

A Sidewalk Plan for Jefferson City, Missouri



I. Introduction

Background and Purpose

The pedestrian component is an important element of an integrated, intermodal transportation system, however, the pedestrian was often excluded from general transportation planning. There is a renewed interest in planning for "active" transportation that takes into consideration the needs of the pedestrian, and included in the policies and practices of local governments.

Locally, sidewalks and greenways have become an increasingly expected component in Jefferson City's transportation system, and while a Greenway Plan exists, there has been no specific plan for sidewalks up to this point. The purpose of this document is to:

- Inventory existing and planned sidewalks;
- Consider past practices and experiences;
- Present best practice approaches to nonmotorized or "active" transportation;
- Identify priority areas for pedestrian linkages to improve connectivity and pedestrian mobility;
- Develop a plan to guide public and private investments in sidewalks;
- Improve public and developer acceptance of sidewalk policy and regulations;
- Identify future planning needs and potential funding opportunities.

Sidewalk History and Current Code Requirements

Jefferson City was incorporated as a City in 1825, and began adopting laws pertaining to sidewalks soon after. By 1900, concerns regarding sidewalks and their maintenance were well represented in the City's codes, as numerous ordinances were adopted pertaining to sidewalk offenses and maintenance. Into the 1950s, the City embarked on massive public sidewalk construction programs, primarily within the area now defined as "Old Town."

Automobile travel was the focus in the 1970s, and by the 1980s, sidewalks were being excluded from new subdivisions, presumably because the motoring public no longer demanded them and they added to project cost. During the mid 1980s the street standards were under discussion as well, with proposals to reduce the widths of certain classifications of streets in exchange for a sidewalk construction requirement. According to staff anecdote, developers and the real estate community initially supported this concept but later withdrew support, objecting to the additional expense that sidewalks would add to developments.

In the early 1990s, sidewalks were included on the initial design plans on city projects such as construction of West Truman Boulevard and Seven Hills Road, but were later removed at the City Council's discretion because of project costs. Sidewalks again became a discussion topic during the late 1990s when committees were meeting to rewrite the City's zoning ordinance. A requirement to construct sidewalks in new subdivisions was reinstated in 1999. Since 1999 there were numerous amendments to the sidewalk provisions, including the 2006 requirement to construct sidewalks with almost all new developments. The ordinance history is presented in Appendix A.

II. Demographics

Age Groups

Demographics play a role in transportation planning, and therefore, in sidewalk planning. Children and elderly persons are more likely to walk for trip purposes. Older adults tend to be over-represented in traffic accidents involving pedestrians. Nationally, elderly persons comprise almost one quarter of pedestrian fatalities while comprising only 12 percent of the population.

According to the 1995 National Personal Transportation survey, adults age 65 and older walk for 9% of their trips. This survey showed that the average length of a walking trip approximately one-third of a mile.

Age. In Jefferson City, the median age of the population has increased since 1980, a trend that is projected to increase.

Exhibit 2.1 Selected Demographics, Jefferson City 1980-2000				
Percent of All Persons	1980	1990	2000	
Age 65+	13.1%	15.6%	14.0%	
Age 18-64	63.8%	62.9%	65.1%	
Age <18	23.1%	21.5%	20.9%	
Median Age (in years)	31.4	35.1	36.5	

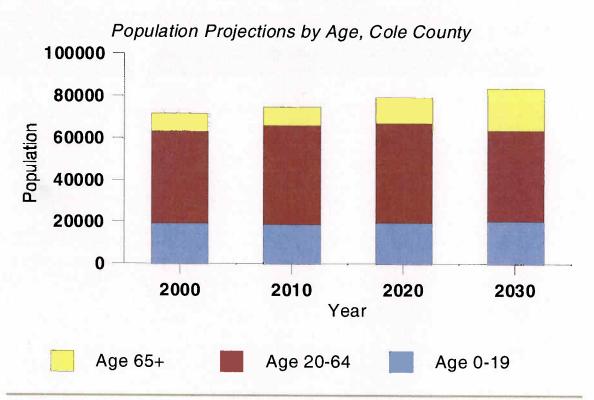
County level population projections prepared by the State Demographer in the Missouri Office of Administration indicate that the age groups most dependent upon walking for transportation (those under the age of 19 and over the age of 65) will increase by 45% between 2010 and 2020.

