Kansas City

WALKABILITY PLAN

Prepared for:
City Planning & Development Department
City of Kansas City, Missouri

LSA
LSA ASSOCIATES, INC.

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I. Introduction

Walking is the oldest and most basic form of human transportation. It requires no fare, no fuel, no license, and no registration. Walking is beneficial to ones health and can also be a pleasurable experience. With the exception of devices to assist the mobility-impaired, walking demands no special equipment. Thus, walking is the most affordable and accessible of all modes of transportation.

However, through the second half of the 20th Century, we have seen a decline in our pedestrian environment. When we examine the communities built prior to World War II, we recognize a pedestrian fabric: detached sidewalks, narrow streets to cross, entry ways to the front doors of our homes and businesses. Post World War II marked a major change in how Americans live, with an exodus to the suburbs and growing dependence on the automobile. Development in the 50's and 60's attempted to incorporate some of the pedestrian amenities, such as detached sidewalks. Nevertheless, the new developments became homogeneous and lacked the opportunities to walk to work or shopping. Through the 70's, 80's, and 90's the pedestrian environment continued to become less important as planners and engineers emphasized the automobile, adding new roads and travel lanes on existing roads.

The evolution of designing and planning for the automobile was at the expense of the pedestrians. Sidewalks were no longer provided in certain areas and if they were, it was to allow the passengers of the automobile to step out of their car onto a narrow attached sidewalk, rather than onto a landscaped parkway. As vehicle travel lanes were added to streets and automobile traffic volumes and speeds increased, it became increasingly more difficult for the pedestrian to move around safely.

Past construction of pedestrian facilities, especially prior to the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991, was more a function of roadway design standards than the product of a systematic plan for the pedestrian. For example, if the City required neighborhood streets to have sidewalks and the standard was being enforced; all neighborhood streets were built with sidewalks. If

sidewalks were not mandated for neighborhood streets then they were not built, regardless of where the street was within the system relative to schools, transit service, parks, or businesses.

Over the decades with the planning and engineering emphasis toward automobile travel, the art and recognition of the pedestrian as a viable form of transportation became lost. Even minimum standards of how a pedestrian system of sidewalks, paths, and linkages integrate are non-existent in most communities. Even today, crosswalks are often recommended if deemed unsafe rather than investigating the problem and correcting it.

In summary, walking is an essential part of our daily activities, whether it is trips to work, shopping, school, or to play. Generally, pedestrian facilities are overlooked or sidewalks merely added as part of street improvement projects. However, to preserve and enhance the quality of life in the urbanized areas of the region, consistent maintenance of the existing pedestrian systems and additional facilities are needed.

Why We Are Doing a Walkability Plan

Kansas City residents walk to work on an average of 20% less than the nation.

Why "think pedestrian?" Nationally, there is a growing sentiment among the public, elected officials, and transportation planners to improve provisions for walking as a viable form of transportation, health/fitness, and recreation. This movement both helped direct and is benefiting from changes in national transportation philosophy reflected in ISTEA. The idea of a walkable community became an important factor in Kansas City with the *FOCUS Kansas City Plan*, where it was recognized that all transportation modes, including walking, are critical for the connected City.

There are a number of reasons to walk in our communities and why a Walkability Plan is important for Kansas City and they are included below.

Quality of Life

Quality of life is a hard concept to clearly define. However, it is something that most individuals seek either consciously or in a less-direct fashion. Through national surveys taken regarding pedestrian mobility or public input from residence in Kansas City as part of this process, it is possible to begin to understand this concept of quality of life and how pedestrian mobility plays a factor. Pedestrian opportunities, pedestrian connections to transit, continued development of street standards that embrace the pedestrian and reduce emphasis on the automobile, and detached sidewalks are but a few pedestrian related quality of life objectives stated.

The percent of workers in Kansas City who walk to work has dropped by 19% over the past ten years.

Usage

The number one method of human transport is walking. This may seem obvious, but this fact has often been overlooked in the planning and development of our communities. Furthermore, both ends of a transit trip are a pedestrian trip. Even when one drives, they often must walk from where they park to their final destination. Walking, as a mode of transportation has decreased over the past decade.

Percent of Workers who Walk to Work

Planning District	1990	2000	Difference
Briarcliff/Winnwood	1.1%	0.9%	-18.5%
Country Club/Waldo	1.8%	1.5%	-15.1%
Downtown	14.5%	12.9%	-11.2%
Gashland/Nashua	0.4%	0.6%	24.9%
Heart of the City	1.9%	2.0%	5.0%
Hickman Mills	1.0%	1.0%	-2.9%
KCIA	1.0%	0.8%	-24.0%
Line Creek Valley	1.0%	0.9%	-10.8%
Little Blue Valley	0.4%	1.2%	238.5%
Longview	0.7%	0.5%	-37.4%
Martin City/Richards-Gebaur	3.1%	2.3%	-25.7%
Midtown/Plaza	9.2%	7.8%	-15.0%
Red Bridge	1.8%	1.3%	-26.5%
Riverfront Industrial	0.8%	1.0%	24.7%
Shoal Creek Valley	1.6%	0.8%	-49.8%
Stadium/Park East	1.7%	0.9%	-46.0%
Swope	2.0%	1.3%	-38.3%
Truman Plaza	4.4%	2.2%	-50.5%
Kansas City	2.8%	2.3%	-18.9%
Missouri	2.8%	2.1%	-25.4%
Nation	3.9%	2.9%	-24.9%

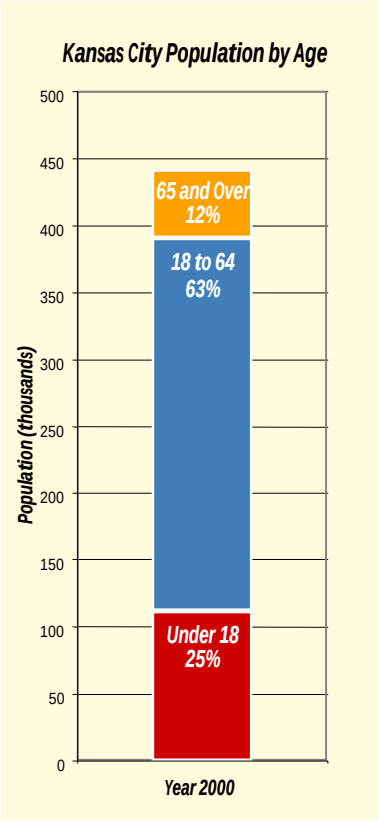
Demographics

Demographics play a role in transportation and pedestrian planning. Children and elderly are more likely to walk for trip purposes. Older adults tend to be over represented in traffic accidents including pedestrians. Nationally the elderly comprise almost one quarter of pedestrian fatalities while comprising only 13 percent of the total population.

Kansas City is third from the bottom of large metropolitan areas for commuters that walk to work.

For years, most transportation and land use planning in this country has tended to overlook the needs of children. A major problem citywide is that many children no longer are able to walk to schools and parks as we have constructed barricades in our newer developments between one residential neighborhood and another. This has resulted in ever increasing costs in school busing that will be expended forever at taxpayers' expense due to a simple lack of good pedestrian planning and development review. Children are also at risk as pedestrians for a number of physical and maturity factors:

- Young children believe if they can see a driver, a driver can see them;
- They think cars can stop instantly;
- They can't tell where sounds are coming from;
- Few can judge how fast traffic is moving;
- Their field of vision is one-third that of an adult; and
- They don't recognize danger or react to it quickly.



Many residents in Kansas City are pedestrian dependent because of income. Their sole means of transportation is by walking, taking a bicycle, or transit. Physically impaired population groups are also often pedestrian and transit dependent and rely on our pedestrian environment.

Latent Demand

National surveys consistently find that over 20 percent of respondents would consider walking to work, shopping, and other local activities if adequate facilities were available.

Reduce Motor Vehicle Parking Needs

Vast amounts of valuable land have been devoted to the storage of automobiles. At $3,000 to $5,000 per surface space and $10,000 to $20,000 for structured space, someone must pay for these spaces. The "free" parking available, for example, at the shopping malls is actually reflected in the cost of goods purchased, whether or not a consumer drove to the center. This is actually a subsidy to the motor vehicle mode.

8% of all traffic deaths in the State of Missouri were pedestrians, while only 1.1% of all federal transportation funds are spent on bicycle and pedestrian projects.

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Kansas City is the 20th most dangerous large metro area for pedestrians (between LA and Oklahoma City).

Crash Analysis

One reason to plan for better pedestrian mobility is by reducing the number of traffic accidents involving pedestrians, people will feel safer walking about their communities. Although there are many factors contributing to automobile/pedestrian accidents, they can be grouped into two areas: environmental and behavioral. The environment incorporates the physical design of our pedestrian system. Behaviors include our traffic laws and the education and

enforcement of those laws. As an example, at a recent outreach for the development of Kansas City Walkable Communities Plan, most people we talked with believe that they as pedestrians had the right-of-way when crossing a street at an intersection within a crosswalk, regardless of whether the crosswalk had any traffic control, such as a signal, stop sign or yield sign. On the contrary, Missouri gives the right-of-way to the automobile and not the pedestrian.

In Kansas City, just 89¢ per person of federal transportation funds is being spent on pedestrian safety.

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People killed by walking in Kansas City increased from 19 in 2000 to 27 in 2001.

Benefits to the Individual and Family

One major reason why individuals choose to walk is for psychological and physical health. Individuals and families can also save financial resources through reduction in motor vehicle use as well as reduced chauffeuring.

FOCUS Kansas City Plan

The City of Kansas City's Strategic and Comprehensive Plan, *FOCUS Kansas City Plan* identified the need for a connected City where all modes of transportation are provided, and the development of plans to accommodate these modes. A walkable community is critical to this goal for both pedestrian trips and transit trips, as both ends of a transit trip are walk trips.

Unsafe streets are discouraging people from walking and may be contributing to the rise in obesity.

What Is a Walkability Plan?

In simple terms, a Walkability Plan is a plan that addresses a wide-range of pedestrian issues:

- Where pedestrian demand exists;
- How good is the current pedestrians system;
- What are recommended pedestrian improvements for the community;
- How many dollars should be invested in the pedestrian network;
- How do you prioritize the limited number of dollars available; and
- What are the recommendations for changes to current codes, ordinances, standards, and policies?

Up until the last ten years, pedestrian plans or walkability plans were unfortunately non-existent in the United States other than as a possible component of an overall multimodal transportation plan. With multimodal planning efforts required through the ISTEA 1991 and a growing pedestrian safety concern, particularly in retirement areas, municipalities and other jurisdictions began expanding their pedestrian research and planning. In some communities, this led to expanded pedestrian chapters of their respective master transportation plans and in some cases a separate dedicated plan for pedestrians and walking.

Literature searches of current pedestrian plans indicate that the majority of pedestrian or walkability plans tend to include useful information regarding engineering safety applications such as placement and location of crosswalks, sidewalk treatments, and the importance of

connections. Few attempts have been made at trying to measure the pedestrian environment as to how it might operate or function, such as automobile "Level of Service."

Very limited work on measuring pedestrian demand has been done. Current and past walkability plans tend to discuss the importance of good pedestrian connections between residential areas and local shopping, but measuring pedestrian demand at the City level has been non-existent and very limited at the local neighborhood level.

Based upon a best practices literature search (Appendix A: Best Practices Pedestrian Plan Literature Review), coupled with discussions between City Planning staff and Consultant and input from the community, the following section of this report begins to provide a framework for what a Walkable Community Plan should contain. It should be noted that this plan does not necessarily reflect what has been contained in other pedestrian plans, but rather presents a much more comprehensive approach to pedestrian planning. A summary of the key elements or components for what the Kansas City Walkability Plan should contain is as follows.

The Walkability Plan Should Provide Recommendations to Improve Pedestrian Safety

Pedestrian safety is of paramount importance to Kansas City and all its municipalities. Nationally, pedestrian accidents account for 14 percent of all traffic fatalities yet pedestrian trips account for only six to seven percent of all trips. To address pedestrian safety, many jurisdictions have conducted accident analysis to identify unsafe conditions and have then proceeded to restrict or eliminate the pedestrian movement that resulted in the accident and often times a fatality. Instead of simply eliminating the accident by eliminating the pedestrian, the Kansas City Walkability Plan should provide recommendations for improving the safety of the pedestrian

The Walkability Plan Should Predict Pedestrian Demand Areas

Research has shown that throughout the United States, the walking mode has experienced decades of neglect in mainstream transportation planning practices and roadway design. As cities and towns begin the work of redeveloping their transportation systems to support walking, it has become evident that the list of needed pedestrian improvements far outstrips available dollars. To this end, planners have begun to look for ways to set priorities for making pedestrian improvements. One way to prioritize improvements is in predicting Kansas City pedestrian demand.

This automobile level of service compares the demand for a facility compared to the capacity of the system. Measuring pedestrian level of service is more a function of design, in which a system of pedestrian improvements provides citizens an opportunity to walk.

The Walkability Plans Should Provide a Systematic Way to Measure the Quality of Kansas City's Pedestrian System

Since its introduction in the 1960's, traffic engineers have used a computational method for evaluating the street and roadway system, referred to as Level of Service. However, there is no universal way to measure the pedestrian network on how it operates and functions. Europeans have developed environmental factors that affect pedestrian level of service. Five pedestrian characteristics that affect pedestrian mobility are described as follows:

- **Directness**: Making a decision to walk is highly correlated to distance and how long it takes to walk. If the sidewalk network is direct and minimizes the travel time, a person is much more likely to walk than if the route is circuitous and adds length and time to the trip. Directness is the measure of distance between destinations including home, transit stops, schools, parks, commercial areas, or activity areas. The grid street pattern has traditionally been recognized as the ideal system.

- **Continuity**: If there is not a contiguous pedestrian network between point A and B, and a pedestrian would have to walk in the street in an unsafe condition, the pedestrian trip is typically not made. Continuity is measured by the completeness of the sidewalk/walkway system and by identifying whether gaps exists. Other aspects of continuity is whether there are sidewalks along one or both sides of the street and whether there exists an overall continuity of sidewalk that provides a line of sight from block to block. As an example, if a street has the continuity of a continuous sidewalk network that is separated by a landscaped parkway, that continuity is broken with a block or segment where an attached sidewalk might be placed.

- **Street Crossings**: The Achilles heel of the pedestrian system are the intersections where pedestrians must cross. This is the area where the pedestrian must interface with automobiles, which can result in safety concerns. As streets get wider and carry higher volumes of traffic, potential use by pedestrians are avoided as safety becomes a concern. There are many factors that affect the pedestrians real and perceived comfort and safety for crossing the street, ranging from traffic control, crosswalks, number and width of travel lanes, travel speeds, and traffic volumes.

- **Visual Interest and Amenities**: Pedestrians often choose to walk or not depending on the quality of the environment. Areas that are pleasing and appealing with activities along the route are used much more than areas that are stark and uninviting. To promote pedestrian activity and use of transit, the pedestrian system needs to have a basic visual quality with basic amenities.

- **Security**: Pedestrians require a sense of security, both through visual line of sight with others and separation from vehicles. They also require well-lighted pathways and sidewalks for night use.

The Walkability Plan Should Provide Recommendations for Good Pedestrian Infrastructure Design and Implementation

For Kansas City or any other community to be as a considered walkable community, engineers and planners must think PEDESTRIAN. How do you get from A to B, what are the obstacles, and who will use it are all questions that need to be considered in how the pedestrian system is designed and built.

The Walkability Plan Should Promote Education and Enforcement

Education and enforcement are powerful tools for changing behavior. Walkers need to be aware of the risk of injury and death and use strategies that improve their safety. Motorists need to understand how they contribute to pedestrian deaths and injuries and how they can reduce the risks to people traveling on foot. For many, understanding the problem and what to do about it is enough. That is the role of education. For the others, enforcement programs are needed to drive home the message. Some drivers are simply inattentive or indifferent to others and they need a reminder to obey the rules, while a few drivers are criminally reckless and need to be arrested.

The Walkability Plan Should Promote Pedestrian Operations and Maintenance

Inadequate maintenance can result in conditions that hamper pedestrian safety and access and limit the use of pedestrian facilities. Typical problems include uneven or broken pavement, standing water, overgrown shrubs and trees, sidewalk clutter, and snow-covered walkways that aren't cleared promptly in winter. Damaged street furniture, damaged or missing signs, improperly functioning signals, and worn pavement markings can create hazardous conditions for pedestrians.

The Walkability Plan Should Identify Capital Improvement Investment Strategies and Incentive Programs

Prior to the 1990's only, a few million dollars a year of federal funds were being invested in bicycle or pedestrian facilities. While the energy crisis of the early 1970's had spawned new interest and some modest government initiatives to make improvements for bicycling, very little money from the government at any level was invested in bicycle and pedestrian facilities. Likewise, the outdoor recreation industry and business community in general provided very little funding for facilities, planning, programs, or organizational development. Throughout the late 1970's and 1980's the largest amounts of funds for walking were invested by state and local park agencies building multi-use trails, however even these levels of investment were very small compared to what is happening today. The question that needs to be asked of Kansas City is how much funding should be provided for pedestrian improvements and which improvements should be prioritized. This question needs to be asked in context of other competing needs of the community and its priorities.

Barriers On Why We Don't Walk

"For the past half century, we have continued to increase dependency on the automobile."

-FOCUS Kansas City Plan

In order to plan for walkability, it is important to consider what factors contribute to travelers' decisions not to walk to local destinations. Some decisions involve physical impediments, such as an incomplete sidewalk network, that prevent pedestrians from being able to complete their trips. Other decisions involve perceptions, such as personal safety while walking at night. These factors are all barriers to pedestrians.

Barriers to pedestrian activities can occur in any neighborhood in any city. Barriers can arise from oversight, budget constraints, or natural physical conditions regardless of the age, location, or layout of an area. Solutions to pedestrian barriers may include planning, design, maintenance, and altering the perceptions of pedestrians or potential pedestrians. The following are types of barriers that can contribute to a person's decision to walk or not to walk.

Sidewalk Conditions

"Wide, high speed streets without sidewalks and few crosswalks increases the dangers faced by walkers."

-Surface Transportation Policy Project

The character of the sidewalk to be used by a pedestrian affects his or her decision to walk. Sidewalks that are not properly planned, designed, constructed, or maintained are less likely to encourage pedestrian activity. Most sidewalk-specific issues can be corrected with planning, construction, or maintenance. Poor sidewalk conditions can be experienced in several ways such as:

- Uneven sidewalk surfaces (examples include: pavement segments that are not level, heave from frost or tree roots, poorly designed driveway cuts, tree grates not level with the walking surface, and substandard or unmatched paving materials);
- Sidewalk pavement poor condition;
- Sidewalks that is too narrow (precludes two or more persons walking together, or prevents wheelchair access); and
- Gaps in sidewalks or discontinuous sidewalks.

Physical Obstacles

The landscape through which pedestrians must travel can affect their decision to walk. Routes that cause pedestrians to climb steep slopes, encounter interstate highways, or include poor design may preclude pedestrian use. Some physical obstacles are unavoidable, while others can be addressed with planning or maintenance.

Physical obstacles comprise several elements such as:

- Landscape topography (too steep, river crossings);
- Transportation features (highways or arterials without signalized intersections, railroads);
- Obstacles on sidewalks (phone poles, fire hydrants, café seating);
- Objects encroaching the sidewalk (vegetation overgrowth);

- Features that shield or block pedestrians from drivers view (objects such as signs, bushes, or large planters); and
- Misuse of sidewalks (parked cars blocking pedestrians).

Low Density and Sprawling Development

As Kansas City grows, the density and intensity of uses has decreased. Destinations have increased in distance, limiting the number of opportunities to walk.

Separation of Uses

Through zoning and other land use codes and ordinances that have evolved over the decades, land use patters have occurred, which separate places of where one may live from locations of employment, shopping, and recreation.

Site Planning

The era of a grid street system has been replaced with curvilinear streets and cul-de-sacs. With this change, direct connections, which are critical to the pedestrian, has been lost and overlooked. Walls and fences further exacerbate the problem in separating activities and uses.

Intersections and Crosswalks

The most common setting for pedestrian-vehicle interaction is at intersections, particularly signalized intersections. Lack of street crossings, or inadequately designed intersections, affect pedestrian activity. Eliminating barriers at intersections can often be achieved with design improvements. Barriers at intersections can be encountered in several forms such as:

As the number and width of lanes increases, the pedestrian must take more time to cross the street and is exposed for a longer period of time to potential danger. In addition, the greater the number of lanes tends to reflect automobile traffic volumes, which increase the amount of conflicts that will occur;

- No crosswalk signals, or insufficient time to cross the street;
- No islands or medians (especially at wider or higher-volume streets);
- Uneven curbs or no curb ramps;
- Pavement treatments (decorative treatments may confuse drivers, or may deter visually impaired pedestrians);
- Heavy turning volume that deters pedestrian crossing (especially heavy right-turn movements, that can occur on red lights); and
- Discontinuous walking route through intersection (curb cuts that occur at different locations within an intersection).

