rather, it means that it will receive further study and will be implemented if feasible. Incidental projects are considered in conjunction with the planning study for the given highway or bridge project and implemented, if feasible.

For independent construction projects, DBPT conducts a detailed feasibility study, including cost estimates. If the project is determined to be feasible, DBPT prepares a more detailed planning study, which is reviewed and approved by the Bicycle and Pedestrian Task Force before being submitted to the Board of Transportation for funding authorization. Once the funding is authorized, project design and development begins.

**State Street-Aid Allocation Law (Powell Bill)**

There is annually appropriated out of the State Highway Fund a sum equal to the net amount after refunds that was produced during the fiscal year by a one and three-fourths cents (1-3/4) tax on each gallon of motor fuel taxed under Article 36C of Chapter 105 of the General Statutes and on the equivalent amount of alternative fuel taxed under Article 36D of that Chapter. The amount appropriated is allocated in cash on or before October 1 of each year to the cities and towns of the State in accordance with Article 36C of Chapter 105 of the General Statutes. In addition, as provided in G.S.
136-176(b)(3), revenue is allocated and appropriated from the Highway Trust Fund to the cities and towns of this State to be used for the same purposes and distributed in the same manner as the revenue appropriated to them under this section from the Highway Fund. Like the appropriation from the Highway Fund, the appropriation from the Highway Trust Fund is based on revenue collected during the fiscal year preceding the date the distribution is made.

The funds allocated to cities and towns under the provisions of G.S. 136-41.2 can be expended by cities and towns only for the purpose of maintaining, repairing, constructing, reconstructing or widening of any street or public thoroughfare including bridges, drainage, curb and gutter, and other necessary appurtenances within the corporate limits of the municipality or for meeting the municipality's proportionate share of assessments levied for such purposes, or for the planning, construction and maintenance of bikeways located within the rights-of-ways of public streets and highways, or for the planning, construction, and maintenance of sidewalks along public streets and highways.

**North Carolina Park and Recreation Trust Fund (PARTF)**

The Parks and Recreation Trust Fund (PARTF) provides dollar-for-dollar matching grants to local governments for parks and recreational projects to serve the general public. Grants for a maximum of $500,000 are awarded yearly to county governments or incorporated municipalities.

Public authorities, as defined by G.S. 159-7, are eligible applicants if they are authorized to acquire land or develop recreational facilities for the public. A local government can request a maximum of $500,000 with each application.
9.3 Local Funding

Winston-Salem Capital Improvement Program (CIP)

Capital Improvement Program (CIP) funds are applied for through the City’s Capital Plan Budget on an annual basis. Projects are prioritized with all other City department projects and programmed if funding is available.

GO Bond

General Obligation bonds (GO bonds) are the most commonly used method for financing the purchase of large capital equipment and for construction of capital projects. Issuance of GO bonds requires approval by citizens through a bond referendum and requires approval by the N. C. Local Government Commission (LGC). When GO bonds are issued, a local government pledges to repay the debt from any and all revenues available to the unit.

2/3 Bond

The 2005-2006 Capital Plan provide for $1,055,000 in two-thirds bonds to finance sidewalk construction projects. Bonds can be issued for the financing of land acquisition or trail development. Two-thirds bonds do not require voter approval. State law allows the issuance of bonds every other year worth two-thirds of the amount of bond debt paid off in a previous year.

Vehicle Tax

The General Assembly of North Carolina has approved House Bill 464, “Vehicle Privilege Tax,” which could generate $500,000 per year for non-motorized transportation projects such as sidewalks, pedestrian safety, greenways, and bicycle
routes. In FY 05-06, the North Carolina General Assembly authorized an increase in this tax from $10 to as much as $20 per vehicle. City Council authorized an increase from $10 to $15. The City Council authorized that 1/3 of this additional $5 in tax (approximately $250,000) be used for non-motorized transportation functions, including, but not limited to, sidewalks, pedestrian safety improvements, bicycle routes, and greenways.

Optional Funding at the Local Level:
Sales Tax

In North Carolina, like many other states, the state has authorized a sales tax at the state and county levels. Local governments that choose to exercise the local option sales tax, use the tax revenues to provide funding for a wide variety of projects and activities. Any increase in the sales tax, even if applying to a single county, must gain approval of the state legislature.

Impact Fees

Some communities provide for impact fees that require residential, industrial and commercial development project leaders to provide sites, improvements and/or funding for developing public improvements like open space, parks, sidewalks, and trails. Impact fees may be allocated to a particular project from land development projects in all other areas of a county or city if the fund is a dedicated account established to help develop a county- or city-wide system of projects.