Nearly all of the increase is projected to occur as a result of an increase in the population age 65 years and older. This age group is projected to increase by 65% between 2020 and 2030, and will constitute nearly one-fourth of the County's population by 2030. While no projections are available specifically for Jefferson

City, these projections provide an indication what the future may hold. If the past is any indication of the future, the population of Jefferson City will be slightly older than Cole County as a whole.

Exhibit 2.2 shows the population projections by age for Cole County for the period 2000-2030. The complete population projections for the period 2000-2030 are presented in Appendix B.

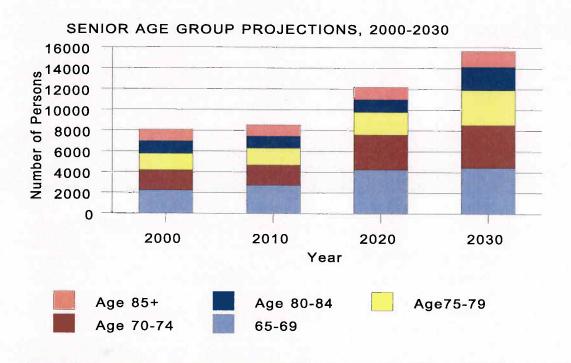
Exhibit 2.2 Population Projections by Age for Cole County, 2000-2030



Over the next 20 years, the population between the ages of 20-64 is projected to decrease slightly, the segment under the age of 19 will increase slightly, and the senior population is projected to increase dramatically.

Currently, persons in the senior age group comprise about 11 percent of the total population. Over the next 20 years, this segment of the population is projected to increase by 84%. Those age 80 and older are projected to increase by 68% over the next 20 years. By 2030, seniors will grow to comprise over 25% of the population in Cole County.

Exhibit 2.3 Senior Age Group Projections for Cole County, 2000-2030



Disability. The Census Bureau estimates there are 51.2 million persons with disabilities in the U.S., representing 18% of the population. The number of persons with a severe disability is 32.5 million or 12% of the population. (Census Bureau, July 2006). Studies show that 85% of Americans living to their full life expectancy will suffer some type of permanent disability.

Table 2.3 presents disability statistics for the Jefferson City metropolitan area for 1990 and 2000. The Census reported the percentage of Missourians with a disability in 2000 was 17.2%. In the Jefferson City area, nearly 16% of the civilian non-institutionalized population between the ages of 16 and 64 years of age reported a disability in 2000; the majority of these individuals were employed (63%). Of those persons age 65 and above, 53% reported having a disability.

Lack of sidewalks and uneven pavement on existing sidewalks can make it difficult, or impossible, for a person to navigate in a wheelchair or with walking aid.



Myrtle Avenue

Uneven pavement

Exhibit 2.4 Persons with Disabilities**	2000		1990		Change	
300	No.	Pct.	No.	Pct.	Pct	
Universe: Age 65 and above**	7,028		6,151		14%	
Persons Age 65+ with a disability	3,732	53.1%	2.427	39.5%	53.7%	
Universe: Persons 16-64 Years**	40,537	12.1	34,578		17.2%	
Persons 16-64 with a Work Disability	6,456	15.9%	2,498	7.2%	71.9%	
Employed Persons with a Work Disability	4,093	10.1%	786	2.3	420.7%	

Source: Missouri State Data Center; MoDOT Demographic Profiles, Capital Area MPO **Percent of civilian non-institutionalized persons

Vehicle Ownership

The vehicle ownership statistics of Jefferson City show that approximately 10 percent of all households have no vehicle available. This segment of the population relies heavily on walking, public transportation, private taxi and friends to move about the community.

Exhibit 2.5 Vehicle Ownership and Commuti	ng			
	Jefferson City		Missouri	
	Number	Percent	Percent	
Households with no vehicles	1,533	9.7 %	8.3%	
Walk/bike to Work	2.3		2.3	
Use transit or taxi	1.7		1.5	
Drive alone to work	80.4		80.5	
Carpool	13.0		11.6	

Sidewalks also support the use of public transportation. Without sidewalks on bus routes, individuals who choose, or depend upon, public transportation are forced to walk in the street alongside the traffic, on uneven shoulders or across yards to get to bus stops, a difficulty that is compounded for persons with mobility challenges, those pushing children in strollers, and for anyone in inclement weather. Persons with mobility challenges find it especially difficult to independently travel if no pedestrian facilities are available.