Personal Well-Being

Most pedestrians will avoid settings in which they feel threatened. Real or perceived, compromising personal well-being will deter pedestrian activity. Improved design, more visible law enforcement, or educational programs might remove these types of barriers. Personal health barriers include:

- Safety (from motorists—speed and volume—bicyclists or rollerbladers, publicized history of crashes);
- Security (lighting, high crime area, excessive graffiti, emergency telephone availability);
- Health (odors, carbon monoxide levels or exhaust inhalation on very busy streets);
- Designs not favorable for visually impaired pedestrians (no curb cuts, unfamiliar pavement treatments, lack of audible crossing signals); and
- Designs not accessible for disabled pedestrians (pavement treatments, no curb cuts, inadequate crossing time).

Personal Preference

Barriers to pedestrian activity may be based on perceptions rather than physical obstacles. Sidewalk networks that are complete and well maintained will not be heavily used if interesting destinations are lacking, or if distances are perceived as too great. Some personal preference barriers can be eliminated with local planning, economic development, or sometime public awareness or educational campaigns. Some personal preference barriers include:

- Distance between origin and destination, or lack of destinations in neighborhoods;
- Amenities and ambience (visually interesting setting, occasional seating, rest rooms, trash receptacles, drinking fountains, bike parking); and
- Convenience (linkages transit or other non-motorized modes).

Temporary Barriers

Some pedestrian barriers will disappear with time. Temporary barriers may include seasonal factors that are weather-related, or could be related to construction activities. Some temporary barriers can be avoided with detours or improved planning, while others require more patience. Temporary barriers may be comprised of the following:

- Weather impacts (sidewalk or curb flooding, poor drainage, low or encroaching branches on trees, drifts of tree leaves or snow, cold temperatures, wind exposure); and
- Construction (equipment/signs in sidewalks, eliminated sidewalks).

Who Cares?

If Kansas City continues to become more automobile-oriented, does anybody care if we have a walkable community? The answer is a definitive yes. *FOCUS* became a major turning point in how important a connected multimodal community is to Kansas City. Public input,

workshops, and community meetings indicated loud and clear that preserving and improving the pedestrian quality of life is critical to the long-term goals and vision for Kansas City.

This confirmation became even more evident through input from the Kansas City Walkable Community public meetings, neighborhood assessments, neighborhood walkability surveys, and the direction by City Council, the City Manager's Office, the Departments of Planning and Development, and Public Works.

Kansas City cares!

Highlights of Report (Summary of Chapter Contents)

The following Kansas City Walkability Plan is both comprehensive and innovative. The plan attempts to address all aspects of what will make a Walkable city. The plan also provides ideas and concepts for determining demand and needs, evaluating the pedestrian network, and creative new approaches that are cutting edge. The plan is also intended to be a living document where changes are and should be expected as the City and its Departments of Planning and Development and Public Works implements the plan and determines what works and what does not work.

This report is divided into six chapters plus supportive technical appendices. These chapters are summarized as follows:

I. **Introduction**: Background on why the plan is being prepared, what a Walkable Community is, what are the plan benefits, and reasons on why we do not currently walk.

II. **Measuring Walkability: Tools and Assessment**: This chapter introduces the concept of Pedestrian Level of Service Analysis for measuring the pedestrian system and presents a method for how neighborhoods can conduct their own self-evaluation of their pedestrian system. This chapter also presents methodologies on how and where these tools should be used. Recognizing the fact that one size does not fit all, this section identifies recommended standards for different area types within the city.

III. **Establishing Citywide Walkability Priorities: Demand vs. Facilities**: This chapter looks at Kansas City from a macro perspective. A question such as where is their current pedestrian demand, what facilities exist, and an overall broad scale assessment of pedestrian needs, including some ideas on how to prioritize these improvements.

IV. **Pedestrian Zone Case Study Evaluations**: Kansas City is blessed to have a number of recognized and popular pedestrian districts. This chapter looks in greater detail at what is good about these areas and what additional pedestrian improvements should be considered for these areas.

V. **Plans, Standards, Codes, Policy and Capital Improvement Program Recommendations – Applications**: One important factor that has evolved through this process is the importance of changing how things are done in the future. Whereas it is difficult to retrofit an area where pedestrian improvements must be accommodated, it is much easier to do things right in the future. This section therefore recommends changes for how public improvements and private developments should be planned for from this point forward.

VI. **Implementation**: The major question that arises with a plan similar to the Kansas City Walkability Plan is how is it implemented. This chapter presents the priorities for implementation of the Kansas City Walkability Plan.

In addition to the following Chapters, this report contains the following technical appendices.

Appendix A – Best Practices Pedestrian Plan Literature Review
Appendix B – Neighborhood Walking Survey
Appendix C – Pedestrian Level of Service Analysis Methodology and Procedures for Development Proposals
Appendix D – Maple Park Case Study

II. Measuring Walkability: Tools and Assessment

In order to determine what pedestrian improvements might be needed for the City of Kansas City, it becomes necessary to identify methods for evaluating both the pedestrian system and the demand for the pedestrian system. It is also important to recognize that when measuring the pedestrian system, different techniques are required for different levels of analysis. As an example, measuring the pedestrian environment at the citywide level is different than measuring the pedestrian system at the neighborhood or Pedestrian District Level. These methods are also different than how one might evaluate a public improvement project or a private development proposal.

In general, all methods consider five basic pedestrian levels of service measurements. Level of service is a measurement used in transportation to depict how well the transportation mode operates. Traditionally, automobile level of service is a measurement of delay ranging from A to F where A is excellent and F is failure. The five pedestrian level of service measures are as follows:

- **Directness** – does the network provide the shortest possible route?
- **Continuity** – is the network free from gaps and barriers?
- **Street Crossings** – can the pedestrian safely cross streets?
- **Visual Interest and Amenities** – is the environment attractive and comfortable?
- **Security** – is the environment secure and well lighted with good line of sight to see the pedestrian?

Whereas the method for determining pedestrian level of service should be applied consistently throughout the City, the minimum standard or threshold for a given area or

development type is different. As an example, the pedestrian needs of a mixed-use activity center are different than a school or pedestrian access to a transit stop.

Pedestrian Level of Service Requirements by Pedestrian Area Type

Area Type	Directness	Continuity	Street Crossings	Visual Interest & Amenity	Security
Pedestrian Zones, Great Pedestrian Streets	A	A	B	B	B
Mixed Use & Transportation Centers, Transit Zones	A	B	B	B	B
Neighborhood Activity Centers & Corridors	B	B	C	B	B
Schools/Parks	C	B	B	C	B
Walking To/From Transit	B	C	C	C	B
Other Areas Within City	C	C	C	C	C

To this end, target pedestrian level of service standards by area type and measurement have been established based on input from City of Kansas City Departments of Planning and Development and Public Works, public input, and professional practice. These targets recognize that the level of standards for some areas of the city like pedestrian districts, mixed use activity areas, and neighborhood centers require higher levels of standards than might be required for an outlying residential area that is not within close proximity to a pedestrian destination such as a commercial center, school, or park.

These pedestrian levels of service targets also recognize that special pedestrian destinations such as schools or parks have special needs and therefore different targets. In general, the targets have been developed in recognition that one size does not fit all and to minimize undue burden for all areas needed to achieve the highest target. Some of the area types presented in the following table are currently defined in current City Planning documents such as the *FOCUS Kansas City Plan*. Others will need to be defined as part of the assessment process and reviewed by the Department of Planning and Development.

The following table highlights the purpose and general methodology for evaluating pedestrian level of service at the citywide, community, neighborhood, and project level.

	Citywide	Community	Neighborhood	Project
Purpose	Macro level assessment of walkability by area	General assessment of pedestrian system within a planning area	Neighborhood based needs assessment (what they most want)	Site specific assessment prior to construction
Directness	Presence of sidewalks throughout area	Fabric of the transportation system within the community (i.e., grid/ curvilinear and directness of connections to activity areas)	Directness to where you want to walk to	Actual walk time compared to minimum walk time characterized by a grid
Continuity	Total length of sidewalks divided by length of streets	Character or theme of the pedestrian network (attached/ detached, landscaping)	Completeness of pedestrian sidewalk system to get there	Completeness of pedestrian system and integration with the project and surrounding uses
Street Crossing	Number and size (lanes) of arterials within an area	Frequency of protected crosswalks and mid-block crossing	Major arterials that are difficult to cross	Number of lanes to cross plus pedestrian crossing features
Visual Interest & Amenity	City perspective of visually attractive areas from public input	General level of landscape/ hardscaped, aesthetic design of corridors	Pedestrian scale, friendly	Presence o landscape/hardscape, parkways, medians, street lights
Security	Relationship between violent crime and population and employment density	Line of site to transit stops	Visual line of sight and street lighting	Visual line of sight and street lighting

The purpose of this chapter is to present different methods of measuring walkability from which to compare the results of the assessment with the above targets. These pedestrian measurement levels of service techniques are presented from the macro City scale down to the project specific scale and include:

- **Citywide Walkability Measurements and Assessment**: Utilizing City wide Geographic Information System (GIS) data for addressing the current state of walkability within the City of Kansas City.

- **Community Level Walkability Assessment**: This section provides guidance on how City Planning and Development, and Public Works staff should consider measuring walkability and includes walkability concepts in the planning of public improvements within pedestrian districts, neighborhoods, and overall planning efforts.

- **Neighborhood Walkability Self-Assessment**: This section introduces a neighborhoods self-assessment of their community to determine what works and what does not work with an emphasis on neighborhood determination of needs and priorities.

- **Project Pedestrian Level of Service Analysis**: This section presents a detailed methodology for preparing public improvement and private development pedestrian levels of service for the five pedestrian measurements: directness, continuity, street crossing, visual interest and amenities, and security.

Citywide Walkability Measurement and Assessment

The Citywide Walkability Assessment is intended to provide the City Council, City Boards and Commissions, City Plan Commission, and Public Improvements Advisory Committee with an overview of walkability by areas within the City. This macro level assessment is not intended to identify specific walkability problems nor improvements. Because the City has developed a significant GIS database, this information was used to evaluate citywide walkability. The following sections describe the GIS concepts to address the five (5) pedestrian measurement types and to provide an assessment of these measurements.

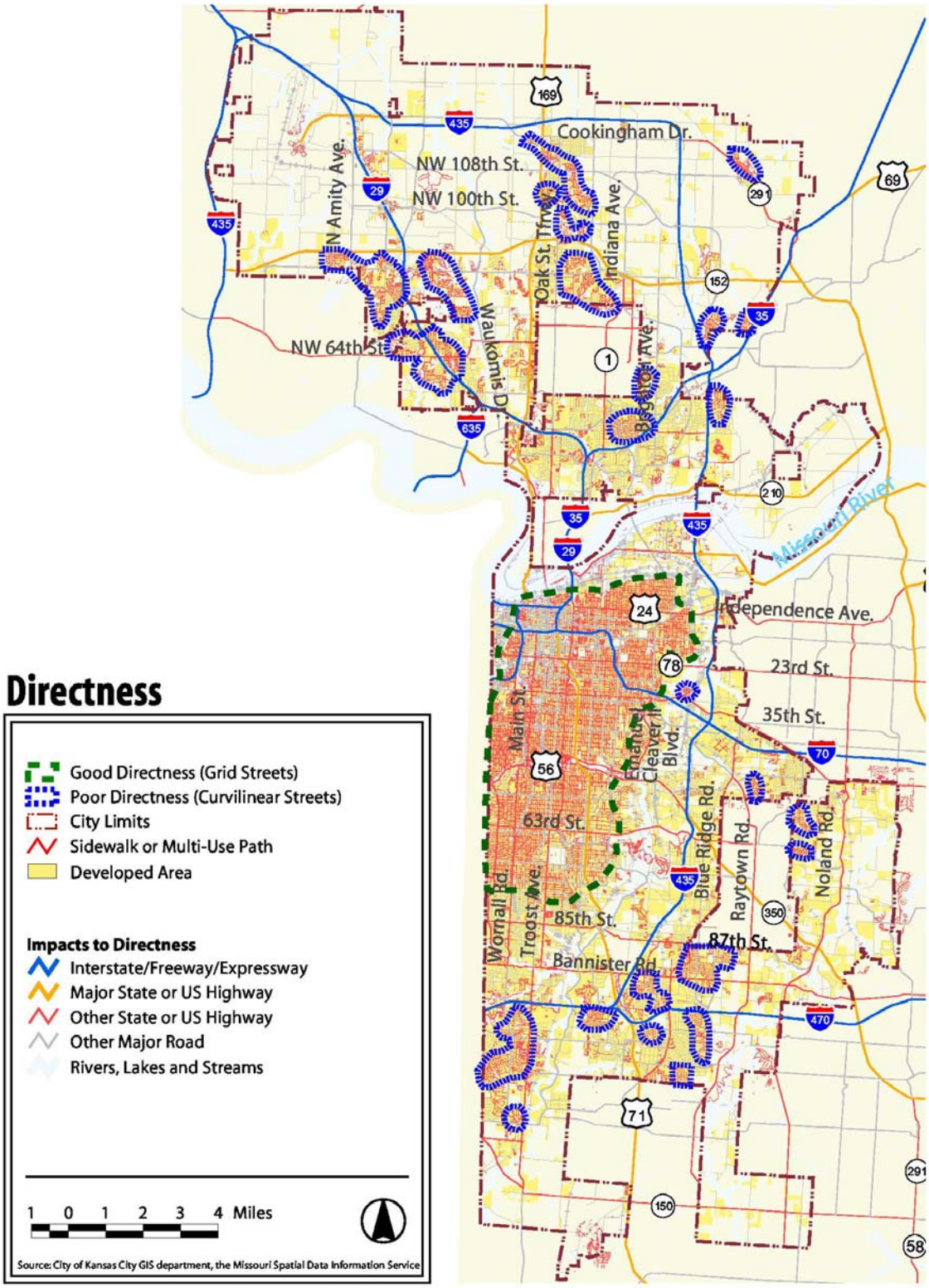
Directness

The directness measure represents the actual pedestrian distance from trip origin to destination. Since pedestrian trips are highly dependent on trip length, the pedestrian infrastructures ability to provide the shortest and most direct route is critical. This fact is easily observed on college campuses and in parks where the most direct route is often worn into the landscape, despite the lack of paving. The ideal pedestrian network is the grid system, since curvilinear street patterns add additional distance to the potential trip.

A citywide measurement of directness is whether an area of the City currently has sidewalks and what is the fabric of those sidewalks. The City of Kansas City is fortunate to have prepared a GIS database of all public sidewalks within the City. In actuality, this database is quite detailed, showing where breaks in the sidewalks are and actually shows where driveways cross them along a given street. It should be noted that this sidewalk layer was based on interpretation from aerials and as such does not identify all sidewalks, particularly those near taller buildings that block the aerial view of the sidewalk. This is particularly evident in the downtown area. In addition, the City has obstacles such as freeways and waterways that affect the directness of being able to walk from point to point.

By overlaying the sidewalk database on top of the City's developed areas, along with the freeway and waterway database layers, it is possible to begin to see where sidewalks are available for residents to walk and where they do not exist. These overlays provides for a reasonable assessment of directness for the City. The Directness Map for the City of Kansas City depicts locations that have sidewalks. In general, directness falls into one of three categories within the City:

- **Central Business Corridor and Urban Core** – This area provides for a detailed grid street network accompanying sidewalk.
- **Remaining City** – The areas reflect portions of the City that were developed at a time when sidewalks were not required, resulting in no directness.
- **Current Developments** – These areas reflect recent requirements to provide sidewalks, however, subdivision street design standards permit circuitous and curvilinear sidewalks resulting in poor pedestrian directness.


Directness
Good Directness (Grid Streets)
Poor Directness (Curvilinear Streets)
City Limits
Sidewalk or Multi-Use Path
Developed Area
Impacts to Directness
Interstate/Freeway/Expressway
Major State or US Highway
Other State or US Highway
Other Major Road
Rivers, Lakes and Streams
1 0 1 2 3 4 Miles
Source: City of Kansas City GIS department, the Missouri Spatial Data Information Service
Cookingham Dr.
NW 108th St.
NW 100th St.
NW 64th St.
N Amity Ave.
Oak St. Trfwy
Indiana Ave.
Wauconsia Dr.
Bristol Ave.
Missouri River
Independence Ave.
23rd St.
35th St.
Main St.
Chanute
Cleaver II Blvd.
63rd St.
Blue Ridge Rd.
Raytown Rd.
Noland Rd.
Wornall Rd.
Troost Ave.
85th St.
87th St.
Bannister Rd.

In reviewing the freeway system, it is very noticeable that they divide the community and restrict direct connections between one another except at a limited number of street over/under crossings. This barrier is particularly a problem in the urban core where numerous freeways intersect and in the emerging developments in the Northland. Whereas the waterways similarly separate areas, the environmental attractiveness of these facilities provide for linear pedestrian linkages that can accommodate direct connections to adjoining development.

Continuity

Continuity measures the completeness of the pedestrian system. A continuous sidewalk system not only allows the pedestrian to make an uninterrupted trip, it may also be required for a stroller or wheelchair user to utilize the sidewalks. Gaps in continuity can come in the form of missing segments, broken or overgrown vegetation, or physical barriers such as freeways, rivers, or fences.

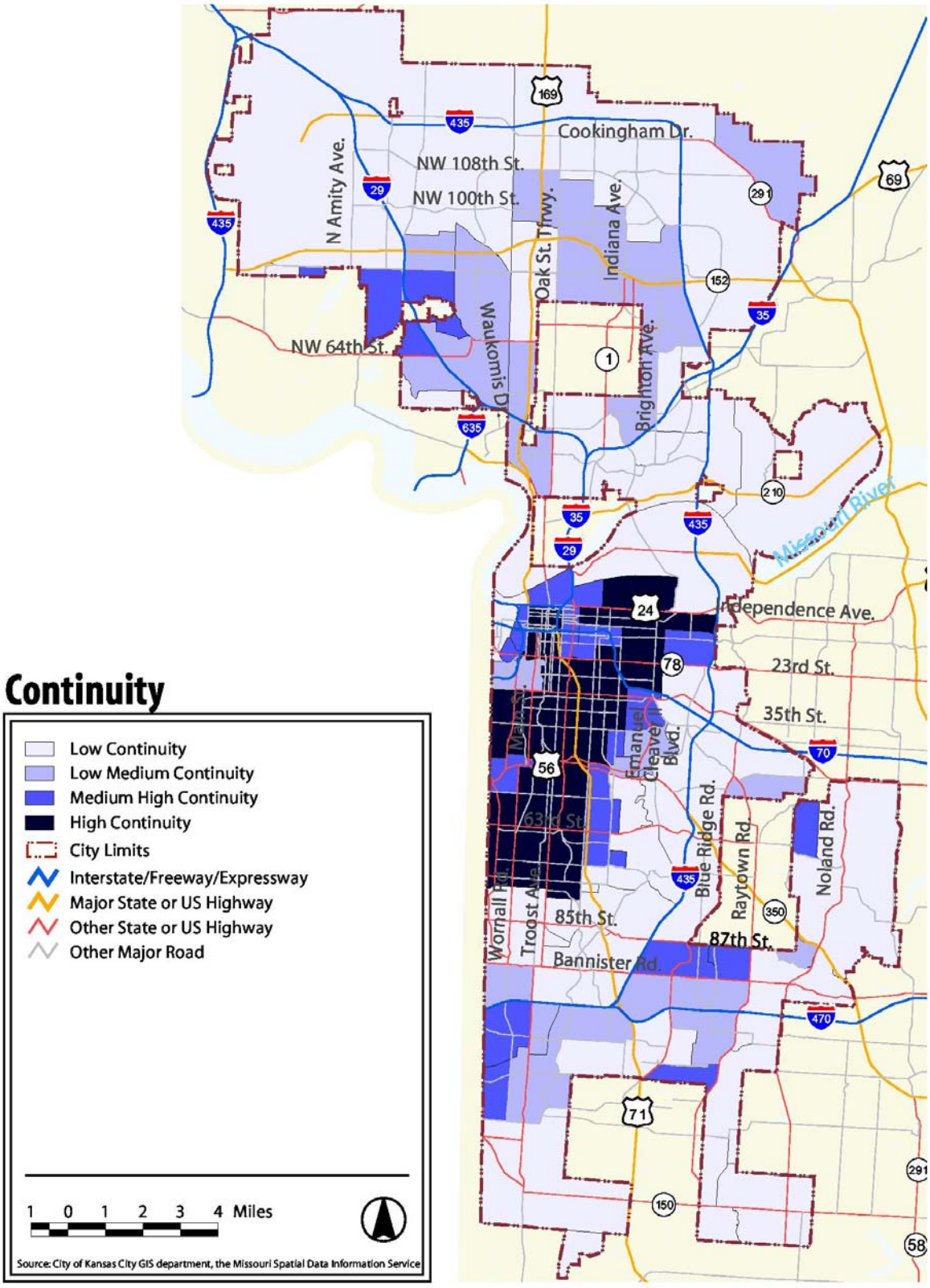
If the optimum measure of continuity of the sidewalk system is to have a sidewalk on every street, it is possible to compare the total length of sidewalks within a geographic area with the total length of streets within the area. This assessment would utilize the GIS sidewalk overlay with the City's street centerline file. By dividing the length of sidewalks for an area by the length of street, a ratio can be used to measure the continuity, where a value of two (sidewalks on both sides of all streets) to zero, where no sidewalks exist at all.

