III. Environmental and Social Context

Walking is the oldest, cheapest, and most universal form of transportation. Everyone at some point is a pedestrian – even if just disembarking from a bus or walking between a personal vehicle and an office. Those who are wheelchair dependent, though not pedestrians in the traditional sense, will utilize the same public space for connectivity as someone on foot and must be considered in the design of pedestrian infrastructure.

Between the 1950's and 1980's our nation generally designed, budgeted, and planned with a focus on improving automobile travel. While this trend reflected the desire to meet the travel demands of the population, it also resulted in some undesirable situations for pedestrians and those who are wheelchair dependent. Communities saw fragmentation of neighborhoods by highways and thoroughfares designed uniquely for automobiles, bringing motorists and pedestrians directly into conflict. A boom in subdivision and shopping areas built outside the urban core devastated downtowns and were designed with little consideration for pedestrian connectivity or safety. Emphasis on the personal automobile resulted in a general lack of investment in pedestrian infrastructure construction and in some cases maintenance. Neighborhoods and towns built before the 1950's – including areas in Asheville – often have a well-designed and connected system of sidewalks while developments built after the 1950's and even through the early 90's will more often not.

As pedestrian infrastructure decreased and automobile infrastructure increased, land-use decisions and personal behaviors shifted accordingly. The once common practice of walking to work, to school, or to shop – and designing spaces for that purpose - all but disappeared in less than a generation. The Centers for Disease Control has pointed out that lack of day-to-day physical activity once so integral in daily life when people commonly walked from place to place, along with other factors such as the proliferation of fast food chains, have contributed to an increase in obesity rates and diabetes. In addition to health problems, as our nation drives more and walks less, we experience traffic congestion, mobile emissions contributing to pollution, hazardous situations for motorists and pedestrians alike, and a loss of mobility – as well as social and economic access -- for those without cars, such as those of lower income, those who can't or don't drive and children.

Since the late 80's, there has been movement back toward urban design and a real-estate market that values pedestrian infrastructure. Today, many appreciate the aesthetic, social, environmental, and health benefits pedestrian friendly design can contribute. Whether speaking of *new urbanism, traditional neighborhood design, sustainability, smart growth,* or *livable communities*, planners, developers and real estate professionals will speak of the importance and desirability of pedestrian infrastructure.

In Asheville, we are fortunate that in many of our historic areas, the central business district and neighborhoods, the sidewalk networks have been preserved and that modern City leadership has considered pedestrians in their urban design decisions. The City Development Plan 2025 illustrates our history for, and continued commitment to, thoughtful planning that values the pedestrian environment. Asheville however still has significant gaps in its pedestrian network, older sidewalks built before ADA design guidelines, those that need to be reconstructed because of age, and developed areas and thoroughfares with no pedestrian infrastructure at all. Asheville must continue to address these needs for reasons of particular importance to our community's adopted vision.

A. Air Quality

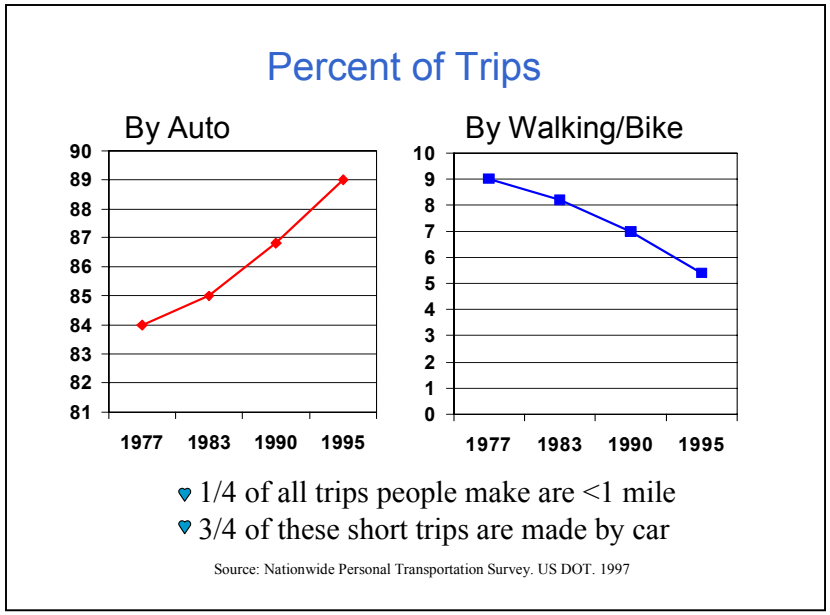
Ranked as the number one concern by respondents to the 2004 Asheville Area Chamber Legislative Survey, poor air quality could one day limit local transportation planning, impact the City's ability to market itself as a tourism destination, and effect community health. Citizens of Asheville are seeing and feeling effects of the three major transportation-related pollutants. These derive from mobile emission sources like automobiles and are "criteria" pollutants of the National Ambient Air Quality Standards established by EPA in response to the Clean Air Act (CAA):