Exactions

Exactions are similar to impact fees in that they both provide facilities to growing communities. The difference is that through exactions it can be established that it is the responsibility of the developer to build the park, open space, sidewalk, greenway
or bicycle facility that crosses through the property, or adjacent to the property being
developed.
Chapter 10. Implementation

The previous sections of the Winston-Salem Urban Area MPO Sidewalk and Pedestrian Plan have discussed the existing conditions and proposed changes that need to take place to achieve the objectives. The section of the Plan discusses how to implement those recommendations, the responsible party and a way of charting the progress of the MPO and its partners in making the change from today’s existing conditions to those “we” strive to achieve.

10.1 Building Support for Walking

At a glance, it would seem obvious that living in a place where walking is easy and safe is a goal shared by everyone. However, it is important to recognize that implementing the recommendations contained in this Plan will be achieved by relatively few agencies, and funded through a limited number of sources. It is critical to expand the circle of implementing partners to include non-traditional agencies and groups. Stronger communication should be encouraged between citizen advisory committees, such as the Bicycle Advisory Committee, Public Health Agencies, and Mayor’s Council for Persons with Disabilities.

Pedestrian Advisory Committee

The MPO should consider the formation of a citizen advisory committee that is charged with advising the Winston-Salem Urban Area MPO concerning pedestrian planning and coordination issues. The committee should have appointees by the City of Winston-Salem, local municipalities and representatives of the TCC/TAC. The importance of the group is that it would have a motivated membership with connections to business interests, college campuses, and other key non-traditional implementers of pedestrian projects and programs. Consideration should be given to a
combination of the Pedestrian Advisory Committee and the Bicycle Advisory Committee.

Bicycle Advisory Committee

The Bicycle Advisory Committee is a group of citizens that meet monthly and is charged with advising the Winston-Salem Department of Transportation (WSDOT) concerning matters of bicycle planning and coordination issues. The BAC is staffed by the WSDOT and the City of Winston-Salem Recreation and Parks Department. The BAC is mainly focused on cycling issues. The BAC can effectively extend the "reach" of the government staff which serves as the primary support for this group. The BAC should be made very familiar with the objectives of this Plan and its recommendations, and serve as an advocacy group to help keep a long-term focus on achieving these recommendations.

Public Health Agencies

Increasing attention is being paid to the importance of walking as a means of confronting obesity, improving cardiovascular health, and maintaining a positive mental outlook. The Centers for Disease Control and Prevention has suggested that everyone can benefit from walking, or increasing the intensity or duration of their walking if they are already doing so. Therefore, it is not surprising to find that health agencies and public health advocacy groups have become more interested in promoting walking in their service area. The following agencies should receive a copy of the Plan:

- Student Health Centers at colleges and university campuses;
- Hospitals, one copy for each waiting area; and
- Public School nursing stations;
- Forsyth County Public Health Department, Forsyth County Health Community Coalition and the Board of Health.
Building Better Relationships between Government Agencies

There is no more critical set of linkages needed to implement pedestrian projects than those that exist between various operating departments and divisions in the City of Winston-Salem, the MPO and North Carolina Department of Transportation. An exhaustive review of how each of these agencies works and relate is not particularly relevant, and the relationships themselves change over time. However, it is critical that regular communication occurs between the City and State transportation staff to carry out their mutual missions of providing transportation services and facilities in the MPO.

Special Mobility Groups

Senior citizens, mobility impaired people, elementary and middle school children, and people that do not have reliable access to their own automobile are particularly reliant upon the pedestrian system to perform everyday tasks such as shopping, going to school, and working. This Plan has focused on selecting projects and programs that particularly affect these groups. Things such as maintenance, new construction, encouraging participation by mobility and visually impaired residents in the formation of solution to pedestrian problems, areas near schools, and special attention to transit access played a strong role in the recommendations of this Plan. Continued networking with senior centers, low income community organizations, transit companies, the public school system and other outlets is strongly encouraged.

General Public Participation

The general public should not be “left out” of the implementation of this Plan. They serve an important role as the eyes of the MPO staff, informing the staff of safety problems, maintenance issues, and identifying potential needs that should be prioritized alongside those described in this Plan. It is this communication that makes regular updates of the Plan so essential to its relevance and maintaining energy to
create positive changes in the walking environment. This Plan has recommended that complaints and accidents be recorded, reviewed, and acted upon in a systematic manner by multiple implementing and enforcement agencies. Increasing the level of feedback to communicate the goals and resources available to fund new trails, sidewalks, safety improvements and other pedestrian projects is more important than increasing the frequency of communication.

10.2 Program and Policy Implementation

The Winston-Salem Urban Area MPO Pedestrian Plan has identified several programs and policies that are recommended to further strengthen, educate, encourage and enforce pedestrian issues in the MPO. Listed below are those programs and policy areas, along with the personnel that will be needed to take action to implement and/or improve the programs and policies.

Pedestrian Steering Committee

This committee, comprised of Winston-Salem city staff, town managers, the Forsyth County Health Department and the Adaptables, has worked to produce an effective and useful Plan for the entire MPO. This committee should also work to get pedestrian-related issues, particularly safety issues, addressed early by the agencies in the best position to do something about them (law enforcement, transportation planning and engineering).