An assessment of the City of Kansas City's Sidewalk Continuity is presented in the Continuity Map. Similar to the measure of directness, the Kansas City's Central Business Corridor tends to have a complete sidewalks system to accommodate the City's pedestrians. Outside this corridor, the completeness of the sidewalks system is moderate to minimal. With recent changes to the subdivision standards and zoning ordinances requiring sidewalks on all streets, the completeness of the pedestrian network will improve in new areas. Retrofitting sidewalks in the built environment will be costly and difficult to achieve.

Street Crossings

Major arterial roadways can significantly impact a pedestrian's safety in crossing a street. The ability to safely cross a street is a function of the following:

- The number of lanes and the widths of the lanes to cross;
- The presence of a raised median or refuge island;
- The presence of a crosswalk;
- Use of a pedestrian actuated signal or dedicated pedestrian phase for crossing;
- Clear sight lines from motorists to pedestrians;
- Directional corner ramps; and
- Street lighting.


Continuity
Low Continuity
Low Medium Continuity
Medium High Continuity
High Continuity
City Limits
Interstate/Freeway/Expressway
Major State or US Highway
Other State or US Highway
Other Major Road
1 0 1 2 3 4 Miles
Source: City of Kansas City GIS department, the Missouri Spatial Data Information Service
Cookingham Dr.
NW 108th St.
NW 100th St.
NW 64th St.
N Amity Ave.
Oak St. Trfwy.
Indiana Ave.
Waukomis Dr.
Brighton Ave.
Missouri River
Independence Ave.
23rd St.
35th St.
63rd St.
85th St.
87th St.
Bannister Rd.
Blue Ridge Rd.
Raytown Rd.
Noland Rd.
Troost Ave.
Wornall Rd.
Emanuel Cleaver II Blvd.
Paseo
169
435
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635
210
24
78
56
70
470
71
350
150
58

The City has developed a GIS overlay of the street hierarchy, from major streets down to local streets. Whereas this overlay does not specifically identify the number of lanes for neither a given facility nor the amount of traffic, it does provide an indication of potential street crossing conflicts. This assessment does require some interpretation through knowledge of the area.

This street hierarchy is presented in the Street Crossings Map. In general, the City's grid system in the urban core area to the Plaza was built on an effective grid system that provides for multiple routes and minimizes the need of one facility carrying an inordinate amount of traffic as compared to another facility. Instead, a grid street system allows traffic to direct to multiple streets and not just one facility. Therefore, the actual street widths for a roadway within the Central Business Corridor tends to be narrower with less traffic and speeds than a similar designated roadway in an outlying area. However, the development and construction of new facilities in emerging development areas without parallel alternatives is problematic for pedestrians. As an example of the newer roadways being constructed, Barry Road poses major crossing issues. These issues include the fact that the locations where a pedestrian can cross is limited to only signalized intersections and even at these signalized intersections, the pedestrian must negotiate multiple through, left, and right turn lanes to get across. Additional pedestrian friendly amenities to offset these multiple lanes would be beneficial for the pedestrian.

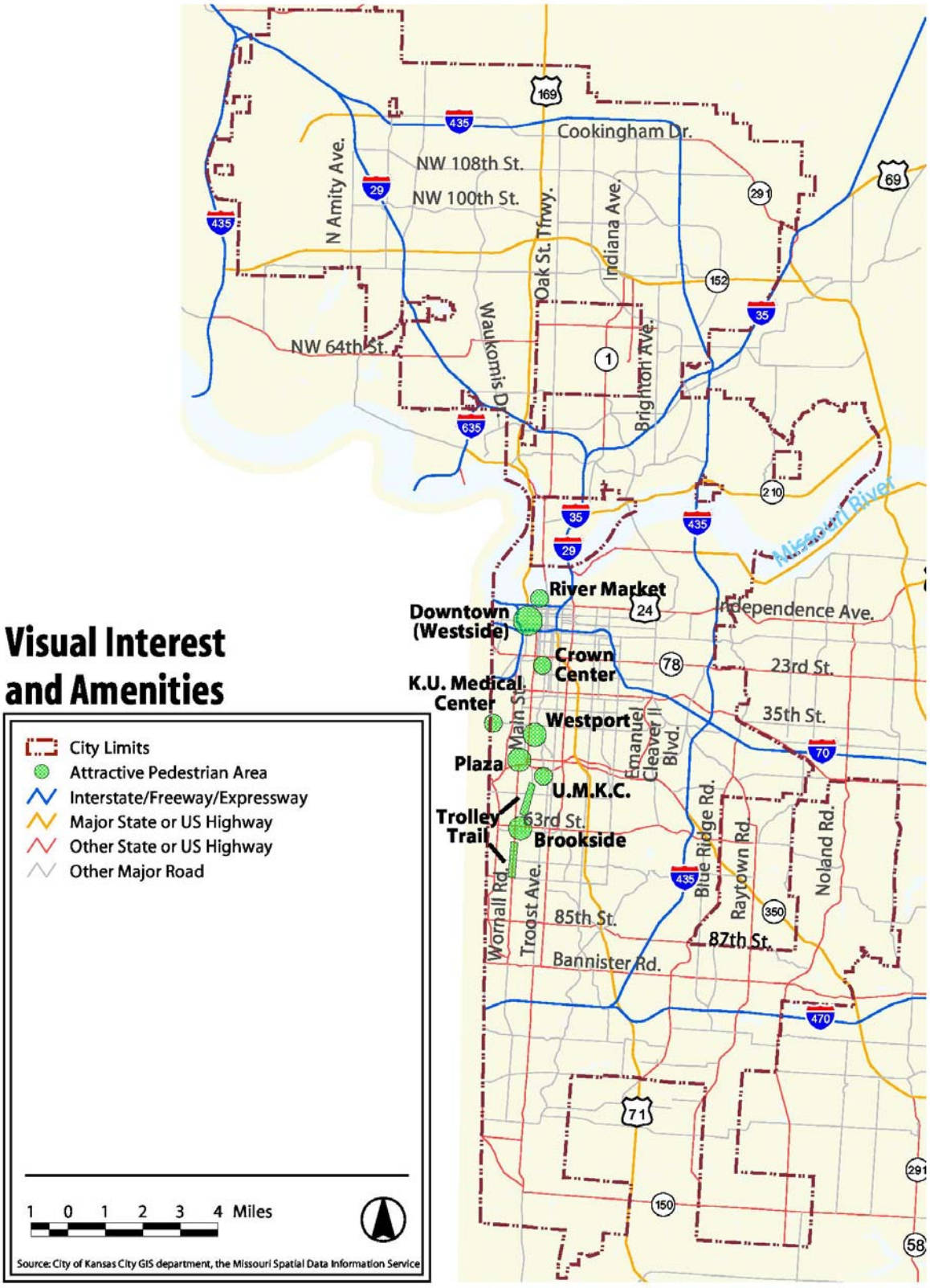
Visual Interest and Amenity

This measure of the pedestrian system's attractiveness and appeal is the most difficult to quantify and compare, and the most likely to change as the area matures. The areas initially identified were augmented at the first community meeting and will most likely grow and develop over the course of the project. Some aspects of this measure are related to facilities that enhance the comfort of the user. These include elements such as shade trees, street lighting, and benches that may be particularly important to pedestrians with mobility or visual impairments. Other elements are important to the visual appeal such as landscaping, planter boxes, trash receptacles, and public art.

The City does not collect specific data for determining the quality of the environment from an aesthetics or amenity level, however, input from public workshops have identified locations that they believe meet the quality and standards the City desires. Some of these areas are identified on the Visual Interest and Amenities Map. Fortunately, the City of Kansas City has some wonderful examples of areas that provide excellent visual interest and amenity. Nationally renown centers such as the Plaza top the list. Westport and Brookside are also great examples to replicate. Pathways along the Trolley Track Trail, River Market, Crown Center, the westside of downtown, K.U. Medical Center and UMKC are all areas with rich visual interests and amenities.

It should be noted that there are many other wonderful examples of quality visual interest and amenity and that the overall City map could be expanded and refined. The objective, however, is to identify from a City perspective where these quality areas are, so that as new development and activity centers are built, they can consider the characteristics of these areas in hopes of providing new attractive areas the City and its residents can be proud of.


Street Crossings
City Limits
Interstate/Freeway/Expressway
Major State or US Highway
Other State or US Highway
Other Major Road
1 0 1 2 3 4 Miles
Source: City of Kansas City GIS department, the Missouri Spatial Data Information Service
Cookingham Dr.
NW 108th St.
NW 100th St.
NW 64th St.
N Amity Ave.
Oak St. Tfrwy.
Indiana Ave.
Waukomis Dr.
Brighton Ave.
Missouri River
Independence Ave.
23rd St.
35th St.
63rd St.
85th St.
87th St.
Bannister Rd.
Main St.
Emanuel Cleaver II Blvd.
Blue Ridge Rd.
Raytown Rd.
Noland Rd.
Wornall Rd.
Troost Ave.


Visual Interest and Amenities
City Limits
Attractive Pedestrian Area
Interstate/Freeway/Expressway
Major State or US Highway
Other State or US Highway
Other Major Road
1 0 1 2 3 4 Miles
Source: City of Kansas City GIS department, the Missouri Spatial Data Information Service
Cookingham Dr.
NW 108th St.
NW 100th St.
NW 64th St.
N Amity Ave.
Oak St. Tfrwy.
Indiana Ave.
Waukomis Dr.
Brighton Ave.
Missouri River
Independence Ave.
23rd St.
35th St.
River Market
Downtown (Westside)
Crown Center
K.U. Medical Center
Westport
Plaza
U.M.K.C.
Trolley Trail
63rd St.
Brookside
Main St.
Emanuel Cleaver II Blvd.
Blue Ridge Rd.
Raytown Rd.
Noland Rd.
Wornall Rd.
Troost Ave.
85th St.
87th St.
Bannister Rd.

Pedestrian Security

The pedestrian environment must feel like a safe place for people to walk. The key pedestrian security facility element is whether the pedestrian is clearly visible to other pedestrians or activities. Whereas this measurement is not possible at a citywide level, as this type of data is not available, one can begin to identify areas where security might be an issue. This becomes more important when conducting detailed neighborhood or development assessments. One such surrogate of pedestrian security is the ratio of violent crime to the area's combined population plus employment. The idea is that whereas the history and frequency of personal crime in a given area is a factor, these statistics must be normalized to the amount of activities within an area.

The total number of violent crime events between 1998 and 2000 for the City were compiled and then normalized by the sum of the population and employment. This measure was in an effort to recognize that even though more crimes may occur in a high-density employment and population center, the vast majority of the people in that tract may never be directly affected.

As can be seen in the accompanying Pedestrian Security Map, the vast majority of Kansas City has a relatively low amount of crime for its population and employment. In general, the higher crime rates appear in the center of the city, east of the downtown area. It should be noted that in some areas, such as in the Northland, the population and employment figures are too low to conclusively identify security problems

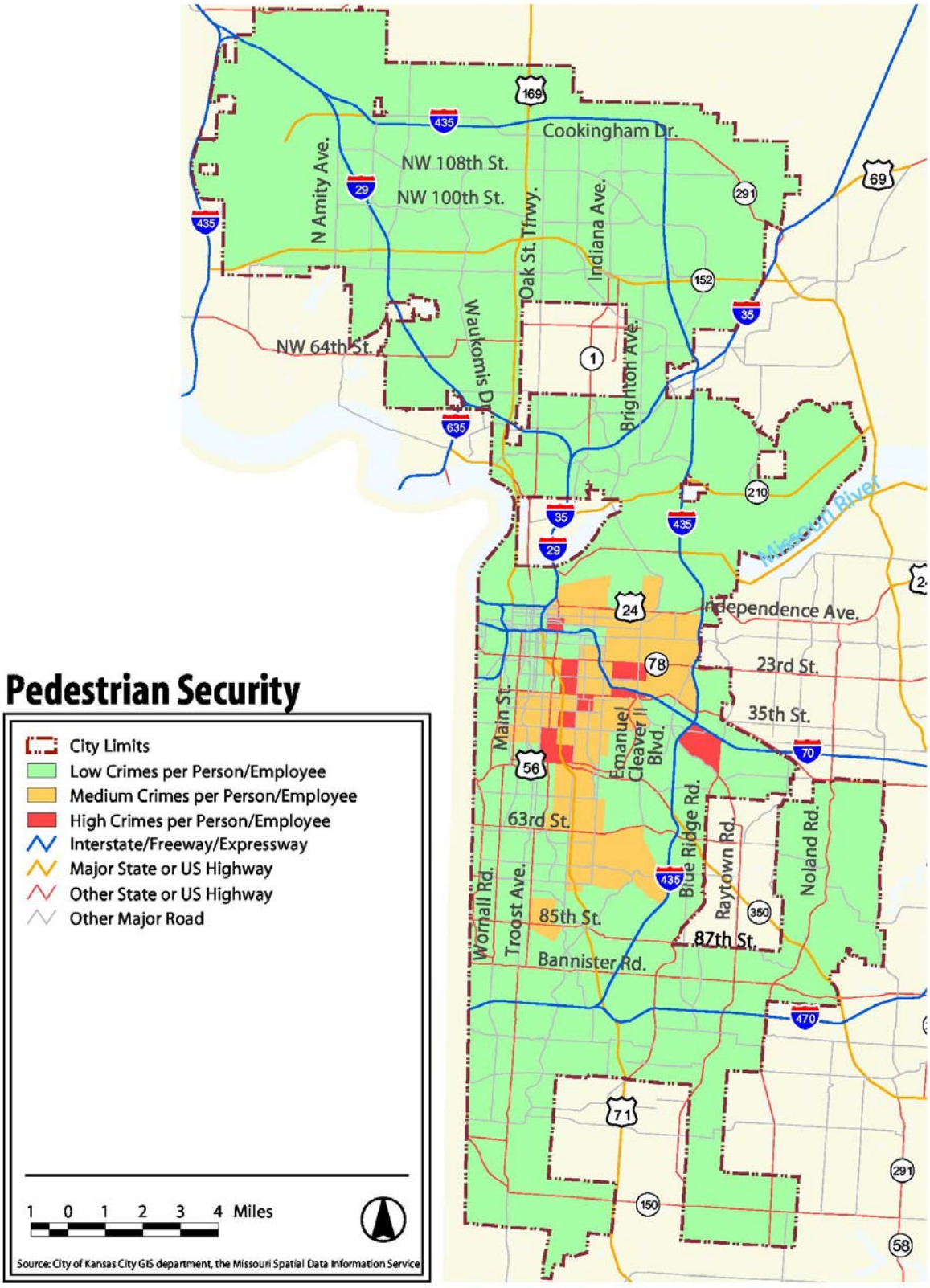
The number of violent crimes per person or employee in a given area still represents a simplification of the pedestrian's sense of security. You may feel very safe in your own neighborhood at night because you are familiar with it and know many of your neighbors, but someone else walking in your neighborhood may not. In this area, the neighborhood assessments will provide a clearer picture of the specific security needs that is more sensitive to the neighborhood residents and their particular perspective.

Community Level Walkability Assessment

Whereas, the City Wide Walkability Assessment tools have some applicability for evaluating a community plan or assessing larger development area, such as a pedestrian district, additional scrutiny needs to be give this additional level of assessment. In general, the Planning Level Walkability Assessment requires field review and a closer examination of where pedestrians might want to walk to or walk from. The intent of this section is to highlight some of the additional work efforts that might be required for addressing the five pedestrian levels of service measurements at the community level.

Directness

The fabric of the pedestrian network must be more detailed at the district or community planning level. At this level, one can better identify the street structure as to whether a natural grid is provided where there are many opportunities for different and direct routes, or whether the area is evolving along arterials with subdivisions and streets that require all trips, including pedestrian trips to first travel to the arterial and then to their destination. In such cases identifying pedestrian connections, such as between cul-de-sacs or between subdivisions should be explored to reduce distances and improve directness.


Pedestrian Security
City Limits
Low Crimes per Person/Employee
Medium Crimes per Person/Employee
High Crimes per Person/Employee
Interstate/Freeway/Expressway
Major State or US Highway
Other State or US Highway
Other Major Road
1 0 1 2 3 4 Miles
Source: City of Kansas City GIS department, the Missouri Spatial Data Information Service
Cookingham Dr.
NW 108th St.
NW 100th St.
NW 64th St.
N Amity Ave.
Oak St. Tfrwy.
Indiana Ave.
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Missouri River
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Main St.
Emanuel Cleaver II Blvd.
63rd St.
Blue Ridge Rd.
Raytown Rd.
Noland Rd.
Wornall Rd.
Troost Ave.
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Barriers to directness is much more evident at the district or community plan level. Major barriers to look for and target for mitigations might be freeways, major arterials, ravines, or waterways. In review of the area, the planners and engineers should look at where there might be pedestrian trip interchanges that are not being provided for and identify solutions. This might be a residential neighborhood within ¼ to ½ mile from a commercial center, park or school that does not have a pedestrian connection. Another barrier that is often encountered is the back of activities, such as commercial centers that have walls, which preclude pedestrian access.

Continuity

Continuity at the planning area or district level is not just whether the sidewalks system is complete, although that is an important element, but in addition, the assessment is to determine if there is a theme or character of the pedestrian network. As an example, if a corridor provides for a separated sidewalk from an adjoining street with a landscaped parkway, then continuation of that theme should be carried through the district.

Special attention to continuity should be given to pedestrian districts, mixed use centers and neighborhood centers to assure the sidewalks system is well integrated to the uses front doors. This might include changes to the subdivision and development plans to move the uses to the front of the parcel where pedestrian and transit is accessible to the uses rather than requiring the pedestrian to walk across a vast parking lot.

Street Crossings

As the City plans for future development, special attention needs to be given to the arterial street system so that there exists a balance between moving automobiles and allowing the pedestrian to cross these streets safely and comfortably. Typically, these streets are designed along corridors and if these corridors do not have intervening parallel opportunities, characteristic of a grid system, then all traffic must use the limited number of corridors, which will result in higher traffic volumes and wider and faster streets, which are not conducive to pedestrian mobility.

As one reviews a planning area and district, focus should be given to the primary routes and the character of these routes. As an example if the intersections are widely spaced, then the ability for a pedestrian to cross this facility is limited. Ideally in a mixed-use center the spacing for intersecting streets should be 400 feet and no more than 700 feet.

Visual Interest and Amenity

In general, all planning areas or districts have a major roadway or multiple roadways that traverse the area. Often these facilities define the character and act as a gateway. An area to consider is whether these facilities are attractive and inviting. Elements to consider include landscaped or hardscaped tree line parkways that separate the pedestrian sidewalk network from the street, raised landscaped medians, pedestrian directed street lights, and amenities such as benches, trash receptacles and bus shelters.

Facades and building activity are also areas to examine and consider. Do the primary routes provide for interesting line of sight visual connections? Is the corridor lined with an unappealing privacy fence or wall?

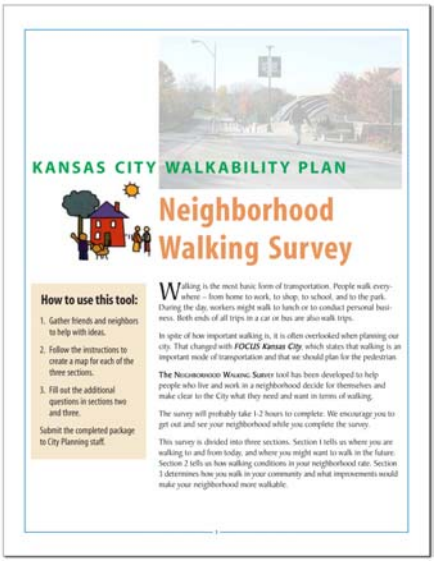
Security

Elements to consider for security within the planning area and districts includes a design that promotes good visual line of sight of the pedestrian network from vehicles, uses along the streets and corridors, and is there adequate street lighting. Special attention should be given to routes to and from transit stops and at the stops themselves. If the area is known to have security issues or problems, identify physical improvements that might address some of these issues.