- Ozone (O_3) and its precursors – volatile organic compounds (VOC) and nitrogen oxides (NO_x). Ozone at ground level is formed when pollutants emitted by cars, power plants, refineries, and other sources react chemically in the presence of sunlight.
- Particulate Matter (PM) or particle pollution – both "fine particles" (less than 2.5 micrometers) and "coarse particles" (between 2.5 and 10 micrometers). PM is a mix of solids and liquid droplets in the air that come from combustion, including motor-vehicles, power plants, outdoor burning, and some industrial processes.
- Carbon Monoxide (CO) is an odorless and colorless gas that forms when carbon in fuels does not completely burn and comes from vehicle exhaust and other fuel combustion processes as well as natural sources such as wildfires.

The 1990 CAA Amendments and the 1991 Intermodal Surface Transportation Efficiency Act (ISTEA) tied air pollution regulations and transportation planning by requiring state "conformity" processes to demonstrate that transportation plans and programs keep emissions within required limits. A conformity determination is required for every transportation improvement program (TIP) adopted by MPOs in non-attainment areas. The Asheville Area exceeded the 8-hour ozone limit for the years 2000-2002, and came close to being designated under the $PM_{2.5}$ rules in 2004, but avoided non-attainment designation in both categories. Locally, Asheville and Buncombe County formed an Early Action Compact Committee to identify strategies to improve air quality and expressed interest in maintaining the EAC even though formal designation was avoided.

Today, air pollution remains a concern even at current levels, impacting community health and contributing to haze that limits mountain views. Ozone and PM can effect children, the elderly and those with asthma, and increase the risk for respiratory diseases. Local medical professionals are concerned and vocal about our area's air quality, and the House of Delegates of the Buncombe County Medical Society unanimously adopted a resolution in 2001 urging all branches of government to work toward cleaner air because of the public health impact of air pollution exposure.

While sensitive populations should avoid walking during ozone action days, more walking by everyone on a regular basis could reduce mobile emissions and decrease ozone. According to US EPA's Office of Air Quality Planning and Standards' *National Air Pollutant Emission Trends, 1900-1996* (1997) cars and trucks account for 25% of air pollution nationwide. In 1996, on-road vehicles produced 60% of all carbon monoxide emissions, 31% of nitrogen oxide emissions and 29% of volatile organic compound (VOC) emissions nationwide. According to USDOT's *Personal Transportation Survey* (1997), 25% of all trips made in the U.S. are less than 1 mile, but 75% of these short trips are made by automobile.



Bureau of Transportation Statistics (www.bts.gov)

Pedestrian Travel in 2002:

- 77% of pedestrians report that they walk, run or jog for exercise or recreation.
- 15% walk to complete personal errands.
- 7% report that the primary reason they walk is to get to work or as part of their job.

Asheville Local Network

Asheville valley monitors denoted by circles
Asheville ridge-top monitors denoted by triangles.

The air quality monitor at Bent Creek in Buncombe County indicated that the area's ground level air quality did not meet the EPA's eight-hour ozone standard for the years 2000 – 2002.

Map and additional information is available on the NCDAQ website: http://www.daq.state.nc.us

Or contact the:
NC Division of Air Quality
1641 Mail Service Center
Raleigh, NC
27699-1641
(919) 733-3340

B. Community Health

A safe, accessible, and integrated pedestrian environment is critical to community health because it provides an alternative to automobile use, reducing emissions, and creates opportunities to walk, jog, or play on a regular basis, increasing physical activity.