Safe Routes to School

Safe Routes to School programs educate and encourage elementary, middle and high school students to walk to school and do so safely. This Plan has detailed the activities for Safe Routes to School but close coordination between the North Carolina
Department of Transportation, the Winston-Salem Department of Transportation and the Winston-Salem/Forsyth County Public Schools will be required. Funding for this program will come through grants from NCDOT.

Changing Policies and Plans

This Plan identifies a large number of mostly small policy and planning changes to existing documents. It is assumed that the majority of these will be accommodated during the updates of those plans, but this should be carefully reviewed when those plans are being updated. The responsibility of making those changes rests with the individual agency or division re-writing a particular plan but coordinating those changes is the responsibility of the Winston-Salem Department of Transportation.

10.3 Tracking Progress

Every planning document and process envisions changes and progress being made as a result of all the efforts of its participants. While the process of creating the Plan has been successful already in increasing the awareness of pedestrian needs, it is even more important to its ultimate success to continue tracking and updating its contents to remain relevant. Two additional suggestions about updating components of this Plan and tracking its progress are therefore provided to help the MPO’s staff and citizens keep the Plan dynamic and meaningful.

Plan Update Cycle

During the development of this Plan, concerns were expressed about how to incorporate comments from the public, new information, and revised funding and cost profiles. To accommodate these changes, the following update cycle is recommended:
The overall Plan should be reviewed and updated every five years. This regular schedule, beginning in 2012, will allow the MPO to program ahead to allocate funds and resources for future updates.

The project listing should be reviewed and updated every year to ensure that new comments and project changes are included. This will require maintaining a list of project changes by WSDOT and City Engineering staff and to create a simple summary report every January to verify the progress of the Plan.

Benchmarking

Even when the Plan or portions of the Plan are not being reviewed and updated, it is still important to maintain an annual accounting of the progress of the Plan’s implementation. Just as important, the successes in the areas of pedestrian planning should be celebrated and communicated annually – policies adopted, projects completed, and miles of sidewalks under construction. This will require reporting to a central location or data acquisition by MPO staff to create a simple summary report every January to mark the progress of the Plan and that summary should be disseminated to the public.

Summary

Success in developing an MPO-wide pedestrian system will depend on the extent to which this Plan is followed. County and municipal departments along with recreation, transportation, utilities, land use planning and financing all play an integral role in ensuring the effective implementation of the Plan. It is important to secure the support of all the relevant agencies whose contributions are necessary to ensure that the recommendations are implemented. The Pedestrian Plan is intended to enhance the existing pedestrian facilities and the quality of life for all the citizens in the MPO by guiding the location and development of future pedestrian facilities.
GLOSSARY

**ADA:** Americans with Disabilities Act of 1990; broad legislation mandating provision of access to employment, services, and the built environment to those with disabilities.

**Bicycle Advisory Committee (BAC):** On July 25, 2000, the Winston-Salem Transit Authority (WSTA) Board approved the formation of a bicycle committee as a recognized task force under the guidance of the Transit Authority. Membership of the committee includes up to sixteen members representing citizens and city and county agencies. The committee was approved for a two-year period to develop a plan promoting bicycling safety, accessibility, and adequate on and off-road facilities for bicycle travel. The committee continued to meet after the two year period and in Spring of 2004 the committee appealed to WSTA Board and was approved to be moved under the jurisdiction of the Winston-Salem Urban Area Transportation Advisory Committee (TAC).

**Betterment:** an improvement that adds to the value of a property or facility.

**Collector Street:** The roadway servicing traffic between thoroughfares and local roadways. These roadways are mainly used for traffic movements within residential, commercial, and industrial areas.

**Comprehensive Bicycle Plan:** supports the integration of bicycle planning into the long-range growth management efforts of the community.

**Comprehensive Plan:** A planning process that requires the inclusion and careful consideration of the impacts, one upon the other, of land use, transportation, water/seaer, recreation, health, and other concerns. Usually published as the guide or blueprint for future policy decisions.
Congestion Mitigation & Air Quality (CMAQ): The Congestion Mitigation & Air Quality (CMAQ) program directs funding towards transportation projects in areas the excessive levels of ozone and carbon monoxide under federal regulations. These projects will aid in achieving attainment.

Crosswalk: Any portion of a roadway at an intersection of elsewhere that is distinctly indicated for pedestrian crossing. Where there are no pavement markings, there is a crosswalk at each leg of every intersection, defined by law as the prolongation or connection of the lateral lines of the sidewalks.

Cul-de-sac: A street closed at one end.

Curb extension: An area where the sidewalk and curb are extended into the parking lane, usually in order to shorten pedestrian crossing distance. Also called “bulb-out” or “curb bulb”.