Neighborhood Walkability Self-Assessment

As we step down from the macro city level to the neighborhood level, methods for evaluating the five pedestrian levels of service elements of directness, continuity, street crossings, visual interest and amenity, and security changes. At this level the day-to-day needs and desires of the community come to life and require a different approach. One major difference is involving the neighborhood to examine, comment and recommend improvements that would address their issues.

To this end, a "Neighborhood Walking Survey" was developed for residents to evaluate their pedestrian needs and environment, to convey to the City their needs and priorities for a more walkable neighborhood. (A copy of this complete survey is contained in Appendix B.) The survey was designed to step thorough a series of question that would logically take members of the neighborhood through a thorough process that would ultimately lead to providing ideas and recommendations for improvement.


KANSAS CITY WALKABILITY PLAN

Neighborhood Walking Survey

How to use this tool:

1. Gather friends and neighbors to help with ideas.
2. Follow the instructions to create a map for each of the three sections.
3. Fill out the additional questions in sections two and three.

Submit the completed package to City Planning staff.

Walking is the most basic form of transportation. People walk everywhere – from home to work, to shop, to school, and to the park. During the day, workers might walk to lunch or to conduct personal business. Both ends of all trips in a car or bus are also walk trips.

In spite of how important walking is, it is often overlooked when planning our city. That changed with *FOCUS Kansas City*, which states that walking is an important mode of transportation and that we should plan for the pedestrian.

The Neighborhood Walking Survey tool has been developed to help people who live and work in a neighborhood decide for themselves and make clear to the City what they need and want in terms of walking.

The survey will probably take 1-2 hours to complete. We encourage you to get out and see your neighborhood while you complete the survey.

This survey is divided into three sections. Section 1 tells us where you are walking to and from today, and where you might want to walk in the future. Section 2 tells us how walking conditions in your neighborhood rate. Section 3 determines how you walk in your community and what improvements would make your neighborhood more walkable.

The "Neighborhood Walking Survey Tool Kit" consists of a survey form, three colored pens to complete the survey and maps of the neighborhood.

The "Neighborhood Walking Survey" was designed to take between 2 to 3 hours to complete. Whereas a single resident could complete the survey, the desire is to have a committee of local residents complete the survey together to share ideas and take ownership in a consensus effort. While someone very familiar with their neighborhood might be able to complete this tool without walking, the survey instructions encourage walking the neighborhood and maybe seeing their neighborhood in a different way. This assessment tool is divided into a mapping exercise and responding to some questions. This survey consists of four steps, summarized as follows.

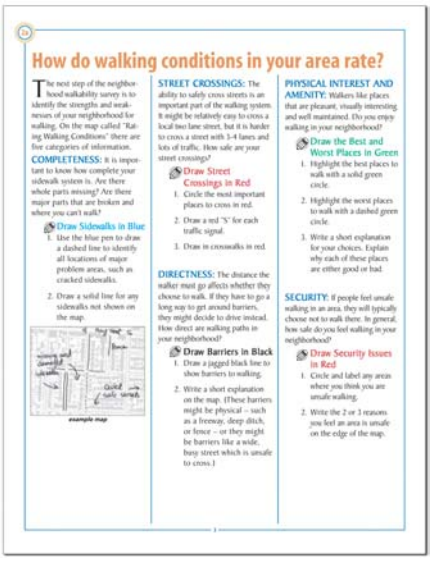
Step 1. Where Do You Want To Walk?

Utilizing the neighborhood map provided by the City, the residents are asked to locate on the map all of the destinations in their neighborhood (shopping, work, schools, parks, places of worship), draw bus routes and stops and add any other important places and they might want to go to. The residents are also asked to identify any of these locations that might be considered a very important on priority destination.

Step 2. How Does Your Walking Environment Rate?

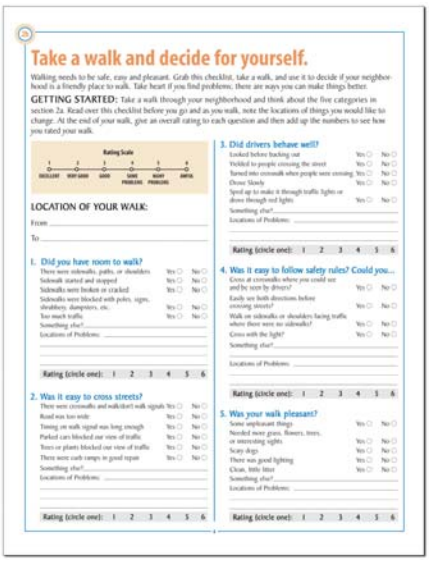
The next step of the neighborhood walkability assessment is to the residents identify the strengths and weaknesses of your pedestrian environment. This is accomplished by having them identify on a map their opinions of the five pedestrian categories:

- **Completeness:** It is important to know how complete your sidewalk system is. Are there missing segments? Are there major segments that are deteriorated and unusable? These questions are answered through having the residents draw on the map where there are missing segments of the sidewalk and identify all locations of major problem areas, such as cracked sidewalks.
- **Street Crossings:** In order to glean from the residents as to whether they consider their streets safe to cross, they are asked to identify locations of signalized intersections, how many lanes need to be crossed and whether the intersection has crosswalks.
- **Directness:** To address whether there are barriers along their route, residents are asked to map physical obstacles such as freeways, ditches, fences and busy streets.
- **Physical Interest and Amenity:** The residents are asked to highlight and label the things the things they like most about their neighborhood and which areas are not pedestrian friendly.
- **Security:** Residents are asked to label on their maps any areas they think are unfriendly and to write 2 or 3 things on the edge of the map, why.



Step 3. Take A Walk And Decide For Yourself.

The third step of the "Neighborhood Walking Survey" contains a series of yes/no, excellent to awful ratings questions, regarding whether they had room to walk, whether it was easy to cross the street, did drivers behave, was it easy to follow safety rules, and was it a pleasant walk. Details within the questions probed the resident's options of the problems within the neighborhood.


Take a walk and decide for yourself.

Walking needs to be safe, easy and pleasant. Grab this checklist, take a walk, and use it to decide if your neighborhood is a friendly place to walk. Take heart if you find problems; there are ways you can make things better.

GETTING STARTED: Take a walk through your neighborhood and think about the five categories in section 2a. Read over this checklist before you go and as you walk, note the locations of things you would like to change. At the end of your walk, give an overall rating to each question and then add up the numbers to see how you rated your walk.

Rating Scale

LOCATION OF YOUR WALK:

From

To

1. Did you have room to walk?

2. Was it easy to cross streets?

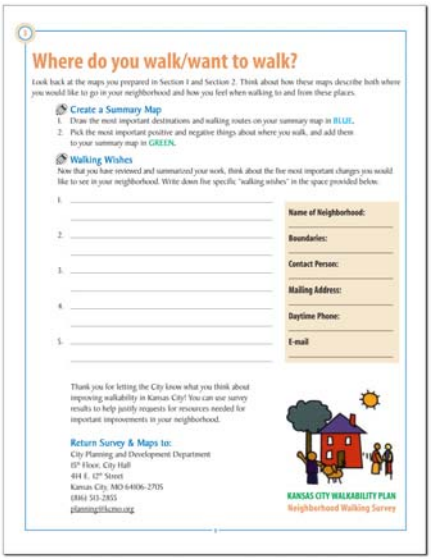
3. Did drivers behave well?

4. Was it easy to follow safety rules? Could you...

5. Was your walk pleasant?

Step 4. Where Do You Walk/Want To Walk?

This step asks the residents to look back at what they said as to where they want to go and how do walking conditions in the area rate. Then on a summary map, draw the most important destinations and walking routes. On the survey form, they are also asked to identify their five most important "walking wishes" for changes in their neighborhood.


Where do you walk/want to walk?

Look back at the maps you prepared in Section 1 and Section 2. Think about how these maps describe both where you would like to go in your neighborhood and how you feel when walking to and from these places.

Create a Summary Map

1. Draw the most important destinations and walking routes on your summary map in BLUE.
2. Pick the most important positive and negative things about where you walk, and add them to your summary map in GREEN.

Walking Wishes

Now that you have reviewed and summarized your work, think about the five most important changes you would like to see in your neighborhood. Write down five specific "walking wishes" in the space provided below.

1.
2.
3.
4.
5.

Name of Neighborhood:

Boundaries:

Contact Person:

Mailing Address:

Daytime Phone:

E-mail

Thank you for letting the City know what you think about improving walkability in Kansas City! You can use survey results to help justify requests for resources needed for important improvements in your neighborhood.

Return Survey & Maps to:
City Planning and Development Department
15th Floor, City Hall
414 E. 12th Street
Kansas City, MO 64106-2705
(816) 513-2855
planning@kcmo.org

KANSAS CITY WALKABILITY PLAN
Neighborhood Walking Survey

Project Level Pedestrian Level of Service Analysis

Public improvement projects, such as the construction of a new roadway or intersection, parks, and public buildings require a more detailed assessment of the pedestrian environment than a citywide, community, and neighborhood level assessment. Similarly, private land development proposals, as part of a development application require the rigors of a site-specific assessment. To this end, a detailed Pedestrian Level of Service (LOS) has been developed for these public improvements and private development projects. A complete description of this process including evaluation forms and procedures for conducting the project level analysis and level of service thresholds by different area types within the City is presented in Appendix C.

Pedestrian mobility at the project and site-specific levels is dependent upon the completeness and character of the pedestrian system. In order to measure the completeness and quality of the proposed development's pedestrian system, a facility-specific level-of-service measurement procedure was established to measure five pedestrian system elements: directness, continuity, street crossings, visual interest and amenity, and security. These level-of-service measurements are presented in the attached table and explained as follows:

Directness

The measure of directness is simply how well the project provides direct pedestrian connections within the project's boundaries and from the project's edge to destinations such as transit stops, schools, parks, commercial centers, or activity areas.

The directness LOS is based on a ratio of the actual distance from trip origin to trip destination divided by the minimum distance between those two points. For a public improvement such as public building complex or park, or a private development project the pedestrian level-of-service analysis shall identify internal locations and identify logical pedestrian routes as proposed by the project to the project's edge. In general, one or two trip origin locations in a smaller development and up to five or six representative trip origin locations in a larger development will be required.

If the minimum distance is defined by the grid system, then the measurement of the minimum distance for an existing or proposed development is the measurement from a representative trip origin to destination by a north-south measurement plus an east-west measurement characterized by the grid street pattern. An actual/minimum (A/M) ratio of between 1.0 and 1.2 would be considered an LOS A, whereas an A/M ratio of 2.0+ would be considered a failure. In reality, an A/M ratio of below 1.0 could be achieved with the introduction of a diagonal street.

For each on-site origin and project edge destination, measure the actual (A) distance a pedestrian would be required to walk to the nearest destination. The minimum distance, defined by a right angle grid overlay, between the same trip origins to edge destination should also be measured. The pedestrian directness level of service is based on the following Actual/Minimum Ratio per the following table.

The project's directness LOS shall equal or exceed the minimum standards as defined for the project's pedestrian area type. In the event that the LOS is not being achieved, the applicant shall identify and document reasons why the minimum standard could not be achieved. Final determination of whether the project achieves the minimum standards lies with the City's Transportation and Development Committee.

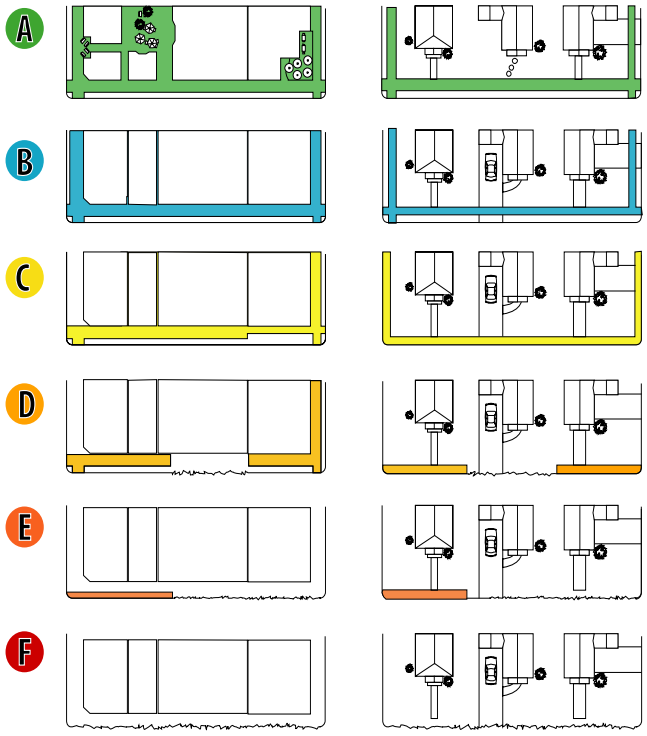
Level of Service	Actual Distance/ Measured Distance Ratio
A	< 1.2
B	1.2–1.4
C	1.4–1.6
D	1.6–1.8
E	1.8–2.0
F	> 2.0

In addition, the City when designing a public project or the applicant of a private development shall select and map three to four examples of pedestrian trips that would originate on site and travel externally to an off-site destination. This map would identify the logical pedestrian route of the trip, where the pedestrian intersects with the public edge and where they would walk to reach the outside destinations. These destinations could include transit stops, schools, parks, trails, and commercial areas. These destinations should be within approximately one-quarter mile, but could be farther (i.e., junior high schools and high schools have a 1-mile and a 1½-mile walking distance, respectively). If there are no pedestrian destinations within the immediate study area, the directness LOS is not applicable. Connections to arterials that could eventually support transit should be evaluated.

If off-site restrictions are impacting the directness of the pedestrian system, the applicant shall identify methods for alleviating those restrictions.

Continuity

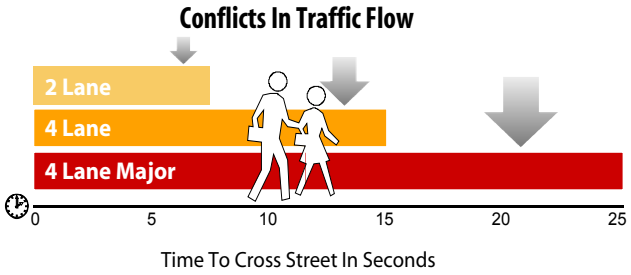
Continuity is the measurement of the completeness of the sidewalk system with avoidance of gaps. In the highest level of service, LOS A, the pedestrian sidewalk appears as a single entity within a major activity area or public open space. LOS B provides a quality, continuous stretch of pedestrian networks, which are physically separated by landscaped parkways, characteristic of the proposed street standards. LOS C provides a continuous pedestrian network on both sides of the streets; however, these sidewalks may not be built to current standards. LOS D reflects areas where there may not be sidewalks on both sides of the street or there are breaches in the system. LOS E reflects areas where there are significant breaks in the system. LOS F is a complete breakdown in the pedestrian flow, where each pedestrian selects a different route because no pedestrian network exists. Off-site evaluations should generally be for the proposed development and routes used to evaluate directness. All internal and adjacent sidewalks for public and private developments shall evaluate the completeness of the sidewalk system and assure adequate continuity is provided.



Street Crossings

All major arterial street crossings shall be evaluated for internal intersections and intersections adjacent to the site used to access the defined destinations and existing and future transit stops. This street crossing pedestrian level of service analysis is particularly important for City of Kansas City Department of Public Works intersection improvement projects. The following are key street-crossing elements that need to be recorded for each street crossing to determine its LOS.

- **Number of Lanes**: Identify the number of travel lanes the pedestrian must cross to reach their destination.
- **Lane Widths**: Identify whether the travel lanes are 12 foot typical or whether they are less than typical.
- **Parking Lanes**: Identify whether the street has on street parking that would increase the walk time necessary to cross the street.
- **Travel Speed**: Does the street that needs to be crossed have higher travel speeds than typical for the roadway type under investigation? Factors that might affect speed would include minimum cross street traffic, low number of access points, and geometric design.



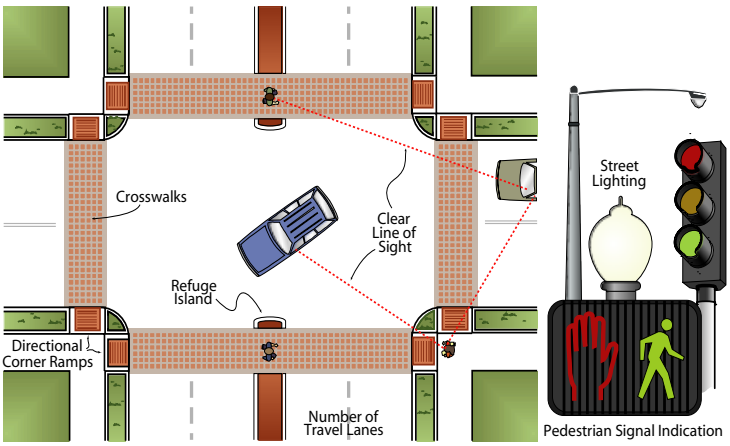
- **Crosswalks**: Are there crosswalks, and are they well marked?
- **Signal Indication**: Are the signal heads easily visible to the pedestrian and the motorist?
- **Lighting Levels**: Is the intersection and crosswalk well lit so that the pedestrian is visible at night?
- **Pedestrian Signal Activation**: Some signals have the walk automatically set for each phase. This is desirable for all activity areas, as it states the importance of the pedestrian. An alternative is the pedestrian button, where the pedestrian presses the button, waits for the cycle to repeat, and gets the walk phase. The third type of signal does not have any walk phase. This type of signal is unacceptable, as the only way a pedestrian may ever get a green light is when an automobile on the side street activates the cycle.
- **Median Refuge Areas**: Painted medians offer little refuge other than getting out of a lane of traffic. Substantive raised medians of significant width provide some increase in security for the crossing pedestrian.
- **Amenity**: Amenity includes such elements as signing and design features that strongly suggest the presence of a pedestrian crossing.
- **Sight Distance**: Sight distance measures the unobstructed view between the motorist and the pedestrian. This can be a problem particularly when a vehicle driver intends to make a left turn under the permissive left-turn phase and it is difficult to see around the opposing left-turn vehicle.
- **Corner Ramps**: Corner ramps will be ADA compliant.

Street Crossings Types: There are four types of street crossings. Each has its own inherent issues and needs.

- **Signalized Intersections:** Signalized intersections pose major pedestrian crossing problems due to high traffic volumes, turning vehicles, vehicles that stop in the crosswalk, a significant number of lanes to cross, signal indication that is difficult to read or understand, lack of visual connection with the automobile, lack of vehicle driver respect, lack of raised median protection, no corner ramps, and no or inconvenient pedestrian buttons.
- **Unsignalized Intersection Crossing the Major Street:** Problems are similar to signalized intersections with even greater concern for the number of lanes to cross since pedestrians do not have the protection of the signal. Problems may also include speed of vehicles and lack of adequately marked crosswalks with good lighting, raised median, visibility, and corner ramps.
- **Unsignalized Intersection Crossing the Minor Street:** The problem at these locations is the vehicle traveling along the arterial turning right or left onto the minor street, while being urged along by a following vehicle.
- **Mid-Block Crossing**: Problems are similar to the unsignalized major street crossing, including number of lanes to cross and lack of crosswalk presence, lighting, raised median, and corner ramps.

Street Crossing LOS Measurements: Determining street crossing level of service is defined in the Kansas City Pedestrian Level of Service Table and is dependent on the type of crossing, the number of lanes to cross, lane widths, parking lanes, travel speed and the presence or lack of attributes listed above. For each street crossing type, the ideal condition with a minimum number of lanes has been defined for the highest levels of service. As design elements and features are reduced, parking lanes exists, higher speeds are estimated and/or additional lanes to cross are increased, the LOS is reduced. If parking lanes do not exist and the pedestrian does not need to be exposed to additional travel time, traffic speeds are lower than what is typical for the roadway type or the traffic lanes are less in width, resulting in less exposure time for the pedestrian, the LOS is increased.

As part of the Street Crossing Pedestrian Level of Service, the Department of Public Works or the Developers traffic consultant should adhere to the areas minimum pedestrian level of service is defined by the pedestrian area type. If this minimum LOS is not met, the Department of Public Works or the Developers traffic consultant should recommend and include pedestrian street-crossing enhancements to improve the LOS to acceptable levels of service.