Health Risks Related to Inactivity, Pedestrian Safety, and Air Quality

- Almost 50% of adults and 25% of children in the U.S. are considered overweight.
- Sharp increase in cases of type-2 diabetes nationally.
- Asthma rates have increased 160% in the past 15 years.
- Only 19% of North Carolinians are getting recommended amount of physical activity (30 minutes/day according to the US Surgeon General)

Source: Department of Health and Human Services, Centers for Disease Control and Prevention, 2004.

In Buncombe County, the 2003 North Carolina Physical Activity Surveillance System (NCPASS) reports that 795 children of ages 2-18 are overweight and 611 are considered "at risk" for being overweight, reflecting a statewide trend of concern. "Eat Smart; Move More North Carolina" and it's affiliated local Health Department project "Healthy Buncombe," promotes awareness about the implications of community walkability and physical exercise to health. In Asheville, "Healthy Buncombe" conducts walkability assessments to support City planning efforts, organizes Walk to School events and supports Strive-Not-to-Drive activities and other initiatives.

For more information on State and County initiatives see:
www.eatsmartmovemorenc.com or www.healthybuncombe.org

Asheville is recognized by national magazines as one of the best cities in which to live or retire. In the 2000 Census, of the City's 68,889 total population, 18.2% or 12,597 were 65 years or older and 16.4% or 11,249 were 14 years or younger. This means that roughly one third of our population is either too young to drive or of retirement age - both groups of particular concern when it comes to sensitivity to air pollution and the need for physical activity.

By providing accessible and inviting pedestrian facilities, the City can provide equal opportunity for everyone to improve health and prevent disease through exercise. This in turn saves government and local employers money in health care costs and lost productivity due to sick days.

Walking Increases ...

- Energy, stamina and metabolism;
- Muscle tone and bone density;
- HDL - the "good" cholesterol;
- Volume of plasma in blood - which thins the blood and reduces the risk of clotting;
- Prevention of risk factors for Coronary Artery Disease, some cancers and other diseases; and
- Wellness, fitness and psychological well-being.

Walking Decreases ...

- Risk of Coronary Artery Disease, many cancers, osteoporosis and other diseases;
- Risks of Diabetes, lowering blood sugars and body fat levels;
- Symptoms of PMS, back pain, arthritis
- The Number of episodes of common cold;
- Blood pressure and LDL - the "bad" cholesterol; and
- Stress

C. Tourism and Economic Development

Pedestrian facilities provide an important public realm for maintaining and enhancing the tourism and small business sectors of our local economy. The sidewalks of Biltmore Village, the Asheville Central Business District and other commercial areas not only connect pedestrians or those in wheelchairs to destinations, but also create consumer engagement with businesses and promote tourism.

Sidewalks provide space for outdoor dining, window-shopping, social interaction, bicycle racks, benches, trash receptacles, as well as public art and historical markers that tell the story of Asheville and bring out the artistic character of our community. From the Urban Trail, to boards for checkers or chess, to decorative brick, the pedestrian realm of Asheville is essential to the City's uniqueness as a center of the arts and an inviting place to visit – both invaluable commodities for our local economy.

Pritchard Park was redesigned in the 90's to create a pedestrian friendly Park space in the center of downtown. Today it hosts concerts, movie screenings, drum circles, and chess games.

According to the Center City Plan, 2004:

> *"Downtown Asheville is the place in the community to which virtually every citizen travels at least occasionally. Downtown is also a destination for tourists and regional visitors. For downtown to serve its function as the center of the community and a viable attraction for tourists it must be accessible. And, it must be accessible to the entire population, not just motorists. Accessibility requires the creation and maintenance of functional transportation linkages. These must create a connection between the Center City and other areas of town, providing clear vehicular and pedestrian routes that enable residents and visitors to connect with the businesses, shopping and attractions in Downtown."*

The Center City Plan supports objectives to eliminate sidewalk obstacles such as utility poles, boxes, etc., to construct sidewalks where there are identified needed linkages, to assess crosswalks to improve pedestrian movement through intersections, and to include streetscape elements where possible.