According to the American Automobile Association (AAA) the estimated cost of driving a single-occupant vehicle is between \$4,826 for a small car and \$9,685 for a large car, depending upon mileage.

By contrast, the annual average cost for public transportation for one adult ranges from \$200 to \$2000 depending upon the type of service.

The cost of walking to a destination is even more economical.



Strolling along Missouri Blvd.

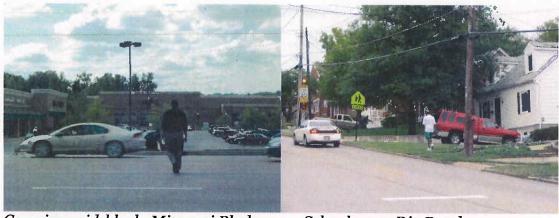
Bus stop on Missouri Blvd at Beck St

III. SAFETY

Each year in the U.S., 5,000 pedestrians are killed and 61,000 injured while crossing or walking along a street in their communities. An average of 700 bicyclists are killed each year, with another 41,000 injured in bicycle-vehicle accidents in the U.S.

In Jefferson City, there were 63 accidents involving pedestrians and bicycles with motor vehicles between 2003 and 2008. Thirteen (20.6%) were classified as disabling accidents. Statistics published for the Jefferson City metropolitan area for 2007-2008 show there were two pedestrian fatalities, representing 4.4% of total traffic deaths. This contrasts with the statewide statistic of 7.3% and the U.S. average of 11.8% (Statistics from *Dangerous by Design* by Transportation for America, 2009). The location and type of local accidents is presented on Exhibit 3.1

Nationwide, older adults are disproportionately represented in pedestrian-vehicle accident statistics. In the U.S. adults age 65 and older comprised 12.5% of the population in 2007 but suffered 19% of all pedestrian fatalities.



Crossing mid-block, Missouri Blvd.

School zone, Dix Road

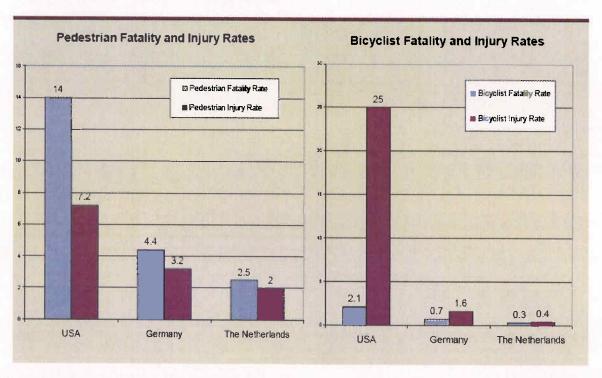
Exhibit 3.1 Pedestrian and Bicycle Accidents Map

The European example is often cited when discussing bicycling and walking. Bicycling and walking typically account for one-fourth to one-half of all personal trips in European cities. This stands in sharp contrast to the United States, where the share of personal trips made by non-motorized means has fallen to between 5-10 percent.

The concern that an increase in pedestrian and bicycle traffic may increase injury and fatality rates within these modes is refuted by actual statistics. Statistics show that higher levels of pedestrian and bicycle use will decrease the accident rate for these modes.

Since the European example is often cited, Exhibit 3.1 presents the number of vehicle accidents involving pedestrian and bicycles per 100 accidents for the U.S., Germany, and The Netherlands. These comparative statistics show that injury and fatality rates are much lower in the European examples. The U.S. pedestrian accident rate is more than three times that of Germany and five times that of The Netherlands.

Exhibit 3.2 Pedestrian and Bicycle Injury and Fatality Rates, U.S. Compared with Germany and The Netherlands



Source: Pucher and Dykstra, "Promoting Safe Walking and Cycling to Improve Public Health: Lessons from the Netherlands and Germany," American Journal of Public Health, September 2003, Vol.93, No. 9. Presented in "Complete Streets for Older Adults, "AARP Public Policy Institute.