Visual Interest and Amenity

To promote pedestrian activity and use of transit, the pedestrian system needs to be aesthetically appealing. The attractiveness of the pedestrian network can range from visually attractive with environmental enhancements, such as pedestrian street lighting, fountains, and benches, to an experience of discomfort and intimidation, associated with absence of amenities. Areas to examine regarding visual interest and amenity include the following:

- **Scale**: Does the urban environment reflect a pedestrian scale of improvements? Are the colors, materials, and form of the pedestrian facilities and features appropriate to the area and do they functionally unite the pedestrian network?
- **Attractiveness:** Does the area include landscaping, vertical treatment, and sidewalk furnishings that improve the character and pedestrian scale of the urban environment?
- **Design:** Does the study area include site details, such as public art, that enhance the pedestrian scale of the street and become urban amenities?
- **Lighting:** Does the lighting improve the character of the study area?
- **Maintenance:** Is the study area well maintained and clean?

- **Adjacent Uses:** Are the land uses along the pedestrian network attractive and inviting such that they encourage pedestrian activities or are they unappealing like non-maintained buildings and parking lots and auto-oriented uses?

Defining the "Visual Interest and Amenity" level of service is subjective. In general, if the environment has many of the features listed above it should be rated a high level of service grade, whereas if it has few positive features, has poor lighting, and is not well maintained, it rates a poor level of service. As part of the preparation of the public improvement or the pedestrian impact study, for a private development, the City or private development applicant shall provide include in the project design sufficient visual and character quality elements to reach acceptable LOS standards.

Security

Pedestrians require a sense of security, both through visual line of sight with others and separation from vehicles. Major portions of the city's sidewalks along arterials are narrow and adjacent to high-volume, high-speed travel lanes. Other sidewalks are intimidating because they are not visible from the motorist and surrounding activities. Representative pedestrian sidewalks and corridors within the study area should be examined based on lighting levels and sight distance. The City' public improvement projects and private developments should provide for the minimum-security pedestrian level-of-service standards.

KANSAS CITY PEDESTRIAN LEVELS OF SERVICE

Measurement	A	B	C	D	F
Directness	Pedestrian has a direct, clear, understandable linear public path to destination, generally with more than one alternative route. (A/M Ratio <1.2)*	Pedestrian has at least one direct, clear, understandable linear public path to destination with only minor deviations. (A/M Ratio 1.2 to 1.4)*	Minimum acceptable directness and connectivity standard; path to destination lacks linearity, and is less clear and understandable. (A/M Ratio 1.4 to 1.6)*	Increasing lack of directness, connectivity and linearity with incoherent and confusing direction and visual connection to pedestrian destinations. (A/M Ratio 1.6 to 2}*	No directness or connectivity. Total pedestrian disorientation, no linearity and confusing. (A/M Ratio >2.0)*
Continuity	ADA accessible Pedestrian sidewalk in good condition with landscaped parkway appears as a single entity connected to and within a major activity area or public open space.	Continuous stretches of ADA accessible sidewalks in generally good condition (10% or less need maintenance) that are physically separated by a landscaped parkway.	Continuous stretches of sidewalks that may have variable widths, with and without landscaped parkways; maintenance problems occur in less than 20% of sidewalk.	Pedestrian corridors are not well connected with several breaches or barriers in the pedestrian network; maintenance needed over 50% of sidewalk.	Complete breakdown in pedestrian traffic flow as each pedestrian selects a different route, as no pedestrian network exists.
Street Crossings: Signalized**	3 or fewer lanes to cross or 4 or 5 lanes to cross with raised pedestrian refuge median and/or reduced lane widths or slower traffic speeds; total crossing width no greater than 72 feet. signal has clear vehicular and pedestrian indications; well marked crosswalks; good lighting levels; standard curb ramps; maximum curb radii in Pedestrian Areas ***of 20 feet. automatic pedestrian signal phase; amenities, signing, sidewalk, and roadway character strongly suggest the presence of a pedestrian crossing; drivers and pedestrians have unobstructed views of each other.	4 or 5 lanes to cross or 6 or more lanes to cross with raised pedestrian refuge median and/or reduced lane widths or slower traffic speeds; total crossing width no greater than 84 feet. signal has clear vehicular and pedestrian indications; well marked crosswalks; good lighting levels; pedestrian refuge area: raised medians at least 6' wide with low plantings or features; standard curb ramps; maximum curb radii in Pedestrian Areas*** of 20 feet. automatic pedestrian signal phase; amenities, signing sidewalk, and roadway character strongly suggest the presence of a pedestrian crossing; drivers and pedestrians have unobstructed views of each other. Missing 2 elements of A	6 or more lanes to cross; total crossing width no greater than 96 feet. signal has clear vehicular and pedestrian indications; well-marked crosswalks; good lighting levels; pedestrian refuge area: raised median at least 6' wide with low plantings or features; standard curb ramps; maximum curb radii in Pedestrian Areas*** of 20 feet. automatic pedestrian signal phase; amenities, signing, sidewalk, and roadway character strongly suggest the presence of a pedestrian crossing; drivers and pedestrians have unobstructed views of each other. Missing 4 elements of A Missing 2 elements of B	Missing 5-6 elements of A Missing 4-5 elements of B Missing 2-3 elements of C	Missing 7 elements of A Missing 6 elements of B Missing 5 elements of C
Street Crossings: Unsignalized, Crossing the Major Street****	3 or fewer lanes to cross or 4 or 5 lanes to cross with raised pedestrian refuge median and/or reduced lane widths or slower traffic speeds; total crossing width no greater than 72 feet. Well-marked crosswalks; good lighting levels; standard curb ramps; maximum curb radii in Pedestrian Areas ***of 20 feet. amenities, signing, sidewalk, and roadway character strongly suggest the presence of a pedestrian crossing; drivers and pedestrians have unobstructed views of each other.	4 or 5 lanes to cross or 6 or more lanes to cross with raised pedestrian refuge median and/or reduced lane widths or slower traffic speeds; total crossing width no greater than 84 feet. Well-marked crosswalks; good lighting levels; pedestrian refuge area: raised median at least 6' wide with low plantings or features; standard curb ramps; maximum curb radii in Pedestrian Areas ***of 20 feet. amenities, signing, sidewalk, and roadway character strongly suggest the presence of a pedestrian crossing; drivers and pedestrians have unobstructed views of each other. Missing 1 element of A	6 or more lanes to cross; Well-marked crosswalks; good lighting levels; pedestrian refuge area: raised median at least 6' wide with low plantings or features; standard curb ramps; maximum curb radii in Pedestrian Areas ***of 20 feet. amenities, signing, sidewalk, and roadway character strongly suggest the presence of a pedestrian crossing; drivers and pedestrians have unobstructed views of each other. Missing 2 elements of A Missing 1 element of B	Missing 3-4 elements of A Missing 2-3 elements of B Missing 1-2 elements of C	Missing 5 elements of A Missing 4 elements of B Missing 3 elements of C
Street Crossings: Unsignalized, Crossing the Minor Street****	Well-marked crosswalks; good lighting levels; standard curb ramps; maximum curb radii in Pedestrian Areas ***of 20 feet. amenities, signing, sidewalk, and roadway character strongly suggest the presence of a pedestrian crossing; drivers and pedestrians have unobstructed views of each other.	Missing 1 element of A	Missing 2 elements of A	Missing 3-4 elements of A	Missing 5 elements of A
Street Crossings: Mid-Block Major Street Crossing****	3 or fewer lanes to cross or 4 or 5 lanes to cross with raised pedestrian refuge median, and reduced lane widths and/or slower traffic speeds; total crossing width no greater than 72 feet. amenities, signing and sidewalk and roadway character strongly suggest the presence of a pedestrian crossing; drivers and pedestrians have unobstructed views of each other; well marked crosswalks; good lighting levels; standard curb ramps.	4 or 5 lanes to cross or 6 or more lanes to cross with raised pedestrian median, and reduced lane widths and/or slower traffic speeds; total crossing width no greater than 84 feet. Raised median at least 10' wide with low plantings or features; amenities, signing and sidewalk and roadway character strongly suggest the presence of a pedestrian crossing; drivers and pedestrians have unobstructed views of each other; well marked crosswalks; good lighting levels; standard curb ramps. Missing 1 element of A	6 or more lanes to cross; Raised median at least 10' wide with low plantings or features; amenities, signing and sidewalk and roadway character strongly suggest the presence of a pedestrian crossing; drivers and pedestrians have unobstructed views of each other; well marked crosswalks; good lighting levels; standard curb ramps. Missing 2 elements of A Missing 1 element of B	Missing 3-4 elements of A Missing 2-3 elements of B Missing 1-2 element of C	Missing 5 elements of A Missing 4 elements of B Missing 3 elements of C
Visual Interest and Amenity	Visually appealing and compatible with local architecture. Generous sidewalk width, active building frontages. Good protection from elements by street trees or awnings; quality street furniture including frequent seating.	Generous sidewalks, visual clarity, some street furniture and landscaping, no blank street walls. Protection from elements available over 50% of block on average. Seating or resting places average once every 2 blocks.	Functionally operational with less importance to visual interest or amenity. Protection from elements available over 25% of block on average. Seating or resting places averages once every 3 to 4 blocks.	Design ignores pedestrian with negative mental image. Protection from elements averages less than 10% of block. No seating or resting places within ¼ mile.	Total discomfort and intimidation. No protection from elements in multi-block area. No seating or resting places.
Security	Sense of security enhanced by presence of other people using sidewalks and being overlooking from adjacent buildings. Good pedestrian lighting on pedestrian routes and clear sight lines. Good separation from vehicular traffic by parkway with trees/planters.	Good, if uneven, lighting levels on pedestrian routes and unobstructed lines of sight. Street edge of sidewalk separated from the street by at least 5 feet.	Generally good lighting levels on pedestrian routes with occasional short intervals of lower lighting; generally unobstructed lines of sight. Potential for separation from traffic of at least 5 feet.	Sidewalk configuration and parked cars may inhibit vigilance from the street. Separation from vehicular traffic available only at multi-block intervals.	Streetscape is pedestrian intolerant due to uses, building configurations, no protection from heavy traffic, no eyes on the street.

* A/M Ratio: Actual distance between pedestrian origin/destination divided by minimum distance defined by a right angle grid street system.
** A signalized intersection LOS will go up one level of service with a dedicated pedestrian signal phase and/or a colored or textured crosswalk.
*** Pedestrian Areas are potential high pedestrian use areas based on the Kansas City Walkability Plan and as defined in the ***Pedestrian LOS Impact Analysis Manual for Development Proposals***.
****Unsignalized crossing at intersection of major street (minor arterial to major arterial) and minor street (local, connector and collector).

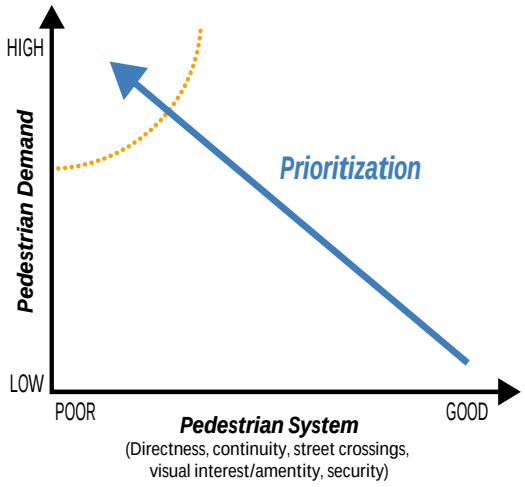
III. Establishing Citywide Walkability Priorities: Demand vs. Facilities

Chapter II included the concept of pedestrian level of service and described a method on how to conduct a citywide macro scale assessment of the City of Kansas City's pedestrian system. Chapter II also stated that it is not recommended that all areas within the City have the same standards, as pedestrian needs vary through out the City. This need is based in large part on pedestrian demand.

Demand for pedestrian activity varies dramatically throughout the City of Kansas City. This fact is related to and somewhat dependent upon a number of factors. These include land use, availability of sidewalks and other pedestrian facilities, and the general travel patterns associated with the various types of trips residents are making. To understand these relationships, local and national census and transportation survey data was analyzed for general travel trends. Local GIS data related to land uses, housing, employment, and pedestrian facilities were examined for spatial relationships that would influence pedestrian demand.

The general estimate of pedestrian demand and their geographic locations relative to the demand areas are important information to the pedestrian planning effort because this information can help to prioritize pedestrian investments in the most beneficial areas. This analysis, coupled with the pedestrian facilities analysis, will begin to define four general areas throughout the City. The four general area types are:

- Locations with high pedestrian demand and good pedestrian facilities;
- Locations with high pedestrian demand and poor pedestrian facilities;
- Locations with low pedestrian demand and good pedestrian facilities; and
- Locations with low pedestrian demand and poor pedestrian facilities.



Consistent with the *FOCUS Kansas City Plan's* ideas of being good stewards of the City's limited resources, it is recommended that efforts to improve pedestrian mobility be prioritized in locations with high pedestrian demand and poor facilities. The idea is that high demand areas that already have a good pedestrian system do not need major improvements as they are already served. Areas that have low pedestrian demand are not candidate targets for improvements as they are not required at a higher a level.

Walking Demand

If we are to target improvements in areas that have higher pedestrian demands, it is first necessary to understand the characteristics of pedestrian demand such as how far will people walk and where do they want to walk.

The 1995 Nationwide Personal Transportation Survey, it determined that pedestrians make up about 5.4% of all types of trips. This accounts for 56 million daily walking trips and over 20 billion miles traveled on foot per year. The survey also breaks down pedestrian trips by their purpose:

- **Personal/Family Business**: 43% (*compared to 45.9% for all modes*)
- **Social/Recreational**: 34% (*compared to 24.9% for all modes*)
- **School/Church/Civic**: 14% (*compared to 8.8% for all modes*)
- **Earn a Living**: 7% (*compared to 20.3% for all modes*)

The highest percentages of pedestrian trips are related to personal or family business. This category includes shopping, doctor or dentist visits, or other trips related to the purchase of services. Social and recreational trips include visiting friends or relatives, walking for pleasure, or other recreational walking trips. Compared with other modes of travel, walking trips are more common for social, recreational activities, school, church, or civic trips. They account for a slightly lower percentage of personal or family business trips and a much lower percentage of work related trips.

Trip distances also affect the percentage of walking trips. For trips of less than five miles, pedestrians make up 8.5% of all trips. Not surprisingly, 99.8% of all pedestrian trips are over distances of less than five miles.

Walking Demand Areas – Origins and Destinations

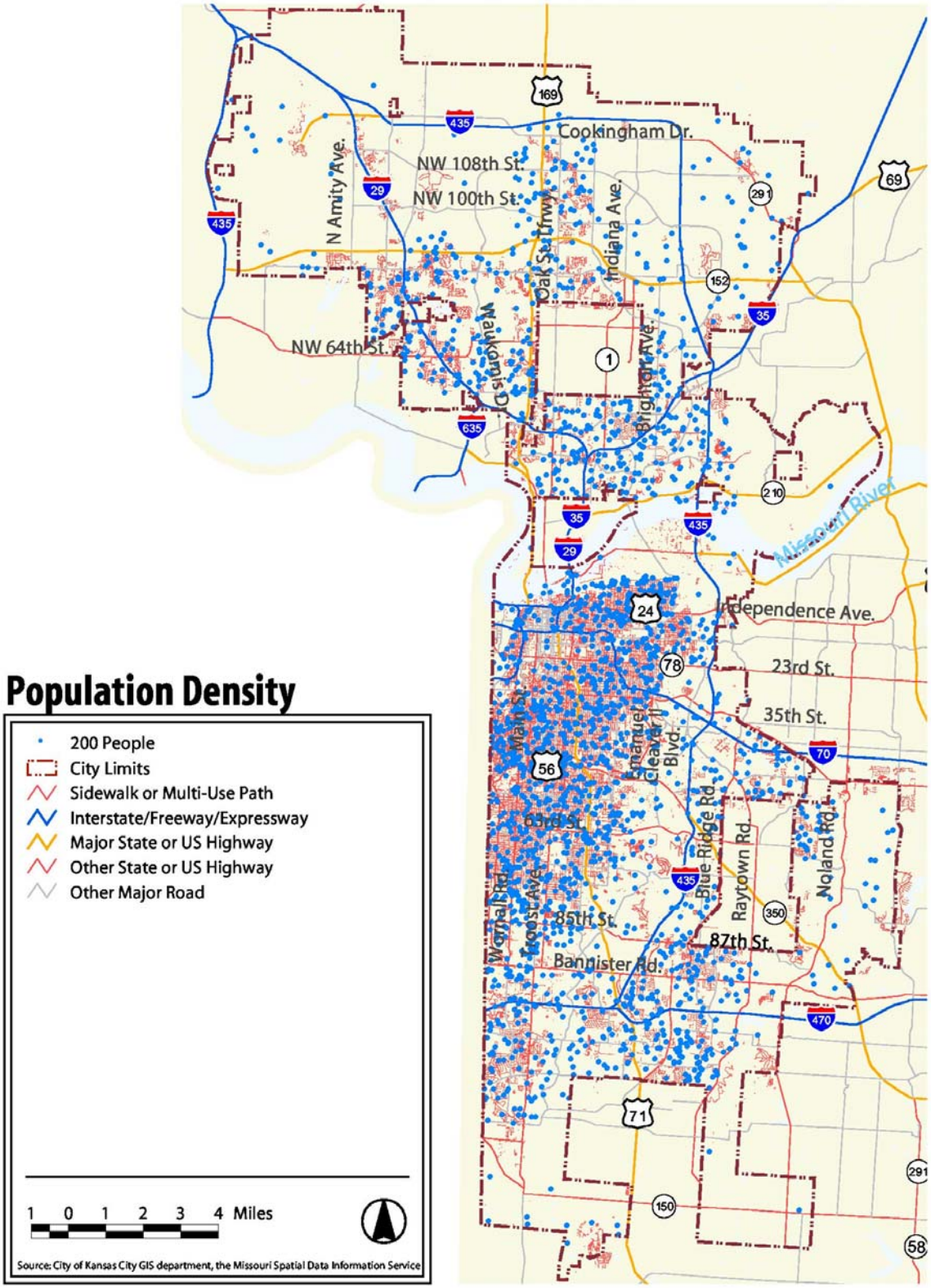
Locations that people want to walk to and from include a wide variety of activities ranging from place of residence, work, shop, schools, parks, churches, and transit. These potential pedestrian trip demand areas, and whether these uses are currently served with a pedestrian network, are presented as follows:

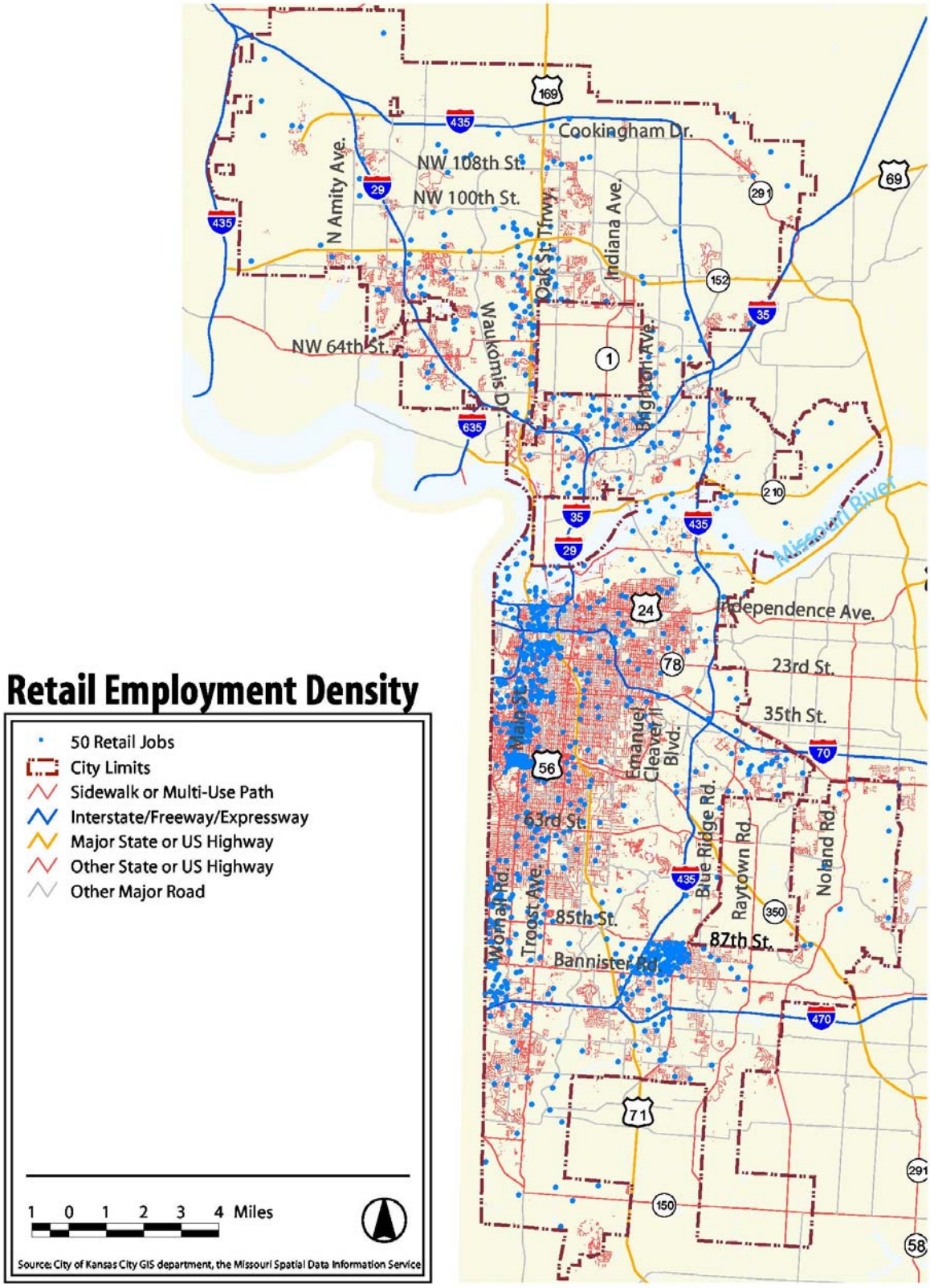
- **Population**: One of the primary origins of potential pedestrian trips is the home. Census data for 2000 was obtained and mapped. This map identifies a single green dot for every fifty persons. Relatively higher density housing in the City is located in and around the Central Business District (CBD) and stretches south and west, decreasing gradually beyond Bannister Road and I-435 on the south and beyond the Blue River on the west. The highest density housing is located immediately around the CBD, Crown Center, and the Plaza. North of the Missouri River, housing densities are generally low with pockets of moderate density along some of the major traffic corridors and relatively little housing in the tracts located north of Barry Road. In the southeast, this low-density pattern is repeated though some areas of moderate density are present near Raytown.