Pedestrian connections in and out of downtown and to other tourism and commercial destinations such as Biltmore Village or other historic districts are also vital to facilitating tourism and attracting commerce by connecting local attractions to area Motels, Bed and Breakfasts, and local neighborhoods.

The Urban Trail integrates sculpture and art into the City's streetscape that teaches about the history of the City while highlighting our vibrant arts community.

D. Transportation Demand Management and Transit

Transportation should be holistic, with needs of automobiles, freight, transit services, bicycles, pedestrians, and the wheelchair-dependent considered. When bicycle, pedestrian, wheelchair and transit needs are lumped together as "alternative transportation" in public discussion, they are marginalized as special concerns, when in fact they are viable and even essential, pieces of the transportation system. When these modes are not developed in balance with roadway planning for automobiles, personal transportation choice and options are constrained and transportation demand for the automobile outpaces the roadway infrastructure available. This leads to congestion, failed level of services (LOS) for roadways, increases in fuel consumption and mobile emissions – idling vehicles emit more precursors to ozone, CO2, and PM than freely moving vehicles - and increased costs for commuters.

Nationally, congestion in urban areas is getting worse and costing more. The *2003 Urban Mobility Report*, produced by the Texas Transportation Institute studied traffic situations in 75 urban areas measuring factors such as hours of travel delay per person and the "Travel Time Index" – a measure of additional time needed to make a trip during peak travel periods compared to free flow periods. The index has tripled since TTI began collecting data in 1982. The 2003 Study estimates that:

> *"Drivers wasted about 5.7 billion gallons of fuel, or about 42 gallons per person, in 75 areas studied. Annually, 3.5 billion hours of extra travel time can be blamed on traffic congestion. The total cost of congestion has risen nearly $70 billion, $4.5 billion more than the previous year. The average cost per person in the 75 cities studied was $520…averages ranged from $650/person in areas with populations greater than 3 million to $130/person in smaller towns."*

Asheville is the Lead Planning Agency for The French Broad River Metropolitan Planning Organization and is required to develop a Congestion Management System (CMS) to mitigate congestion in the region. As one of the CMS strategies proposed in the CMS Outline approved by the MPO, Asheville is initiating a Transportation Demand Management (TDM) program for the City.

TDM utilizes a variety of strategies, such as ride-share programs, transit, staggered work shift hours, and the promotion of pedestrian and bicycle travel, in order to reduce demand for single occupancy vehicle use and mitigate traffic congestion. The goal of the program is to decrease mobile emissions and to increase options and efficiency in local transportation.

Pedestrian infrastructure is necessary to provide a means whereby people may choose to walk instead of drive, reducing the number of cars on the road. It is also essential to support a user-friendly and accessible transit system. In coordination, transit and pedestrian infrastructure can provide a seamless means for citizens to move throughout the City without necessarily utilizing a vehicle and the City is actively pursuing the investment of additional funds toward sidewalks and crosswalks that service local transit stops.

> *"We must focus improvements on our sidewalks and crosswalks that work in tandem with improving our transit service. For example, wherever new improvements to bus stops and routes are planned, plan to improve the pedestrian infrastructure to insure safe and easy access to those facilities. This would mean that the benefits from our investment to the pedestrian infrastructure would be multiplied way beyond the limited funds we have to invest."*
>
> - Andrew Goldberg, Transit Advisory Board member

In Asheville, City leadership is committed to implementing a successful TDM program and to supporting and expanding transit services. To truly provide a convenient and attractive transportation option to the personal vehicle however, transit routes and pedestrian facilities must work in concert.

Many might challenge the idea that people would choose to walk for transportation in these modern times, or that promoting walking is a legitimate transportation demand management strategy. However studies by the Victoria Transportation Policy institute and others have shown that non-motorized travel is a legitimate TDM strategy, given certain factors (Schwartz, et al, 1999; Porter, Shurbier, and Schwartz 1999; Moudon, 2001) that are certainly present in Asheville. These include:

- *Attractions.* Certain activity centers tend to be major attractors for walking and cycling, including commercial districts, school-college-university campuses, employment centers, recreation centers and parks.
- *Trip distance.* Most walking trips are less than a mile, and most bicycling trips less than 5 miles in length, although recreational trips are often much longer.
- *Demographics.* Young (10-20 years), elderly, and low-income people tend to rely more on walking for transport.
- *Land use patterns (density and mix).* Walking and bicycling for transportation tend to increase with density (number of residents and businesses in a given area) because higher density makes these modes more efficient.
- *Travel conditions.* Wide roads with heavy, high-speed vehicle traffic can form significant barriers to nonmotorized travel. Facilities (sidewalks, greenways, etc.) and their condition can have a significant impact on the amount of walking and bicycling that occurs.
- *Topography and climate.* These factors can affect walking and bicycling, but not as much as might be expected. For example, the cities of Seattle, Portland and Missoula report significantly higher levels of cycle transportation than many "Sunbelt" cities that are flat and have mild climates.
- *Community attitudes.* Local attitudes can have a major impact on non-motorized travel. For example, it may be unremarkable that cycling tends to be high among college students and staff, but many college towns find that cycling is also relatively common among people who have not formal affiliation with the college simply because it has become an acceptable form of transportation.
- *Time and geographic scope.* It may take several years for a community to fully achieve its full nonmotorized travel potential. First year impacts are frequently modest, but tend to increase as individuals become more accustomed to nonmotorized travel and as additional support facilities (pedestrian and bicycle network, etc.) develop.

E. Public Safety

Given that everyone at some point in their travel must walk (or is in a wheelchair utilizing the public realm outside of an automobile), pedestrians are present with or without pedestrian facilities, including in parking lots, at bus stops, or along the edges of roadways. Where pedestrian facilities do not exist, motorists are not prepared for and do not look for them. According to the CDC, pedestrian injuries are the 3rd leading cause of unintentional injury-related death in the United States.

The NCDOT Division of Bicycle and Pedestrian Transportation began tracking pedestrian related crash data in 1997 that indicates that pedestrian related crashes pose a safety concern for pedestrians and motorists alike.
(http://www.ncdot.org/transit/bicycle/safety/safety_crashdata.html)

Asheville Pedestrian Crash Data – Pedestrian Injury Table

Injury	1997	1998	1999	2000	2001	2002	Totals
K Killed	0	3	1	0	4	3	11
A Type Injury (disabling)	16	14	11	5	5	1	52
B Type Injury (evident)	18	22	15	16	14	22	107
C Type Injury (possible)	19	12	10	16	21	21	99
O No Injury	1	0	0	2	4	4	11
Unknown	0	0	0	2	0	3	5
	54	**51**	**37**	**41**	**48**	**54**	**285**

Asheville Pedestrian Crash Data – Vehicle Drivers Injury Table

Injury	1997	1998	1999	2000	2001	2002	Totals
K Killed	0	0	0	0	0	0	0
A Type Injury (disabling)	0	0	0	0	0	0	0
B Type Injury (evident)	1	0	1	2	0	2	6
C Type Injury (possible)	1	1	0	1	2	1	6
O No Injury	58	53	37	39	38	41	266
Unknown	0	0	0	8	8	11	27
Totals	**60**	**54**	**38**	**50**	**48**	**55**	**305**

Asheville Pedestrian crash Data – Pedestrian Age Group Table

Age Grouped	1997	1998	1999	2000	2001	2002	Totals
0-5	6	2	0	2	2	5	17
6-10	2	1	0	1	4	2	10
11-15	3	2	0	3	2	0	10
16-20	5	3	4	3	2	11	28
21-25	2	6	4	8	2	6	28
26-30	6	2	6	3	2	3	22
31-40	11	10	5	6	7	5	44
41-50	9	13	9	6	12	6	55
51-60	4	3	7	1	6	6	27
61-70	1	2	1	2	4	7	17
>70	5	7	1	6	5	3	27
Totals	**54**	**51**	**37**	**41**	**48**	**54**	**285**

Asheville Pedestrian Crash Data – Vehicle Drivers Age Group Table

Age Grouped	1997	1998	1999	2000	2001	2002	Totals
0 – 19	7	1	6	5	5	6	30
20 - 24	4	4	4	6	3	5	26
25 - 29	4	7	2	3	4	4	24
30 - 39	12	12	6	6	6	9	51
40 - 49	9	9	6	7	12	11	54
50 - 59	13	11	4	8	4	4	44
60 - 69	2	3	3	6	2	1	17
70+	2	4	1	2	4	5	18
Missing	7	3	6	0	0	0	16
Unknown	0	0	0	7	8	10	25
	60	**54**	**38**	**50**	**48**	**55**	**305**