Curb ramp: A combined ramp and landing to accomplish a change of level at a curb in order to provide access to pedestrians using wheelchairs.

Curb zone: The portion of the sidewalk corridor that physically separated the sidewalk from the roadway.

GO bond: General obligation bond.

HUD: Housing and Urban Development.

ISTEA: The Intermodal Surface Transportation Efficiency Act of 1991, an innovative six-year transportation funding bill.
**Local Street:** Roadways used primarily for direct access to residential, commercial, industrial, or to other abutting property. They generally do not include roadways carrying through traffic.

**Long Range Transportation Plan (LRTP):** A comprehensive plan for the total transportation system encompassing each mode: transit, rail, bicycle, pedestrian, airport and streets and highways. The LRTP must be fiscally constrained and meet air quality conformity standards for the 2030 horizon year. The LRTP shares population and employment growth assumptions and transportation modeling projections with the Regional Transportation Plan.

**Major Thoroughfares:** Street that moves intra-city and intercity traffic. The streets which comprise the major thoroughfare system may also serve abutting property; however, their major function is to carry traffic.

**Median Refuge Island:** A refuge island located between vehicle travel lanes.

**Metropolitan Transportation Improvement Program (MTIP):** This is a seven year program adopted by the MPO every other year. The MTIP schedules State and Federal funding for transportation projects in the Winston Salem Urban Area MPO. The funds are used for roadway, bridge, safety, public transportation, passenger rail, bicycle, pedestrian, and enhancement projects.

**MPO:** Metropolitan Planning Organizations, a regional body that makes transportation funding decisions as mandated in federal transportation legislation.

**Minor Thoroughfares:** Street that collects traffic from local access streets and carries it to the major thoroughfare system. In some instances, they may supplement the major thoroughfare system by facilitating minor through traffic movement.

**NCDOT:** North Carolina Department of Transportation.
Pathway: A pedestrian walkway that is not a concrete sidewalk.

Pedestrian: A person who travels on foot or who uses assistive devices, such as a wheelchair, for mobility.

Planned Residential Development (PRD): A residentially zoned area, planned and developed as a unit, which is characterized by environmentally sensitive design through the use of flexible development standards.

Right-of-way: An easement held by the City over land owned by the adjacent property owners that allows the City to exercise control over the surface and above and below the ground of the right-of-way.

ROW or R.O.W: See “Right-of-way”.


Sidewalk: An improved facility intended to provide for pedestrian movement; usually, but not always, located in the public right-of-way adjacent to a roadway. Typically constructed of concrete.

**Transportation Improvement Program:** A statewide list of funding information and schedules for highway, public transportation, aviation, rail, bicycle and pedestrian transportation projects.

**Transportation Needs Report:** A prioritized list of project requests for transportation improvements in the Winston-Salem Urban Area which includes Forsyth County and portions of Davidson, Davie and Stokes Counties. The Needs Report is submitted by the Winston-Salem Urban Area Transportation Advisory Committee (TAC) to the North Carolina Department of Transportation and the Board of Transportation for funding in the Transportation Improvement Program (TIP).

**WSDOT:** Winston Salem Department of Transportation.

**Winston Salem Urban Area Thoroughfare Plan:** Provides for the orderly development of an adequate major street system as land development occurs.
Appendix A
Transportation Survey Results
The Winston-Salem Department of Transportation recently conducted a survey to assess the needs of citizens of Winston-Salem, Forsyth County, and other areas within the Winston-Salem Urban Area MPO. The purpose of the survey was to gather citizen opinions on the services that WSDOT provides and to give them an opportunity to share their personal thoughts.

WSDOT received over 1500 surveys with close to 600 written responses pertaining to 20 different categories. Sidewalks received 54 comments totaling 6.07% of responses.