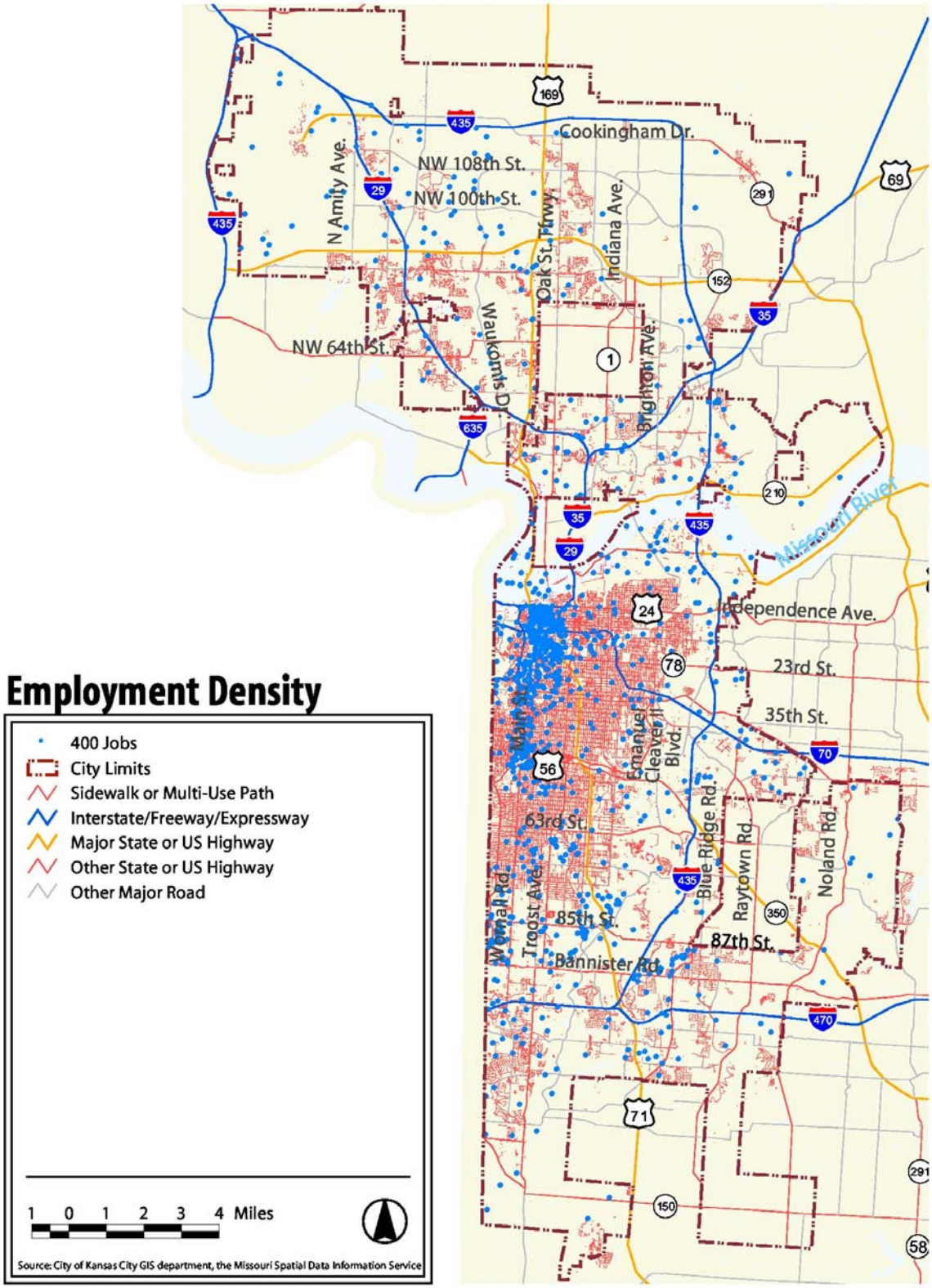
- **Retail**: Local commercial trips are a major candidate for pedestrian movement between home and shopping. They can also be important destinations for employment centers. One surrogate of shopping destinations is retail employment. The 2000 retail employment is contained in the following map and was provided by the City. Retail areas tend to be concentrated in the Central Business Corridor, along with a major concentration around the Banister Mall.

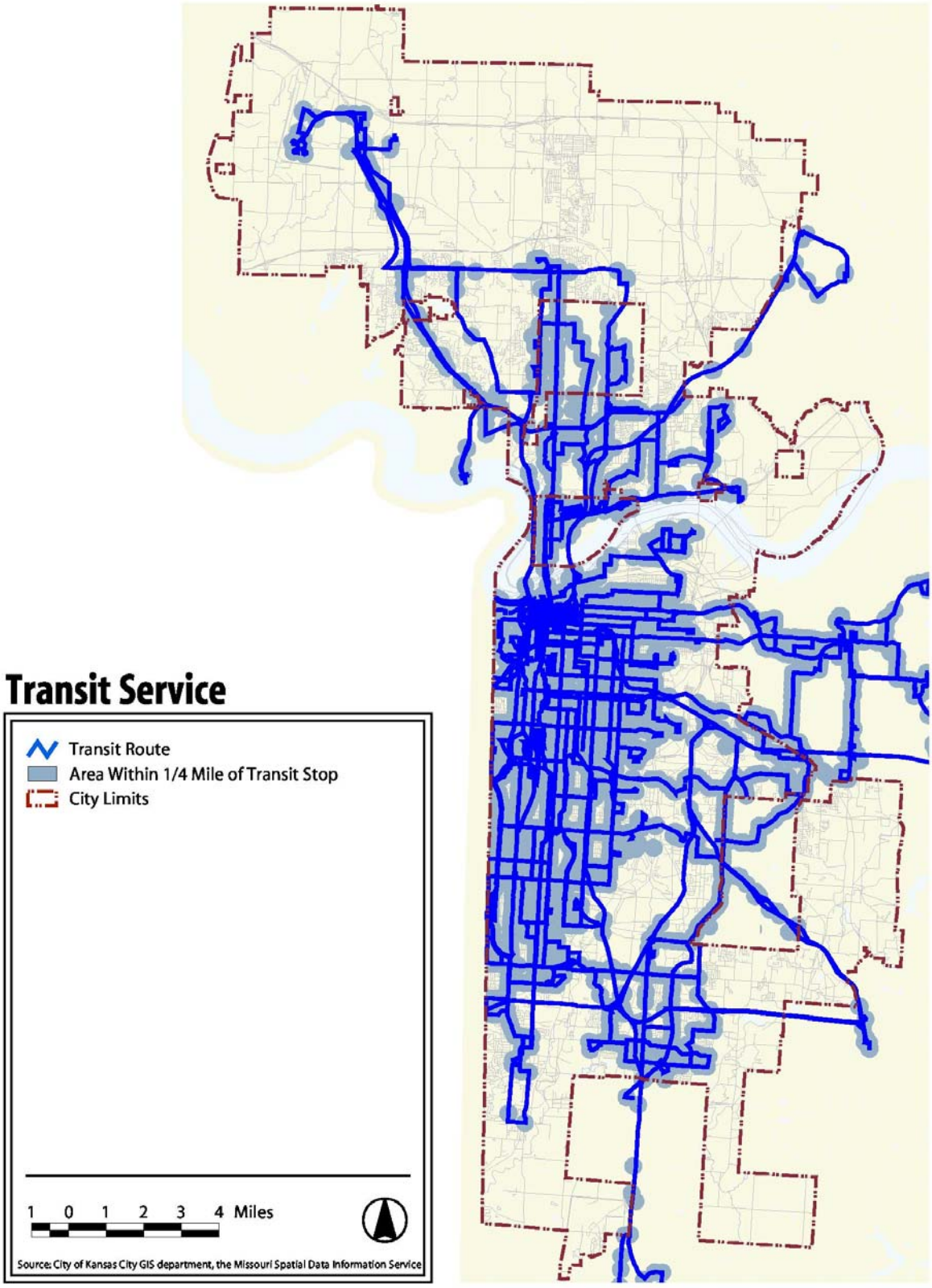
- **Employment**: Places of work are destinations for residents. The 2000 employment data as provided by the City is presented in the attached map. The highest concentration of employment is in the Central Business District Corridor. Other higher density employment areas are near the Bannister Mall, and along Ward Parkway Shopping Center. Employment distribution north of the river is generally clustered along the freeway system with a generally lower density of employment.

- **Transit**: As previously indicated, both ends of a transit trip are pedestrian trips. Current transit service as provided by the Kansas City Area Transit Authority (KCATA) is presented in the attached map. Also included on this map are the transit stops and the typical ¼ mile maximum walking distance


Population Density
200 People
City Limits
Sidewalk or Multi-Use Path
Interstate/Freeway/Expressway
Major State or US Highway
Other State or US Highway
Other Major Road
1 0 1 2 3 4 Miles
Source: City of Kansas City GIS department, the Missouri Spatial Data Information Service
Cookingham Dr.
NW 108th St.
NW 100th St.
NW 64th St.
N Amity Ave.
Oak St. Trfwy.
Indiana Ave.
Brighton Ave.
Walnut St.
Missouri River
Independence Ave.
23rd St.
35th St.
Main St.
Emanuel Cleaver II Blvd.
Blue Ridge Rd.
Raytown Rd.
Noland Rd.
Wornall Rd.
Troost Ave.
85th St.
87th St.
Bannister Rd.


Retail Employment Density
50 Retail Jobs
City Limits
Sidewalk or Multi-Use Path
Interstate/Freeway/Expressway
Major State or US Highway
Other State or US Highway
Other Major Road
1 0 1 2 3 4 Miles
Source: City of Kansas City GIS department, the Missouri Spatial Data Information Service
Cookingham Dr.
NW 108th St.
NW 100th St.
NW 64th St.
N Amity Ave.
Oak St Trfwy
Indiana Ave.
Waukomis Dr.
Brighton Ave.
Missouri River
Independence Ave.
23rd St.
35th St.
Main St.
Emanuel Cleaver II Blvd.
63rd St.
Blue Ridge Rd.
Raytown Rd.
Noland Rd.
Troost Ave.
85th St.
87th St.
Bannister Rd.
Woodland Rd.


Employment Density
400 Jobs
City Limits
Sidewalk or Multi-Use Path
Interstate/Freeway/Expressway
Major State or US Highway
Other State or US Highway
Other Major Road
1 0 1 2 3 4 Miles
Source: City of Kansas City GIS department, the Missouri Spatial Data Information Service
Cookingham Dr.
NW 108th St.
NW 100th St.
NW 64th St.
N Amity Ave.
Oak St. Trfwy.
Indiana Ave.
Brighton Ave.
Wauconsia Dr.
Missouri River
Independence Ave.
23rd St.
35th St.
63rd St.
85th St.
87th St.
Bannister Rd.
Troost Ave.
Manheim Rd.
Emanuel Cleaver II Blvd.
Blue Ridge Rd.
Raytown Rd.
Noland Rd.
169
435
29
291
69
152
35
1
635
210
24
78
56
70
350
470
71
150
58


Transit Service
Transit Route
Area Within 1/4 Mile of Transit Stop
City Limits
1 0 1 2 3 4 Miles
Source: City of Kansas City GIS department, the Missouri Spatial Data Information Service

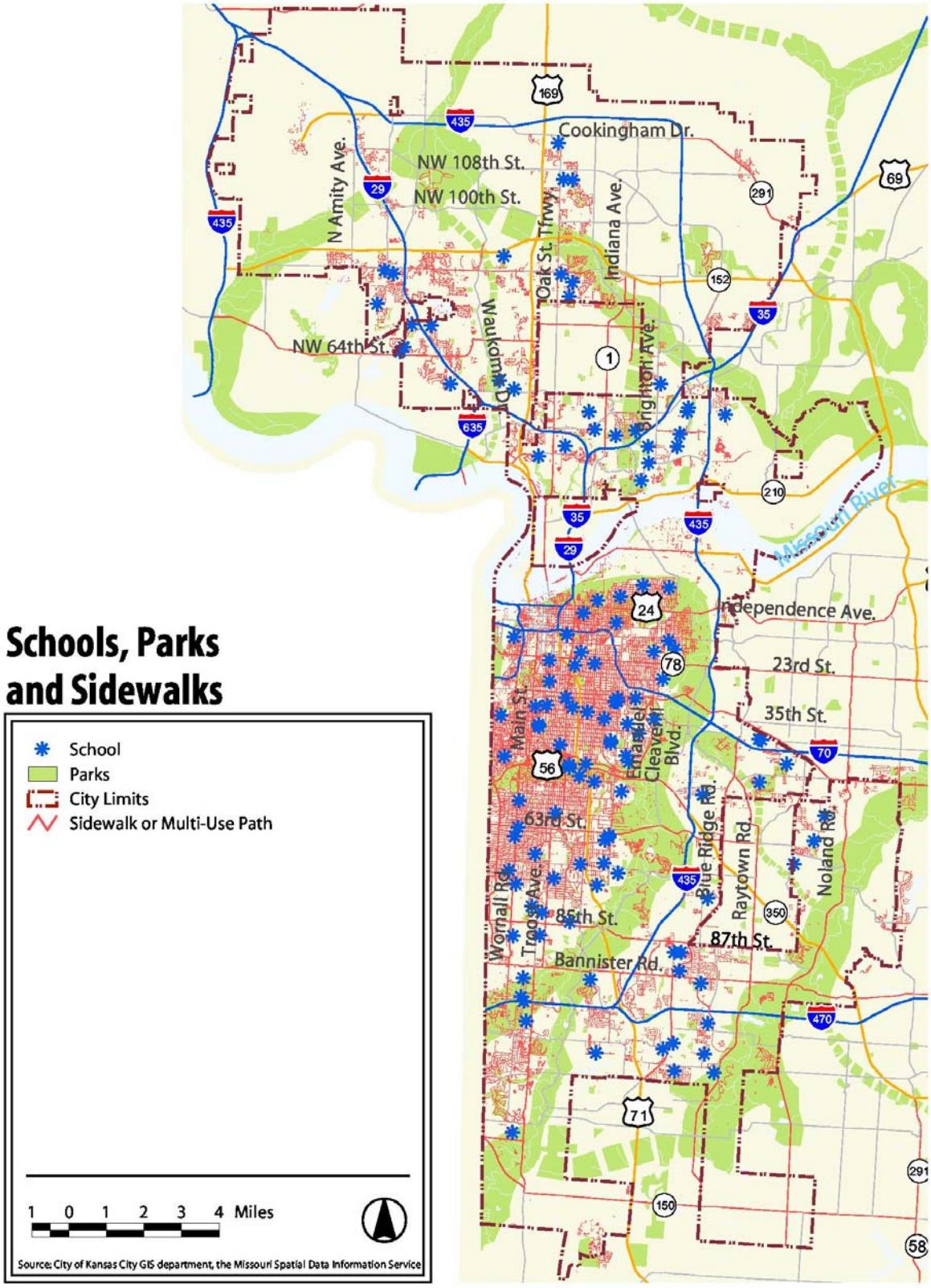
for a pedestrian to walk and take transit. Pedestrian connections to transit service increases with residential density, and in the higher residential density locations throughout the City the sidewalk system is generally in place. However, transit service routes in the Northland area generally show a lack of supporting pedestrian network, as well as the area northeast of the CBD and the southeast portion of the City. Demand for transit service in these areas and conversely the demand for pedestrian trips may be limiting participation in both of these modes.

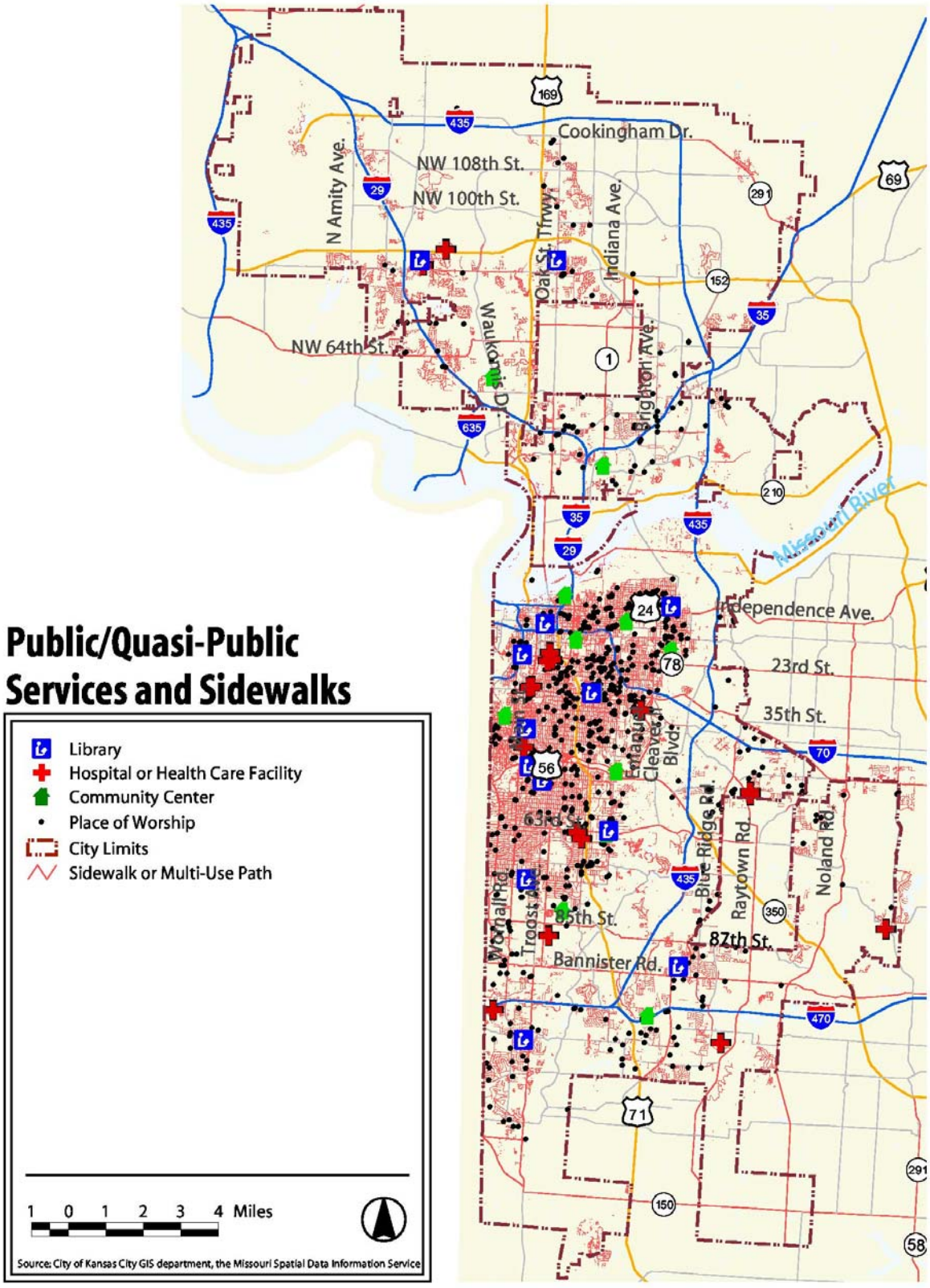
- **Public Facilities - Schools, Parks Libraries, Medical Facilities and Community Centers**: An important pedestrian destination for the City of Kansas City are schools and parks. These facilities are included in the attached map. Access to schools, churches, and civic uses account for approximately 14% of pedestrian trips, but are generally considered very important connections for livable neighborhoods with a high quality of life. Health care destinations are also included in this analysis since they also occupy a central role in the overall health of the community. The location and density of public facilities in the City is closely correlated with the housing density throughout the City, with relatively more facilities in higher density population areas.