IV. Pedestrian System: Existing Conditions

Pedestrian Inventory

The sidewalk and greenway network has been recently and included in the City's Geographic Information System. The pedestrian system has been digitized over the past three years to include an inventory of sidewalks, greenways and internal park trails, represented on **Exhibits 4.1 and 4.2.**

Ward 2 is the most "pedestrian friendly" of the City's five wards, in that approximately 42% of the City's sidewalks are located in this ward, and likewise, possesses the highest percentage of streets with adjacent sidewalks. Wards 1, and 5 each possess approximately the same sidewalk mileage (15 miles). Ward 4 contains just under 13 miles of sidewalks and also includes 63% of the greenway mileage (5 miles). Ward 3 contains 9 miles of sidewalks, or 10% of the total amount of sidewalks in Jefferson City. Exhibit 4.1 presents existing sidewalks and greenways in miles, by ward. The information is presented graphically on Exhibit 4.2.

Ward	Greenways	Sidewalks*	Total
Ward 1	2.1	15.2	17.3
Ward 2	1.8	38.5	40.4
Ward 3	1.1	9.0	10.1
Ward 4	5.5	12.9	18.4
Ward 5	0.4	14.7	15.1
Total	8.7	90.3	101.3

A condition assessment is also being conducted by the Department of Community Development/Public Works Section.

When one considers the number of lane miles of streets that have adjacent sidewalks, the effect of the many years in which sidewalks were not constructed is realized. Compared with the 251 centerline miles of streets in Jefferson City, only about 70 centerline miles, or less than one-third of all streets, have sidewalks or greenways adjacent to them. When greenways are removed from the calculation, only 25% of the City's streets have adjacent sidewalks.

Most public and parochial schools have a partial sidewalk network serving them. The inventory reveals gaps in sidewalks serving individual schools, as well as significant gaps in the overall system that would link schools, parks and activity centers to transit routes and neighborhoods.

Exhibit 4.2 Existing System by Ward

Exhibit 4.3 Pedestrian Facilities by Ward

Section VI. Prior Plans and Local Voices

There were two prior (and notable) efforts to develop specific plans to guide investment decisions on sidewalk construction. In 1993, the City's Public Works Department commissioned *School Area Studies*, prepared by Johnson, Brickell, Mulcahy and Associates, Inc., Consulting Engineers. This study examined 11 school elementary schools (seven public and four private schools) in Jefferson City. This plan recommended walking routes and traffic control improvements within one-half mile of the studied schools. Some recommended investments were made, however the plan was not fully implemented.

Pedestrian-Bicycle Task Force

In 2002, a Pedestrian-Bicycle Task Force, a subcommittee assembled under the auspices of the Environmental Quality Commission, was tasked with proposing actions and policies regarding pedestrian and bicycle safety improvements. The Task Force had been assembled a few years following the City's restoration of a sidewalk construction requirement in new subdivisions, which the Task Force found:

"...laudable and a great improvement, this has the shortcoming of not addressing current areas that don't have sidewalks and not providing for a pedestrian and bicycle transportation system that can get you from one place to another. What we have is disconnected. In addition, the greenway system, which is being developed, often can't be reached by many of our citizens without first getting into a car."

The Task Force cited safety, community and economic development, and community health as important goals for the City and important reasons for improving the environment for pedestrians and bicyclists. The Task Force identified areas where sidewalks were needed and provided suggestions regarding priorities. The Task Force recommended:

- implementation of the 1993 School Area Studies plan;
- update of the School Area Studies plan to include additional routes;
- construction of selected priority sidewalks by the City;
- continued development of the Greenway system;
- designation of bicycle routes on selected streets;
- a sidewalk maintenance program;
- policies to encourage (i) consideration of pedestrians in new developments, (ii) a system of interconnected streets and (iii) street designs that encourage pedestrian access; and
- education of motorists, pedestrians and bicyclists regarding their respective responsibilities.

Specific priority sidewalk routes were identified by the Task Force, and include segments on the following streets:

- Myrtle Avenue
- Belair Drive
- Boonville Road
- Swifts Highway
- Twin Hills Road
- West Edgewood Drive
- Ellis Boulevard
- Stadium Boulevard
- Truman Boulevard
- West Main Street
- East McCarty Street
- Tanner Bridge Road
- Riverside Drive
- Grant Street
- Leslie Bouelvard

Public input was a significant element in the development of the 2006 Greenways Plan for the Department of Parks and Recreation, and the 2030 Metropolitan Transportation Plan for the Capital Area MPO, completed in 2008. Focus groups convened as part of the planning processes suggested the following areas needed "immediate" attention:

- Sidewalks in business areas
- Sidewalks in areas with heavy traffic
- Sidewalks near schools
- Sidewalks to bus stops
- Connecting sidewalks with greenways
- Connecting gaps between sidewalk segments
- Providing for pedestrians when no curb/gutter exists
- Including sidewalks with new construction
- Allocating more funding for sidewalks and bicycles
- Development of a pedestrian/bicycle plan
- Continued implementation of the Greenway Plan
- Education of motorists for pedestrian and bicycle safety

Input from the Development Community

The development community has been consulted regarding development processes and requirements in Jefferson City, and has participated in the debate regarding sidewalks. Several in the development community had questioned the prior requirement to "build sidewalks everywhere," in part due to new non-residential developments occurring in areas in which there were no sidewalks to connect, such as near the City's periphery, and where few pedestrians were expected. Compounding the issue were residential "in-fill" developments in which, if sidewalks were constructed, would be "sidewalks to nowhere" even though residential densities may have been high.

Such issues have been so numerous as to merit a new approach to the requirement to "build sidewalks everywhere." The examples cited by developers provided specific circumstances where the requirement for sidewalks should be reconsidered:

- Streets lacking curb and gutter;
- Industrial areas;
- Areas where terrain or natural elements present obstacles;
- Large campus-type developments, or sites with multiple frontages;
- Residential developments with very low density;
- Areas with a few in-fill lots and no existing sidewalks;
- High speed local streets, state and federal designated highways;
- Equity regarding who pays for the construction of sidewalks.



Industrial Area

High speed roadway

v. Best Practices

Many cities are in similar situations as Jefferson City, that is, many exhibit similar sidewalk development patterns in which there were periods in early city development in which sidewalks and other pedestrian ways were always provided, followed by periods in which sidewalks were likely to be excluded from subdivisions as they spiraled out from the city center to the periphery, and automobile use became more prevalent. Recently, interest has been renewed across the U.S. in development of specific pedestrian and bicycle plans, as well as adoption of programs for construction of bicycle and pedestrian facilities.

AASHTO and FHWA

The American Association of State Highway and Transportation Officials (AASHTO) and the Federal Highway Administration (FHWA) recommend that right of way be preserved for and that sidewalks be constructed on both sides of urban arterial, collector and most local roadways, in general, but also leave room for consideration of exceptions that could be considered for short sections of local streets and for lightly developed areas. Consideration should be given to whether there would be unwanted pedestrian-motorist conflicts in situations where sidewalks were not constructed.

The Federal Highway Administration further suggests the following "best practices" to guide decisions on filling gaps in sidewalk networks along collectors and arterials and prioritizing sidewalk location decisions. FHWA recommends sidewalks in the following locations:

- Within ¼ mile of schools
- Transit stops
- Parks and sports facilities
- Recreational corridors
- Shopping districts and commercial areas
- Senior housing, retirement homes, and high density residential areas
- Medical complexes and hospitals
- Public buildings

The New Best Practice: Complete Streets

There is growing interest across the U.S. in "complete streets." In fact, some discussion regarding the next federal transportation bill has indicated there may be additional federal funds available to communities that have adopted pedestrian-, bicycle- and transit-friendly policies. This would follow the Design Guidance Policy Statement of the Federal Highway Administration that encourages the inclusion of facilities for bicyclists and pedestrians in all transportation projects unless exceptional circumstances exist.

SECTION VI. GOALS, OBJECTIVES, AND POLICIES

Numerous individuals and groups support a return to a more pedestrian-friendly community, but similar to the developer community, do not necessarily support a universal requirement for sidewalks, or policies that result in "sidewalks to nowhere." Policies to include consideration of pedestrians and construct sidewalks as part of new construction has been an important component of the City's development over the past 10 years, and is an important component to retain.

Contributions to the pedestrian network made by the development community alone, however, will not produce the pedestrian network that is desired by the public, given the measured pace of development. Consideration must also be given to the legacy created by more than 30 years of disregard for the pedestrian, as reflected in past practices and policies.

The City has constructed several significant sidewalk segments over the past five years as part of capital improvement programs, however, the investment has been modest, compared to the need. The situation is that a continuous pedestrian facility, whether sidewalk or greenway, still does not exist along many of the City's school routes, busiest streets and bus routes.