### Comments from WSDOT Survey

<table>
<thead>
<tr>
<th>Survey Number</th>
<th>Zip Code</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>FT002</td>
<td>27012</td>
<td>Would like more sidewalks in my area</td>
</tr>
<tr>
<td>CE089</td>
<td>27045</td>
<td>Need a sidewalk alongside Kirklees Rd from the existing sidewalk at Quarterstaff Rd to the existing sidewalk at Hertford Rd.</td>
</tr>
<tr>
<td>M110</td>
<td>27101</td>
<td>My area I live we really have bad sidewalks, 1300 block of jackson ave to 14th st.</td>
</tr>
<tr>
<td>M211</td>
<td>27101</td>
<td>More sidewalks</td>
</tr>
<tr>
<td>M433</td>
<td>27101</td>
<td>I live too far from the bus stop to walk at my age with regard to question 13, my dissatisfaction is that there are no prevision for school buses to come down close enough in my part of the neighborhood. When my granddaughter lived with me at age 6, the first year of school, she had to walk to the school, bus stop which was too far from my house for me to watch her, and there are no sidewalks in my neighborhood. I was too sick at the time to walk her to the bus stop and there are animals, cats, dogs, etc that come out of the wooded areas in to the street and it was dangerous walking in the streets with cars passing.</td>
</tr>
<tr>
<td>ID</td>
<td>Code</td>
<td>Comment</td>
</tr>
<tr>
<td>------</td>
<td>-------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>O122</td>
<td>27101</td>
<td>We also need sidewalks installed along these two streets to protect walkers from the high volume of traffic as they walk to the nearby Shaffner Park entrance at the intersection of Kirklees and Hertford Rds. Thank you.</td>
</tr>
<tr>
<td>A036</td>
<td>27103</td>
<td>Sidewalks are minimal outside inner area. Crosswalks need to give thought to those without cars.</td>
</tr>
<tr>
<td>O082</td>
<td>27103</td>
<td>Encourage walking with better sidewalks</td>
</tr>
<tr>
<td>PDF004</td>
<td>27103</td>
<td>Should be sidewalks on both sides of heavily traveled streets such as miller st and clovardale Ave. Should have pedestrian signal at medical center blvd and cloverdale. Require a sidewalks in front of all city business that are improving their parking lots.</td>
</tr>
<tr>
<td>PKY025</td>
<td>27103</td>
<td>better sidewalks</td>
</tr>
<tr>
<td>PKY025</td>
<td>27103</td>
<td>Side walks in black neighborhoods as well as white</td>
</tr>
<tr>
<td>A031</td>
<td>27104</td>
<td>Try walking across Hanes Mall! Look into sidewalk over/underpasses.</td>
</tr>
<tr>
<td>A095</td>
<td>27104</td>
<td>Few places don’t have sidewalks or curb cutouts. Some places do not accommodate wheelchair access.</td>
</tr>
<tr>
<td>M279</td>
<td>27104</td>
<td>A sidewalk on Southwin Dr. would be wonderful.</td>
</tr>
<tr>
<td>PDF008</td>
<td>27104</td>
<td>no sidewalks in area</td>
</tr>
<tr>
<td>PDF009</td>
<td>27104</td>
<td>Need more sidewalks</td>
</tr>
<tr>
<td>A093</td>
<td>27105</td>
<td>There are no sidewalks and if I stay after dark, its not really safe to walk.</td>
</tr>
<tr>
<td>M006</td>
<td>27105</td>
<td>We have no sidewalks.</td>
</tr>
<tr>
<td>M029</td>
<td>27105</td>
<td>I also feel we should have sidewalks in our neighborhood North Hampton.</td>
</tr>
<tr>
<td>M045</td>
<td>27105</td>
<td>I would like to also see sidewalks on Pine View</td>
</tr>
<tr>
<td>M132</td>
<td>27105</td>
<td>Also, more sidewalks would be a welcome improvement.</td>
</tr>
<tr>
<td>M195</td>
<td>27105</td>
<td>There is not enough sidewalks</td>
</tr>
<tr>
<td>M358</td>
<td>27105</td>
<td>Neighborhood sidewalks</td>
</tr>
<tr>
<td>M413</td>
<td>27105</td>
<td>There are no sidewalks in neighborhood. Residents of Canaan Place walk through neighbors yards to get to bus stops at Oak Ridge and Johnson Hardin Ct.</td>
</tr>
<tr>
<td>ID</td>
<td>Code</td>
<td>Description</td>
</tr>
<tr>
<td>--------</td>
<td>------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>M464</td>
<td>27105</td>
<td>Sidewalks and curbs needs to be fixed.</td>
</tr>
<tr>
<td>M504</td>
<td>27105</td>
<td>Would like to see more sidewalks in the Rural Hall area.</td>
</tr>
<tr>
<td>WSTA097</td>
<td>27105</td>
<td>We have no sidewalks.</td>
</tr>
<tr>
<td>WSTA098</td>
<td>27105</td>
<td>A sidewalk on Southwin drive would be wonderful.</td>
</tr>
<tr>
<td>A091</td>
<td>27106</td>
<td>Sidewalks with curbcuts are needed.</td>
</tr>
<tr>
<td>AF030</td>
<td>27106</td>
<td>More sidewalks in neighborhoods.</td>
</tr>
<tr>
<td>CE034</td>
<td>27106</td>
<td>I think better sidewalks and more of them would be good as well.</td>
</tr>
<tr>
<td>M179</td>
<td>27106</td>
<td>Side walks on Polo Rd between Cherry St and University should be installed.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Several years ago, there was a bond to be voted for including sidewalks</td>