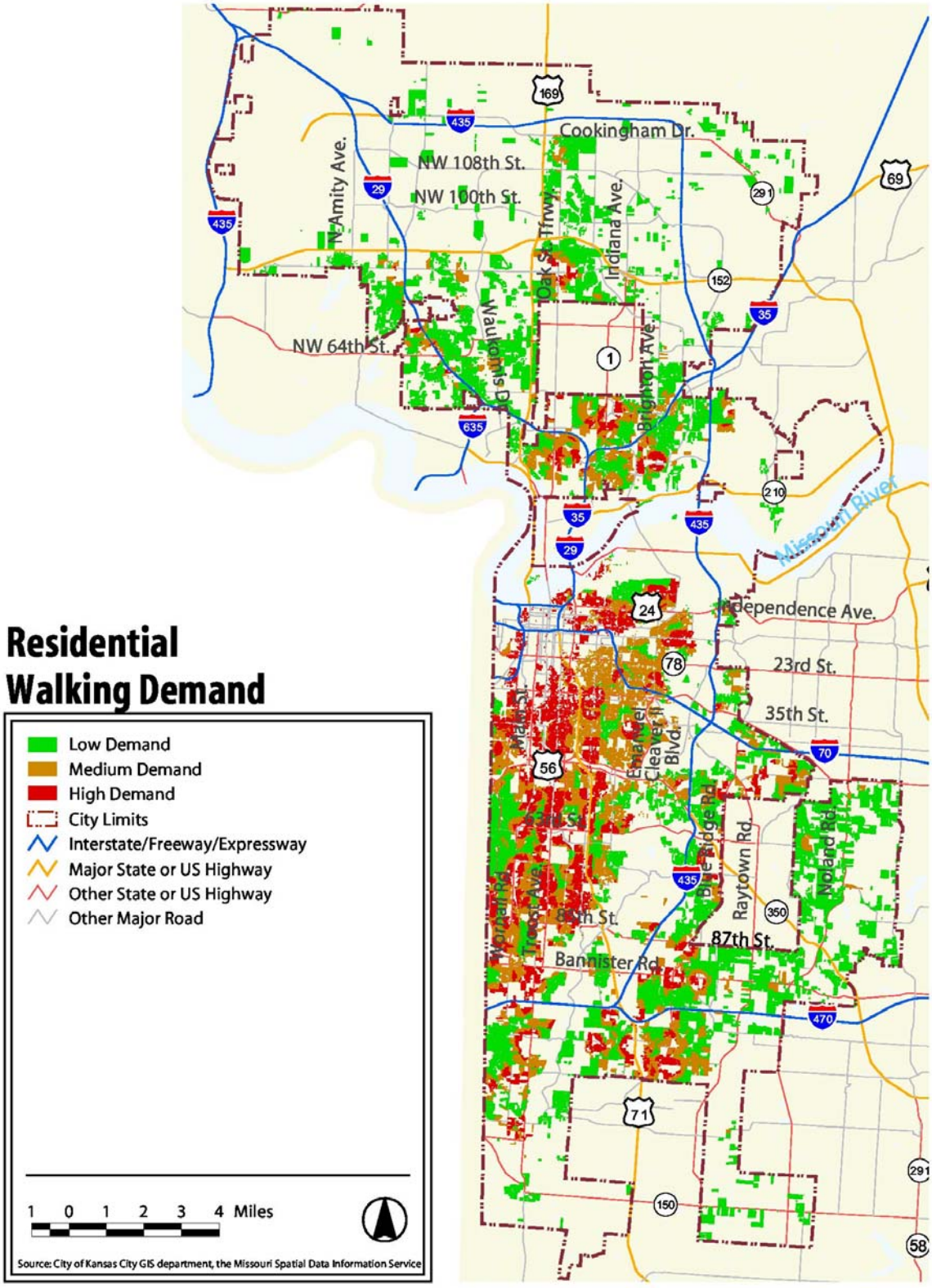
Residential Walking Demand

Walking demand is not merely dependent upon relatively high concentrations of housing, shopping, employment, or even public facilities. The relationship is fundamentally spatial, in that is it depends on how closely both the origin and the destination of the pedestrian trip are located. Assessment of many of these relationships is straightforward, as with the number of households or jobs within a certain distance of a transit route, or the presence or absence of a sidewalk system in the area. To assess the potential pedestrian demand for residential trips to work, retail, transit, or other destinations, a composite map of residential trips to destination activities was developed.

Utilizing the City's GIS information, each residential parcel within the entire City was analyzed to determine if there were employment opportunities within ¼ mile of the residential parcel. This analysis was also conducted to determine if the residential parcel was within ¼ mile of a commercial parcel, school, park, church, transit stop, medical facility, or public facility. Each category that was within ¼ mile of the residential parcel was counted, with employment and commercial parcels weighted based on the total area of those parcels within ¼ mile of the residential parcel. Based on a high and low count for all residential parcels, a graduated scale was identified for each residential parcel within the City. This information is provided in the Residential Walking Demand Map.


Schools, Parks and Sidewalks
School
Parks
City Limits
Sidewalk or Multi-Use Path
1 0 1 2 3 4 Miles
Source: City of Kansas City GIS department, the Missouri Spatial Data Information Service
Cookingham Dr.
NW 108th St.
NW 100th St.
NW 64th St.
N Amity Ave.
Oak St. Tfrwy.
Indiana Ave.
Brighton Ave.
Wakonda Dr.
Missouri River
Independence Ave.
23rd St.
35th St.
63rd St.
85th St.
87th St.
Bannister Rd.
Main St.
Emanuel Cleaver Blvd.
Blue Ridge Rd.
Raytown Rd.
Noland Rd.
Wornall Rd.
Troost Ave.
169
435
29
69
291
152
35
1
635
210
24
78
56
70
350
470
71
150
58


Public/Quasi-Public Services and Sidewalks
Library
Hospital or Health Care Facility
Community Center
Place of Worship
City Limits
Sidewalk or Multi-Use Path
1 0 1 2 3 4 Miles
Source: City of Kansas City GIS department, the Missouri Spatial Data Information Service
Cookingham Dr.
NW 108th St.
NW 100th St.
NW 64th St.
N Amity Ave.
Oak St. Trfwy.
Indiana Ave.
Waukonsis Dr.
Brighton Ave.
Missouri River
Independence Ave.
23rd St.
35th St.
63rd St.
85th St.
87th St.
Bannister Rd.
Blue Ridge Rd.
Raytown Rd.
Noland Rd.
Troost Ave.
Cleaver Blvd.
Emanuel
Wornall Rd.


Residential
Walking Demand
Low Demand
Medium Demand
High Demand
City Limits
Interstate/Freeway/Expressway
Major State or US Highway
Other State or US Highway
Other Major Road
1 0 1 2 3 4 Miles
Source: City of Kansas City GIS department, the Missouri Spatial Data Information Service
Cookingham Dr.
NW 108th St.
NW 100th St.
NW 64th St.
N Amity Ave.
Oak St Tfrwy
Indiana Ave.
Walnut St
Brighton Ave.
Missouri River
Independence Ave.
23rd St.
35th St.
Main St
Cleaver II Blvd
Blue Ridge Rd
Raytown Rd
Noland Rd
Woodland
Troost Ave
87th St.
Bannister Rd
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58

As can be seen on the map, the potential residential walking demand is not uniform throughout the City. Rather, there are residential areas within the City that have a much higher potential residential pedestrian demand than other areas. Whereas areas within the urban core to the south suggest a high to very high residential walking demand, areas to the southeast and Northland areas, except for some isolated pockets, have a low to very low walking demand. This difference is correlated directly to the mix and spatial distribution of land uses.

Employment/Shopping Walking Demand

A similar exercise was conducted to determine where walking demand might be spatially located for potential trips to and between employment and shopping areas. This effort included a GIS spatial analysis for a given commercial business parcel. A count was also made for all other commercial business or retail parcels that were within a ¼ mile and weighted to the parcel size. This effort was done for all commercial-to-commercial, commercial-to-retail, and retail-to-retail parcels.

Utilizing the overall counts by parcel and developing a range from high to low, a map was prepared that depicts potential commercial business and retail activity pedestrian demand areas. Areas not colored on this map are areas that are not commercial or retail uses.

Composite Walking Demand

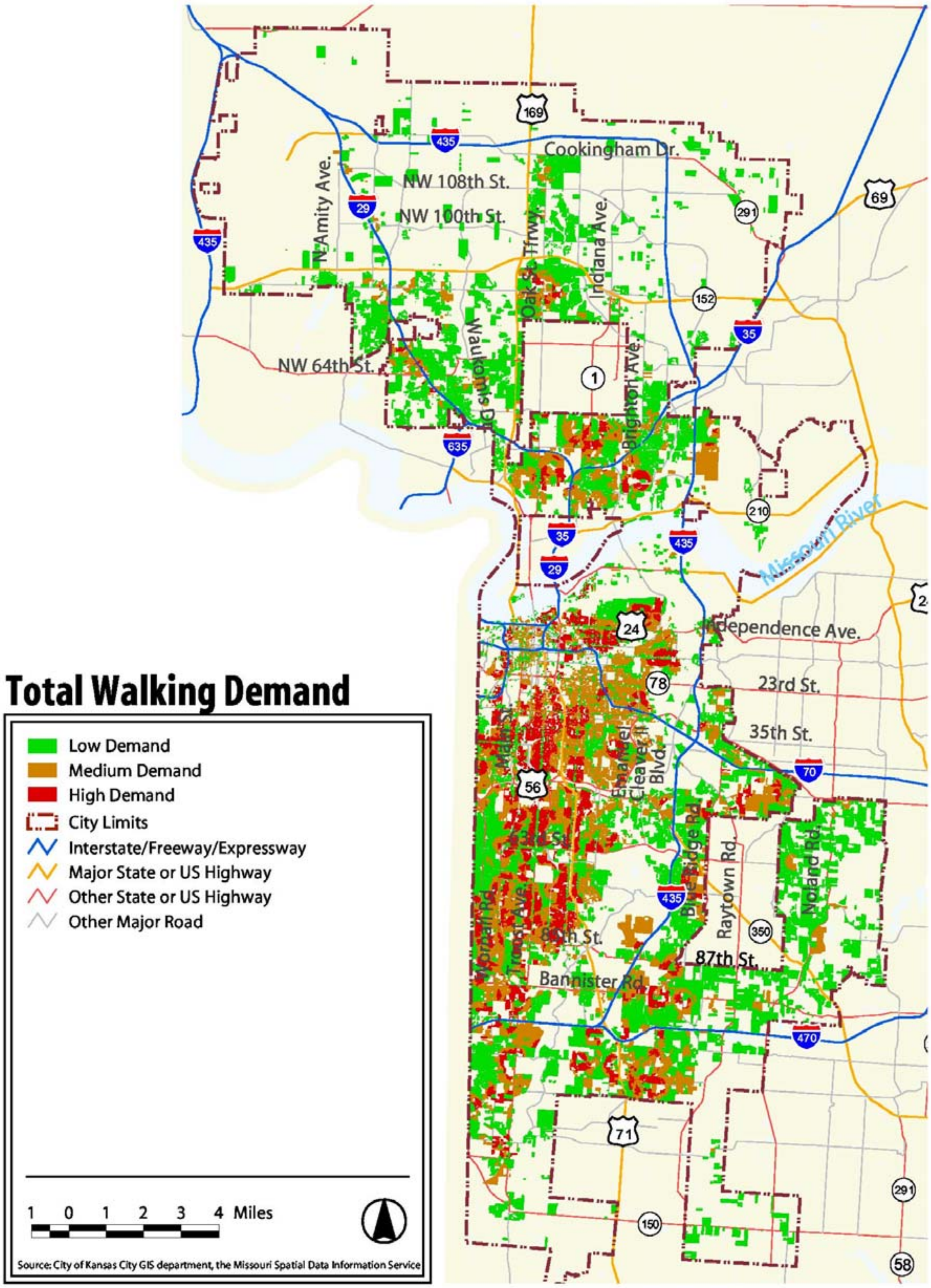
In order to identify an overall assessment of potential walking demand, from which to compare with the current available pedestrian facilities, the Residential Walking Demand and the Employment/Shopping Walking Demand GIS data were combined into a composite database and map.

As expected from the sum of the parts, the primary walking demand areas are within the urban densities of the City. These areas include the Central Business District Corridor. They also include the southerly section of the Northland and activity centers throughout the City.

The Composite Walking Demand assessment does not include much of the outlying lower-density residential areas located in southeast Kansas City or the more northerly areas of the Northland.

It should be noted that as previously indicated, this assessment of total walking demand is to enable a citywide walking assessment for the City of Kansas City. It is not intended to be definitive, as refined analysis would be required for planning areas, districts, and neighborhood assessments.


Employment/Shopping Walking Demand
Low Demand
Medium Demand
High Demand
City Limits
Interstate/Freeway/Expressway
Major State or US Highway
Other State or US Highway
Other Major Road
1 0 1 2 3 4 Miles
Source: City of Kansas City GIS department, the Missouri Spatial Data Information Service
Cookingham Dr.
NW 108th St.
NW 100th St.
NW 64th St.
N Amity Ave.
Oak St. Tfrwy.
Indiana Ave.
Brighton Ave.
Wauomis Dr.
Missouri River
Independence Ave.
23rd St.
35th St.
63rd St.
85th St.
87th St.
Bannister Rd.
Main St.
Emanuel Cleaver II Blvd.
Blue Ridge Rd.
Raytown Rd.
Noland Rd.
Wornall Rd.
Troost Ave.


Total Walking Demand
Low Demand
Medium Demand
High Demand
City Limits
Interstate/Freeway/Expressway
Major State or US Highway
Other State or US Highway
Other Major Road
1 0 1 2 3 4 Miles
Source: City of Kansas City GIS department, the Missouri Spatial Data Information Service
Cookingham Dr.
NW 108th St.
NW 100th St.
N Amity Ave.
Indiana Ave.
NW 64th St.
Brighton Ave.
Missouri River
Independence Ave.
23rd St.
35th St.
Raytown Rd.
Noland Rd.
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Bannister Rd.
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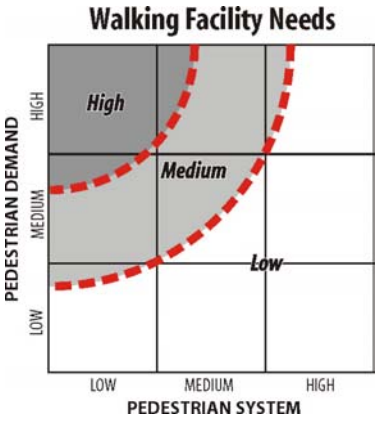
Walking Facilities Needs Assessment

Even though most, if not all areas within Kansas City might benefit from additional walking facility improvements, many areas "need" basic pedestrian improvements to achieve minimum acceptable levels of service standards.

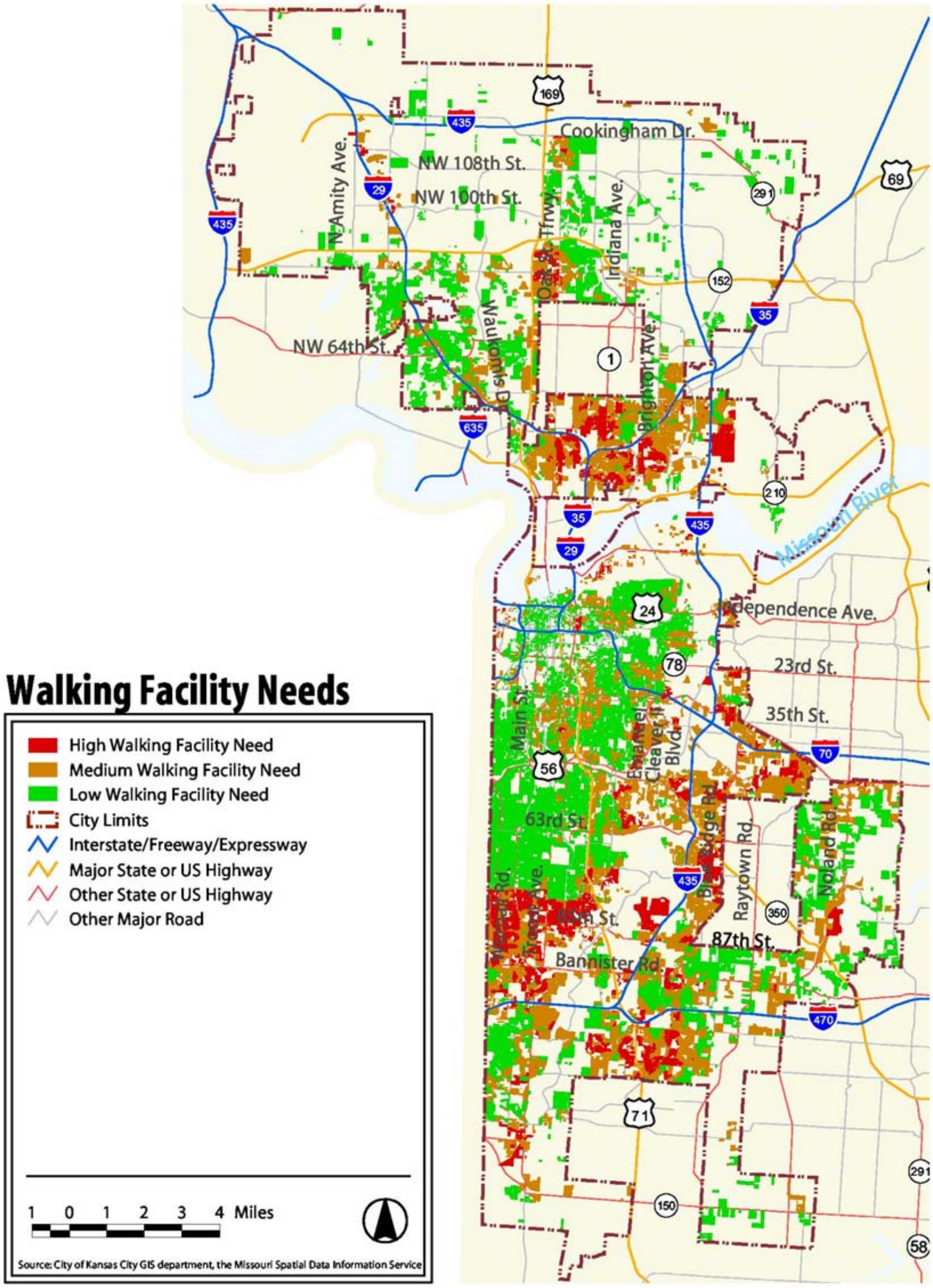


As stated at the beginning of this Chapter, the number one "need" for basic walking facility improvements is in locations with high walking demand and poor walking facilities. The secondary area of need is for areas that have high walking demand with few walking facilities or conversely, areas that have slightly less walking demand with poor walking facilities. This relationship is presented in the following exhibit.