Nationally, there is growing sentiment among citizens, elected officials, and transportation planners to improve the walking environment as a (1) viable form of transportation, (2) way to support health and fitness, and (3) provide for expanded recreational opportunities. Locally, residents are concerned about "quality of life" and often point to the City's greenways as contributing to an improved quality of life in Jefferson City. Efforts to improve pedestrian connections to transit, schools, commerce, community facilities, and other activity centers, inclusion of pedestrian facilities in public projects, and consideration of the pedestrian in the City's development standards are a few areas that have an affect on quality of life. A commitment to enhancing the quality of life by promoting a more "walkable" community means that policies and procedures must be revised to make them more supportive of pedestrian transportation.

Vision Statement: The City of Jefferson is committed to providing a safe, comfortable, efficient and connected pedestrian network that will enhance the quality of life for residents, and improve the experience of place for visitors. Pedestrian and non-motorized facilities including sidewalks are integral components of a complete transportation system. The City Council supports construction and maintenance of non-motorized facilities because they:

- Provide connectivity between destinations and modes of transportation;
- Improve and increase personal mobility;
- Promote the use of transportation alternatives, including public transportation;
- Contribute to healthy lifestyles and a higher quality of life; and
- Contribute to the safety of the traveling public.

Goal 1. Develop a Master Sidewalk Plan to guide private and public investments in sidewalks.

Policy a. Identify important pedestrian routes for new sidewalks on major streets, along streets that contribute to a network, or are in areas with sufficient pedestrians to use them.

Strategy (i) Connect neighborhoods with schools, commerce, community facilities and transit.

Strategy (ii) Recognize existing pedestrian districts such as the central business district and Old Town.

Strategy (iii) Connect gaps in the network

Policy b. Sidewalks should be accessible and contribute to pedestrian safety **Strategy (i)** Include pedestrian crossings on arterial streets where cross streets are lacking.

Strategy (ii) Include accessibility enhancements when possible.

Goal 2. Promote and encourage personal mobility by providing a pleasant, safe and efficient walking experience.

Policy a. Adopt a Complete Streets policy.

Strategy (i) Include pedestrian facilities in all street improvement projects, whether funded through local funds or federal/state. **Strategy (ii)** Encourage Missouri Department of Transportation to include pedestrian facilities with state projects.

Policy b. Adopt a maintenance plan to achieve stable and relatively smooth sidewalk surfaces.

Strategy (i) Inventory conditions of existing sidewalks

Strategy (ii) Implement an annual program for repairs and replacement.

Goal 3. Strive for responsible stewardship of existing and planned pedestrian facilities. **Policy a.** Leverage available funding sources, both public and private, to construct and improve the pedestrian system.

Strategy (i) Utilize cost-share programs with property owners to help fill gaps and contribute to the construction and repair of sidewalks as designated on the Sidewalk Master Plan and in Capital Improvement Projects.

Strategy (ii) Identify federal and state funding opportunities, such as Safe Routes to School, Transportation Enhancements, Surface Transportation Funds, etc. with which City funds may be combined in order to accomplish projects.

Strategy (iii) Construct sidewalks on one side of the street on designated streets, when feasible and safe, in order to fill gaps and create a network of sidewalks.

Strategy (iv) Encourage the Parks and Recreation Commission to advance segments of on-street greenways as depicted in the adopted Greenway Plan that are also located in priority pedestrian areas as shown on the Master Sidewalk Plan, as funding becomes available.

SECTION VII. SIDEWALK PLAN

Using the 2002 recommendations of the Pedestrian-Bicycle Task Force, combined with the FHWA Best Practice recommendations, staff proposed a pedestrian system located along arterials, collectors and certain local streets that provide important connections. The proposed system would complement bus routes, and provide service to schools and commercial areas, as well as provide connections to high density residential areas and greenways.

Process

Representatives from each Council ward reviewed possible sidewalk routes in their wards to provide input.

In addition, the following groups participated in identification of sidewalk routes including:

- Environmental Quality Commission
- Planning and Zoning Commission and
- Park Resources and Planning Committee

Exhibits

Mapping of particular elements is a way to ensure that important connections are considered. The following elements were considered in the Sidewalk Plan, and are included for reference.

Exhibit 7.1 Arterial and Collector Streets

Exhibit 7.2 Greenway Plan

Exhibit 7.3 Bus Routes

Exhibit 7.4 Residential Density

Exhibit 7.5 Old Town

Exhibit 7.6 Jefferson City Sidewalk Plan (and Map of Required

Sidewalks Adopted by Ordinance No.14637)