</tr>
<tr>
<td></td>
<td></td>
<td>from Robinhood Rd. to Indiana Ave. I voted for it and it passed. Now there</td>
</tr>
<tr>
<td></td>
<td></td>
<td>is still no sidewalks on Polo. I have voted against each bond now for</td>
</tr>
<tr>
<td></td>
<td></td>
<td>several years, I will counter to vote against each bond that are on the</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ballot until this project of sidewalks along Polo are completed. I'm not</td>
</tr>
<tr>
<td></td>
<td></td>
<td>the only person out here that feels this way and felt that we were simply</td>
</tr>
<tr>
<td></td>
<td></td>
<td>lied to.</td>
</tr>
<tr>
<td>M220</td>
<td>27106</td>
<td>We need sidewalks in the neighborhood.</td>
</tr>
<tr>
<td>M406</td>
<td>27106</td>
<td>I am new to my area and find Shattalon is a heavily walked street</td>
</tr>
<tr>
<td></td>
<td></td>
<td>between Bethabara and Reynolda. My fear is that someone will get hit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>since traffic travels at some obscene speeds at times. Also, I am tired of</td>
</tr>
<tr>
<td></td>
<td></td>
<td>picking up trash. Sidewalks would be a plus to the community.</td>
</tr>
<tr>
<td>O005</td>
<td>27106</td>
<td>Because of the high incidence of speeding vehicles on Allistair and</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Greenhurst, building sidewalks in New Sherwood Forest is of high interest</td>
</tr>
<tr>
<td></td>
<td></td>
<td>in my neighborhood.</td>
</tr>
<tr>
<td>O118</td>
<td>27106</td>
<td>We sidewalks that go nowhere (reynolda rd.)</td>
</tr>
<tr>
<td>PKY049</td>
<td>27106</td>
<td>I do wish there were sidewalks in the W-S area. I have young children and</td>
</tr>
<tr>
<td></td>
<td></td>
<td>I don't feel comfortable walking anywhere with them because of the lack of</td>
</tr>
<tr>
<td></td>
<td></td>
<td>sidewalks. I won't push strollers or wagons on the streets it is too hard to</td>
</tr>
<tr>
<td></td>
<td></td>
<td>push them on grass.</td>
</tr>
<tr>
<td>PKY066</td>
<td>27106</td>
<td>Need sidewalks in my neighborhood.</td>
</tr>
<tr>
<td>ID</td>
<td>Zip</td>
<td>Comment</td>
</tr>
<tr>
<td>-------</td>
<td>------</td>
<td>--------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>SJ005</td>
<td>27106</td>
<td>Absolutely no alternative transportation options in kernersville. No opportunities to walk or bicycle safely</td>
</tr>
<tr>
<td>SJ005</td>
<td>27106</td>
<td>In W-S, the availability and quality of sidewalks is extremely poor and need to be improved if people are to be able to use alternative means of transportation.</td>
</tr>
<tr>
<td>A059</td>
<td>27107</td>
<td>Not enough wheelchair access for areas like sidewalks.</td>
</tr>
<tr>
<td>M096</td>
<td>27107</td>
<td>Please build sidewalks on Betty Dr, Winston-Salem, NC 27107</td>
</tr>
<tr>
<td>M125</td>
<td>27107</td>
<td>There are no sidewalks.</td>
</tr>
<tr>
<td>M153</td>
<td>27107</td>
<td>It would be great to have sidewalks through communities like mine. So many people walk on the road in this very high traffic and excessive speed zone neighborhood. Old 109/Old Lexington Rd; Rosanne Dr/ Cash Dr.</td>
</tr>
<tr>
<td>M185</td>
<td>27107</td>
<td>Please add sidewalks in all neighborhoods/ bus stops</td>
</tr>
<tr>
<td>M450</td>
<td>27107</td>
<td>Furthermore the city allows cars and trucks to park on the sidewalks thus completely impeding the pedestrian right of way.</td>
</tr>
<tr>
<td>RTB008</td>
<td>27110</td>
<td>South side-clemmonsville rd-teen moms walking to griffith with children.</td>
</tr>
<tr>
<td>M161</td>
<td>27127</td>
<td>There are too few sidewalks for me to safely walk to bus stop.</td>
</tr>
<tr>
<td>M182</td>
<td>27127</td>
<td>We have no sidewalks.</td>
</tr>
<tr>
<td>M257</td>
<td>27127</td>
<td>Sidewalks and bike lanes! It is so risky to walk anywhere in my neighborhood (South Main St.); cars drive so fast and the roads are too narrow for walking or biking--too much garbage thrown for vehicles to make walking on grass safe.</td>
</tr>
<tr>
<td>M300</td>
<td>27127</td>
<td>There is not enough sidewalks</td>
</tr>
<tr>
<td>PKY039</td>
<td>27127</td>
<td>More sidewalks please</td>
</tr>
<tr>
<td>AF036</td>
<td></td>
<td>More sidewalks</td>
</tr>
<tr>
<td>M308</td>
<td></td>
<td>I think sidewalks should be through out the city our tax dollars should speak for sidewalks.</td>
</tr>
<tr>
<td>AF025</td>
<td>27105</td>
<td>I would like sidewalks in my community so I can exercise and safely walk my dog</td>
</tr>
</tbody>
</table>
Appendix B
Proposed Sidewalk Locations
**Area Plans**
The recommendations for sidewalks provided below are directly from the Area Plans prepared by the CCPB staff, planning departments from the other municipalities, and community input.