According to recent data from the Asheville Police Department (attached), from January 1, 2004 to June 30, 2004 there have been 15 auto accidents that have involved pedestrians. Three of these incidences have been along Tunnel Road between the tunnel and Kenilworth Road. There have also been incidents on Patton Avenue, Sweeten Creek Road, and Merrimon, Hendersonville and Biltmore Avenues (US25 Corridor) - all state roads designed primarily for automobiles but which are major transportation and development corridors.

Our area's topography limits urban growth to corridors that follow the French Broad River watershed and are edged by steep terrain. Unlike less mountainous areas, Asheville has limited ability to create parallel routes or to expand the transportation network out in a grid pattern. Instead, travel of all types is generally funneled into these major arterials:

North to South

- US 25 (Merrimon, Biltmore, Hendersonville Road)
- 191 (Brevard Road)
- 25A (Sweeten Creek Road)
- 19/23/240 (limited access Hwy)

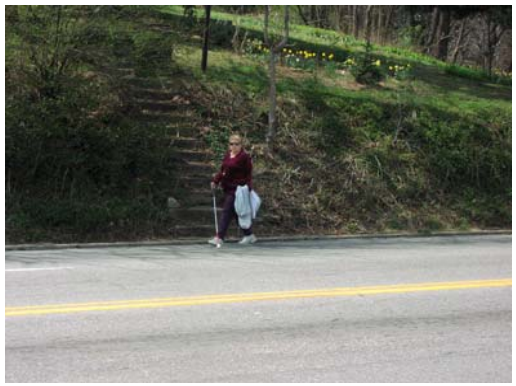
East to West

- 19/23/74 (Smoky Park Highway, Patton Avenue, Tunnel Road, South Tunnel Road, Charlotte Hwy)
- NC81 Swannanoa River Road
- US70 (Tunnel Road)
- 70/74/240 (limited access Hwy)

With limited alternate routes, pedestrians and transit use along these corridors exists whether or not there are proper facilities to ensure safety. Dangerously, pedestrians will even utilize I-240, a limited access highway that is now part of Interstate 26, to connect to their destination. The City must continue to pursue pedestrian improvements on important State thoroughfares as well as on city streets in order to improve traffic safety for everyone.

Photo of a pedestrian walking along 240.

Worn foot path along Hendersonville Road in South Asheville



Visually impaired woman makes her way down the edge of Merrimon Avenue section without sidewalks.

F. Social Equity and Affordability

The development of safe, accessible, and connected infrastructure for pedestrians – creating a "walkable" community -- will provide the most affordable transportation system the City can plan, design, and maintain. As the least expensive form of transportation, walking is the only option available to some. For others, walking may be a preferred choice or a desirable option for any number of reasons already mentioned – whether it be a conscious effort to have less impact on our environment, to get exercise while traveling, or to avoid congestion.

For everyone however, walking instead of driving will save money. In today's environment of increasing oil prices, conflict in the world's oil producing nations, and rising costs of living, walking may become more important to individuals. The American Automobile Association estimates that it costs about $7,300 per year to own and operate a new car that's driven 15,000 miles per year, averaging over $600 per month. This includes insurance payments, gas, maintenance and registration. The Surface Transportation Policy Project in their report *Driven to Spend: the Impact of Sprawl on Household Transportation Expenses*, estimates that transportation is the second largest household expense after housing, with almost 20 cents of each dollar going toward owning and operating an automobile.

Creating a walkable community creates opportunity for everyone to have access to jobs, libraries, schools, community centers, and other destinations no matter what their income. Similarly if the pedestrian environment is designed to meet ADA guidelines and to respond to particular needs of our citizens, the access and opportunity for those with disabilities improves as well.

Man in wheelchair travels along Leicester Highway

Father walks his daughter to shops along Patton Avenue.

Sidewalk and ADA ramp on one side of the crosswalk but not the other, near a community center used for voting.