**Walkertown**
- Install sidewalks within the Town Center (Page 22)

**Southeast Winston-Salem**
- Old Lexington Road, Burgandy Street, Dacian Street, Allen Street, Marne Street, Argonne Boulevard, Diggs Boulevard, Pleasant Street, Butler Street, Sprague Street, Reynolds Park Road, Cole Road, Broadbay Drive, Nicholson Road, and Salem Lake Road (Pages 30-32).

**North Suburban**
- Bethania Station Road, Home Road, Polo Road, Silas Creek Parkway, University Parkway, Murray Road, and Walker Road (Pages 43-45).
- In Activity Centers, Traditional Neighborhood Developments and the area surrounding Wake Forest University and First Assembly of God Church (Pages 43-45).

**South Central Winston-Salem**
- Granville Drive, Crestwood Drive, Spring Street, Hutton Street, Washington Park Lane, Bank Street, Gregory Street, Mulberry Street, Silas Creek Parkway and Buchanan Street (Page 54).
Revitalizing Urban Commercial Areas (RUCA)
The recommendations for sidewalks provided below are from the report prepared for the RUCA program.

Funded RUCA
Washington Park
New sidewalk on Hollyrood Street from Acadia to Konnoak

Liberty Street
New Sidewalk on New Hope Lane from Liberty to Cleveland Avenue

Waughtown Street
New sidewalk on Junia Avenue from Old Lexington Road to Martin Luther King Jr Drive
New sidewalk on Monmouth Street from Old Lexington Road to Dacian Street
New sidewalk on Dacian Street from Junia Avenue to Sprague Street
Thomasville Road from Waughtown Street to Devonshire Street (this sidewalk may need to be done with RUCA funds if other funding is not available in the next two years)
New sidewalk for Francis Street from Waughtown Street to Tower Street

Non-funded RUCA
King Plaza
New sidewalk on Nicholson Road (west side) from Kernersville Road to Gilbert Street
New sidewalk on High Point Road (both sides) from Wintergreen Road to Kernersville Road
New sidewalk on Sprague County (south side) to Waughtown Street
New sidewalk on Reynolds Park Road (north side) from Sprague Street to Terry Road
New sidewalk on Waughtown Street (south side) from Reynolds Park Road to High Point Road
New sidewalk on Wintergreen Road (west side) from Kernersville Road to Hall Woodward School
New sidewalk on Kernersville Road (both sides) from Wintergreen Road to Nicholson Road
New sidewalk on Greenpoint Road (either side) from Kernersville Road to High Point Road
New sidewalk on Cole road (east side) from Waughtown Street to Sprague Street

Northside Area
New sidewalk on Patterson Avenue (west side) from Akron Drive to Dominion Street
New sidewalk on Patterson Avenue (east side) from 33rd Street to Indiana Avenue

Northwest/Patterson
New sidewalk on 14th Street (south side) from Chestnut Street to Patterson Avenue

Ogburn Station
New sidewalk on Old Walkertown Road (south side) from Liberty Street to Old train depot (small section already in place)
New sidewalk on Old Walkertown Road (north side) from Liberty Street (merge with Glenn) to Stowe Street
New sidewalk on Old Rural Hall Road (either side) from Old Walkertown Road to Baux Mountain Road

Old Greensboro/Barbara Jane
New sidewalk on Barbara Jane Avenue (east side) from Old Greensboro Road to Apollo Drive

Patterson/Glenn
No new sidewalks recommended

Peachtree/Waughtown
No new sidewalks recommended

Pleasant/Waughtown
No new sidewalks recommended

West Salem
New sidewalk on Peters Creek Parkway from Academy Street to Link Road

**Town of Kernersville Pedestrian & Bicycle Plan**
Both sides of the following roads shall have sidewalks installed:

- West Mountain Street
- East Mountain Street
- Piney Grove Road
- Cherry Street
- Hopkins Road
- Talleys Crossing
- Salisbury Street
- South Main Street
- North and South Main Street in the Historic District
- Regents Park Road
- Dobson Street
- Linville Springs Road
- Bodenhamer Street
- Pineview Drive
- Highway 66
- Union Cross Road
- Century Park Avenue
- and Nelson Street

**Town of Rural Hall Bicycle and Pedestrian Facilities Plan**
The recommendations for sidewalks provided below are from the report prepared for the Town of Rural Hall.

**Bethania/Rural Hall Road (NC 65)**
From US 52 to Forum Parkway on NC 65, it should have sidewalks on both sides.

From Glade Street to Church Street on NC 65, no sidewalks should be installed on the south side due to steep grades and inadequate width along the railroad bridge.

From Church Street to the eastern town limit on NC 65, sidewalks shall be installed on both sides.

**University Parkway/Broad Street (NC 66)**
From the Stokes County line to northern town limits, a sidewalk shall be installed on the east side only. The Norfolk Southern Railroad runs parallel along the west side, therefore a sidewalk is not recommended.

From the northern town limit to Park Street, a sidewalk shall be built on the east side only. The Norfolk Southern Railroad runs parallel along the west side, therefore a sidewalk is not recommended.

Other Thoroughfares
Tobaccoville Road, Westinghouse Road, Forum Parkway and the Forum Parkway Connector, Northridge Park Drive, the Rural Hall loop, and the Wall Street Extension shall have sidewalks on both sides of the road.

Summit Street
Academy Street to Summit Street on the south side
Jackson Avenue to Pine Street on the south side

Church Street
From Bellemead Street to Park Street on the west side

Bellemead Street
From Summit Street to NC66 on the north side

Glade Street
From NC 65 to Bethania Street on the east side

Second Street
From NC 66 to Depot Street on the north side
From Depot Street to Second Street on the west side
**Tobaccoville**
The recommendations for sidewalks provided below are from the community of Tobaccoville.

**The Village Park**
South side of Rolling Hill Drive, west side of Doral Drive, and north side of Tobaccoville Road as they border The Village Park.
Appendix C
Sidewalk Ranking Criteria
### SIDEWALK RANKING CRITERIA

**Location**

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>Side of Street</th>
<th>Approximate Length</th>
<th>Date Ranked</th>
</tr>
</thead>
</table>

#### Street Type:

<table>
<thead>
<tr>
<th>Street Type</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major Thoroughfare</td>
<td>7</td>
</tr>
<tr>
<td>Minor Thoroughfare</td>
<td>5</td>
</tr>
<tr>
<td>Collector Street</td>
<td>3</td>
</tr>
<tr>
<td>Local Street</td>
<td>2</td>
</tr>
<tr>
<td>Cul-de-sac Street/Dead End</td>
<td>1</td>
</tr>
</tbody>
</table>

**Maximum Points 7**

**Total**

#### School: (within 1/2 mile radius)

<table>
<thead>
<tr>
<th>School</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary School</td>
<td>5</td>
</tr>
<tr>
<td>Middle School</td>
<td>5</td>
</tr>
<tr>
<td>High School</td>
<td>5</td>
</tr>
<tr>
<td>College/University</td>
<td>5</td>
</tr>
</tbody>
</table>

**Maximum Points 20**

**Total**

#### Pedestrian Generators: (within 1/2 mile radius)

<table>
<thead>
<tr>
<th>Pedestrian Generators</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential Areas</td>
<td>4</td>
</tr>
<tr>
<td>Park/Playground/Recreation Center</td>
<td>4</td>
</tr>
<tr>
<td>Shopping/Retail and Services</td>
<td>4</td>
</tr>
<tr>
<td>Library</td>
<td>4</td>
</tr>
<tr>
<td>Business Park/Office(Hospital)</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Maximum Points 20</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>Connects to existing or planned Sidewalk/Greenways/Bike Trails:</td>
<td></td>
</tr>
<tr>
<td>Major Connectivity</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Minimal Connectivity</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Connects to existing or planned Sidewalk/Greenways/Bike Trails:</td>
<td></td>
</tr>
<tr>
<td>Maximum Points 6</td>
<td></td>
</tr>
<tr>
<td>Bus Stop: (along proposed route) WINSTON-SALEM PROJECTS ONLY</td>
<td></td>
</tr>
<tr>
<td>PART/WSTA Bus Stop</td>
<td>10</td>
</tr>
<tr>
<td>Park and Ride Lot</td>
<td>5</td>
</tr>
<tr>
<td>Maximum Points 15</td>
<td></td>
</tr>
<tr>
<td>RANKING SCORE</td>
<td></td>
</tr>
<tr>
<td>Other Factors</td>
<td></td>
</tr>
<tr>
<td>Average Daily Traffic Volume</td>
<td></td>
</tr>
<tr>
<td>Curb and Gutter Facility</td>
<td>Yes/No</td>
</tr>
<tr>
<td>Right-of-Way Available</td>
<td>Yes/No</td>
</tr>
<tr>
<td>General Constraints(poles, hydrants, vegetation,)</td>
<td>Yes/No</td>
</tr>
<tr>
<td>Sight Distance Problem</td>
<td>Yes/No</td>
</tr>
<tr>
<td>Posted Speed Limit</td>
<td></td>
</tr>
<tr>
<td>Project Feasibility:</td>
<td></td>
</tr>
</tbody>
</table>