To determine these high and medium "need" areas, several GIS products were combined to provide the basis for a macro level "Walking Facilities Needs Assessment." The first GIS product depicted is in the previous figure, "Total Walking Demand." This total walking demand assessment identified locations within the City, which contains higher densities of residential commercial and employment centers within close proximity to one another, where the potential for walking between uses and activities is high. The other GIS products reflect the state of the pedestrian system and include the "Directness," "Continuity," and "Pedestrian Security" maps presented in Chapter 2. The directness assessment outlined areas in the City with "good" directness measured by grid aligned sidewalks, and areas with "poor" directness, generally characterized by areas with curvilinear streets. The continuity assessment identified areas within the City where there currently exists a continuous system of pedestrian sidewalks versus areas where the sidewalk system is incomplete or non-existent. Pedestrian security was also incorporated into the analysis.

By combining the "Total Walking Demand" rating with the pedestrian system ratings, the "Walking Facilities Needs Assessment" rating was established for each residential, commercial, and retail parcel. This information is presented in graphic form on the following map. As the chart above indicates areas that currently experience a high pedestrian demand without a complimentary pedestrian/sidewalk system was rated high.

In general, it was found that approximately thirteen percent of all residential, commercial, and retail acreage within the City have a high walking facility need. Approximately forty percent have medium walking facility needs and approximately forty-seven percent have low walking facility needs.


Walking Facility Needs
High Walking Facility Need
Medium Walking Facility Need
Low Walking Facility Need
City Limits
Interstate/Freeway/Expressway
Major State or US Highway
Other State or US Highway
Other Major Road
1 0 1 2 3 4 Miles
Source: City of Kansas City GIS department, the Missouri Spatial Data Information Service
Cookingham Dr.
NW 108th St.
NW 100th St.
N Amity Ave.
Oak St. Trfwy.
Indiana Ave.
NW 64th St.
Waukomis Dr.
Brighton Ave.
Missouri River
Independence Ave.
23rd St.
35th St.
Main St.
Emanuel Cleaver II Blvd.
63rd St.
Blue Ridge Rd.
Raytown Rd.
Noland Rd.
Wornall Rd.
87th St.
Bannister Rd.
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Walking Facility Needs by Planning District and City Council Districts

In order to target pedestrian improvements though a walking facility needs implementation program, acreages are summed for Planning Districts and City Council Districts. This summary is presented in the attached table. This table provides information about how much acreage within a district has high, medium, or low walking facility needs. As an example, the Stadium/Park East Planning Area has the greatest acreage needs for walking facilities, followed by Briarcliff/Winnwood, and Red Bridge. The Council District with the highest walking facilities need is District 5 followed by District 6 and 1.

The table also provides a breakdown of what percent of the districts residential, commercial, and retail acreage falls into each of the three Walking Facility Needs categories. In addition, this table provides for a percent allocation of all high, medium, and low walking facility needs by district.

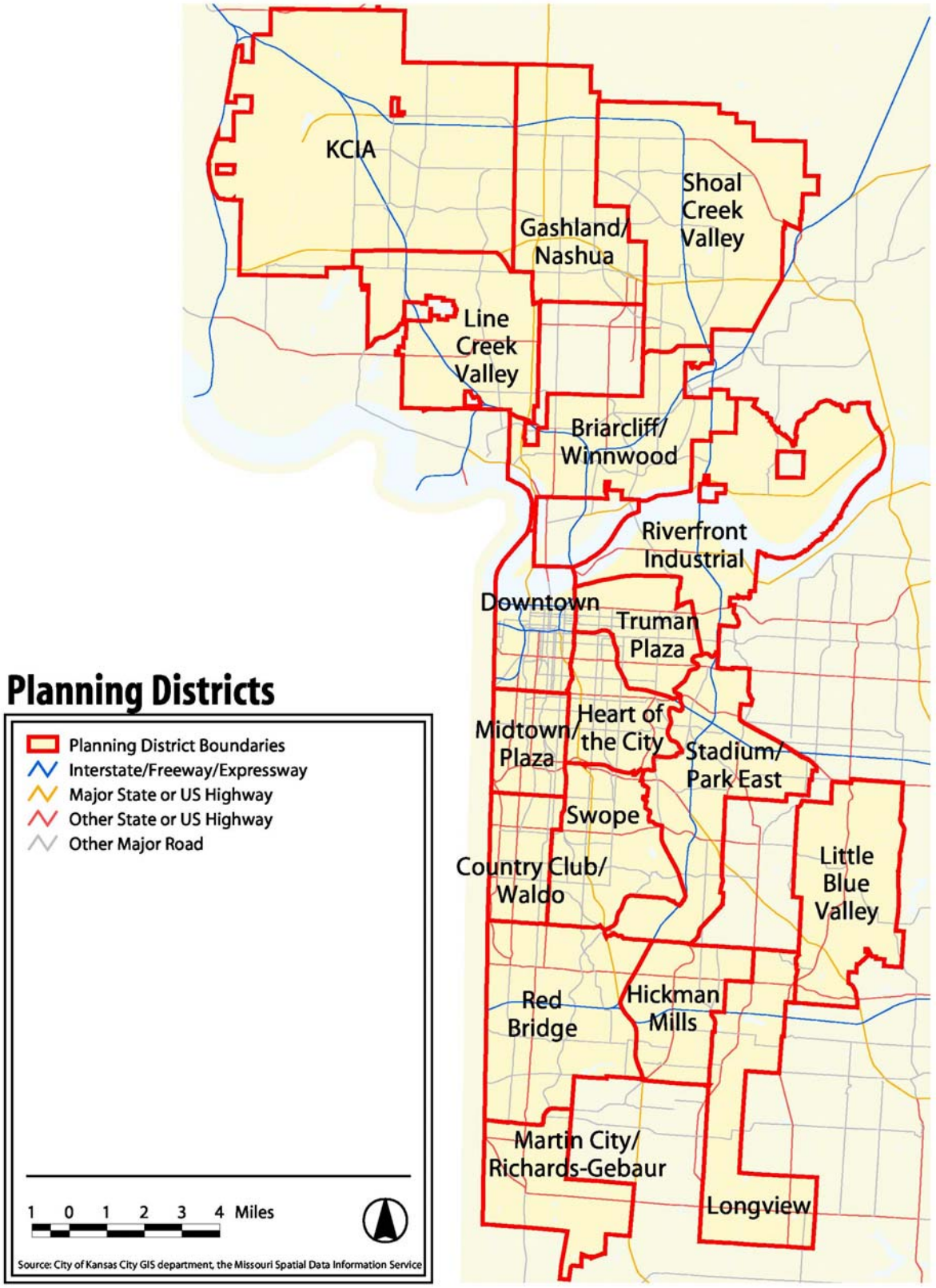
Walking Facility Needs Cost Estimates and District Allocation

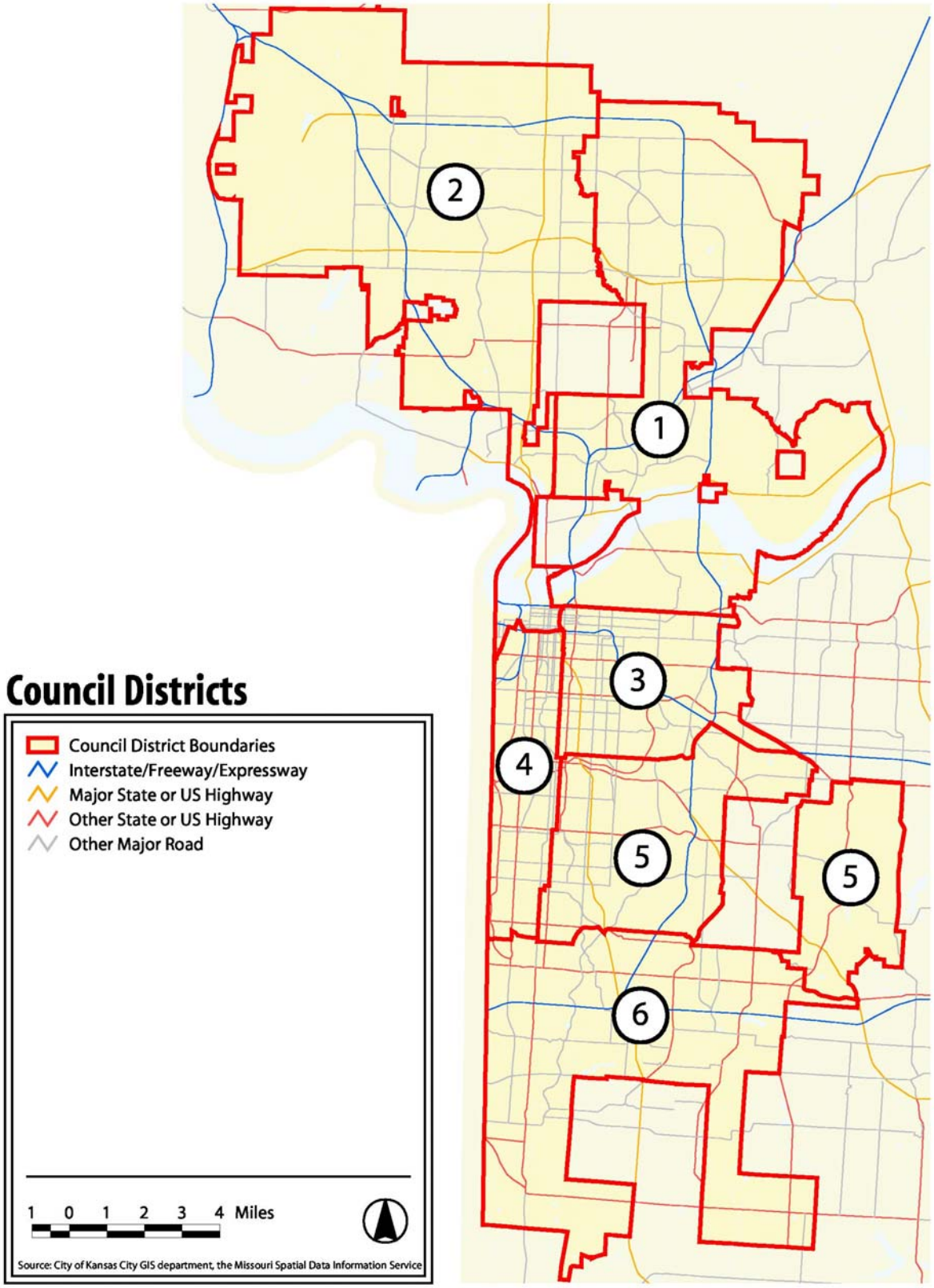
Determining the total walking facility cost estimate for the City of Kansas City is difficult if not impossible. As an example, City staff calculated a few years ago that it would take approximately $650 million to construct sidewalks on every street within Kansas City. In all likelihood, this estimate would likely increase significantly as engineering issues surface and legal suits are brought forth from residents and businesses favoring no walking facilities over major negative impacts to their front yards or store fronts.

It is also recognized that $650 million or more in walking facility improvements is not affordable and would not be the best use of City's dollars. For the City Manager, Mayor and Council members to be good stewards of the City's limited resources, another method for determining walking needs must be developed.

One approach for determining a realistic and practical walking facility needs can be taken from the Maple Park Neighborhood Self-Assessment Survey process and the subsequent engineering case study analysis (Appendix B). This neighborhood assessment determined that constructing pedestrian sidewalks along both sides of the street per current City code and standard was not only impractical, but also unnecessary. Rather, it was determined that with a limited number of pedestrian improvements, it is possible to achieve a safe pedestrian environment for a neighborhood without having sidewalks on every street.

It is recognized that the range of improvements can be quite significant within an area such as Maple Park and that this need and range of improvement might be even greater when going from neighborhood to neighborhood. As an example, it was found that when examining the Maplewood Park Neighborhood, minimum walking facility improvements for the highest priorities could be provided for approximately $400 per acre for the bare minimum improvements to a more moderate $3,000 per acre estimate that accommodated a higher end set of improvement and which would address more priorities.


KCIA
Shoal Creek Valley
Gashland/ Nashua
Line Creek Valley
Briarcliff/ Winnwood
Riverfront Industrial
Downtown
Truman Plaza
Heart of the City
Midtown/ Plaza
Stadium/ Park East
Swope
Country Club/ Waldo
Little Blue Valley
Red Bridge
Hickman Mills
Martin City/ Richards-Gebaur
Longview
Planning Districts
Planning District Boundaries
Interstate/Freeway/Expressway
Major State or US Highway
Other State or US Highway
Other Major Road
1 0 1 2 3 4 Miles
Source: City of Kansas City GIS department, the Missouri Spatial Data Information Service


Council Districts
Council District Boundaries
Interstate/Freeway/Expressway
Major State or US Highway
Other State or US Highway
Other Major Road
1 0 1 2 3 4 Miles
Source: City of Kansas City GIS department, the Missouri Spatial Data Information Service
1
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6

Walking Facility Needs By Planning District and Council District

		Areas of Need (acres)			Percent of District			Percent of City		
Planning District		**High**	**Medium**	**Low**	**High**	**Medium**	**Low**	**High**	**Medium**	**Low**
1	Downtown	15	251	836	1.3%	22.8%	75.9%	0.2%	1.0%	2.7%
2	Riverfront Industrial	530	488	210	43.2%	39.8%	17.1%	6.3%	1.9%	0.7%
3	Truman Plaza	55	966	2,154	1.7%	30.4%	67.8%	0.6%	3.7%	6.9%
4	Heart of the City	97	1,224	1,790	3.1%	39.3%	57.5%	1.1%	4.7%	5.7%
5	Midtown/Plaza	29	530	1,984	1.1%	20.8%	78.0%	0.3%	2.0%	6.4%
6	Country Club/Waldo	609	350	2,890	15.8%	9.1%	75.1%	7.2%	1.4%	9.2%
7	Swope	768	1,152	2,055	19.3%	29.0%	51.7%	9.1%	4.4%	6.6%
8	Stadium/Park East	1,734	4,259	508	26.7%	65.5%	7.8%	20.5%	16.4%	1.6%
9	Little Blue Valley	206	1,747	3,125	4.1%	34.4%	61.5%	2.4%	6.7%	10.0%
10	Red Bridge	1,543	3,569	2,431	20.5%	47.3%	32.2%	18.2%	13.8%	7.8%
11	Hickman Mills	727	2,129	1,991	15.0%	43.9%	41.1%	8.6%	8.2%	6.4%
12	Longview	19	1,098	1,173	0.8%	47.9%	51.2%	0.2%	4.2%	3.8%
13	Martin City/Richards-Gebaur	210	565	201	21.5%	57.9%	20.6%	2.5%	2.2%	0.6%
14	Briarcliff/Winnwood	1,566	4,127	1,020	23.3%	61.5%	15.2%	18.5%	15.9%	3.3%
15	Line Creek Valley	3	1,639	4,005	0.1%	29.0%	70.9%	0.0%	6.3%	12.8%
16	KCIA	101	495	1,551	4.7%	23.1%	72.2%	1.2%	1.9%	5.0%
17	Gashland/Nashua	261	1,138	2,193	7.3%	31.7%	61.1%	3.1%	4.4%	7.0%
18	Shoal Creek Valley	0	221	1,130	0.0%	16.4%	83.6%	0.0%	0.9%	3.6%
	TOTAL	***8,475***	***25,948***	***31,247***	***12.9%***	***39.5%***	***47.6%***	***100.0%***	***100.0%***	***100.0%***
		Area (acres)			**Percent of District**			**Percent of City**		
Council District		**High**	**Medium**	**Low**	**High**	**Medium**	**Low**	**High**	**Medium**	**Low**
1		2,049	4,615	3,482	20.2%	45.5%	34.3%	24.2%	17.8%	11.1%
2		424	3,787	7,676	3.6%	31.9%	64.6%	5.0%	14.6%	24.6%
3		421	2,808	3,309	6.4%	42.9%	50.6%	5.0%	10.8%	10.6%
4		751	988	5,160	10.9%	14.3%	74.8%	8.9%	3.8%	16.5%
5		2,639	6,493	5,757	17.7%	43.6%	38.7%	31.1%	25.0%	18.4%
6		2,189	7,256	5,864	14.3%	47.4%	38.3%	25.8%	28.0%	18.8%
TOTAL		***8,475***	***25,948***	***31,247***	***12.9%***	***39.5%***	***47.6%***	***100.0%***	***100.0%***	***100.0%***

Applying these low and moderate investment factors to the high and medium walking facility needs, acreages would indicate that the total planning level cost estimates for low end investment improvements would be approximately $14 million and the high end would be $103 million. It should also be noted that these walking facility needs are for constructing pedestrian improvements to accommodate the basic pedestrian connections in areas where the walking facilities are either limited or non-existent. In addition to these walking facility improvements, there are additional needs for areas that already have good walking facility

improvements such as the City's Pedestrian Districts. Although these Pedestrian Districts tend to have good pedestrian improvement, the City has higher standards for these areas, as they are the premier representative areas for a walkable connected City. These Pedestrian District improvements are presented in Chapter Five of this report.

The resulting low and moderate cost estimates for providing walking facilities by Planning District is presented in the following table. These estimates are for both the High and Medium Walking Facility Needs Area. The recommended prioritization would be to target the High Walking Facility Needs Area first and then the Medium Walking Facility Needs Area.

Walking Facility Needs by Planning District

Planning District		High Need Areas		Medium Need Areas		Total H/M Need Areas	
		Low Investment	Moderate Investment	Low Investment	Moderate Investment	Low Investment	Moderate Investment
1	Downtown	$5,821	$43,660	$100,383	$752,876	$106,205	$796,536
2	Riverfront Industrial	$212,045	$1,590,340	$195,371	$1,465,280	$407,416	$3,055,620
3	Truman Plaza	$21,977	$164,828	$386,595	$2,899,460	$408,572	$3,064,288
4	Heart of the City	$38,924	$291,928	$489,443	$3,670,820	$528,366	$3,962,748
5	Midtown/Plaza	$11,592	$86,940	$212,115	$1,590,864	$223,707	$1,677,804
6	Country Club/Waldo	$243,778	$1,828,332	$140,136	$1,051,020	$383,914	$2,879,352
7	Swope	$307,294	$2,304,708	$460,698	$3,455,232	$767,992	$5,759,940
8	Stadium/Park East	$693,718	$5,202,888	$1,703,412	$12,775,592	$2,397,131	$17,978,480
9	Little Blue Valley	$82,515	$618,860	$698,830	$5,241,224	$781,345	$5,860,084
10	Red Bridge	$617,187	$4,628,900	$1,427,532	$10,706,492	$2,044,719	$15,335,392
11	Hickman Mills	$290,807	$2,181,056	$851,453	$6,385,896	$1,142,260	$8,566,952
12	Longview	$7,556	$56,672	$439,201	$3,294,004	$446,757	$3,350,676
13	Martin City/Richards-Gebaur	$83,854	$628,904	$226,061	$1,695,460	$309,915	$2,324,364
14	Briarcliff/Winnwood	$626,338	$4,697,536	$1,650,717	$12,380,380	$2,277,055	$17,077,916
15	Line Creek Valley	$1,266	$9,492	$655,644	$4,917,328	$656,909	$4,926,820
16	KCIA	$40,595	$304,464	$198,057	$1,485,424	$238,652	$1,789,888
17	Gashland/Nashua	$104,543	$784,072	$455,161	$3,413,704	$559,703	$4,197,776
18	Shoal Creek Valley	$-	$-	$88,553	$664,144	$88,553	$664,144
TOTAL		***$3,389,811***	***$25,423,580***	***$10,379,360***	***$77,845,200***	***$13,769,171***	***$103,268,780***

As can be seen, the Walking Facility Needs Assessment suggests that the Stadium/Park East, Briarcliff/ Winnwood, Red Bridge and Hickman Mills are the top four planning areas that have walking facility needs.

In addition to allocating low and moderate pedestrian facility improvements to planning area, the costs were assembled by parcel to Council District levels as presented in the following table.

Walking Facility Needs by Council District

Council District	High Demand Areas		Medium Demand Areas		Total H/M Demand Areas	
	Low Investment	Moderate Investment	Low Investment	Moderate Investment	Low Investment	Moderate Investment
1	$819,785	$6,148,388	$1,846,166	$13,846,248	$2,665,951	$19,994,636
2	$169,642	$1,272,312	$1,514,945	$11,362,084	$1,684,586	$12,634,396
3	$168,508	$1,263,808	$1,123,259	$8,424,444	$1,291,767	$9,688,252
4	$300,462	$2,253,468	$395,288	$2,964,660	$695,750	$5,218,128
5	$1,055,740	$7,918,048	$2,597,110	$19,478,324	$3,652,850	$27,396,372
6	$875,674	$6,567,556	$2,902,592	$21,769,440	$3,778,266	$28,336,996
TOTAL	***$3,389,811***	***$25,423,580***	***$10,379,360***	***$77,845,200***	***$13,769,171***	***$103,268,780***

As can be seen in this table, improvements have been prioritized between high demand areas and medium demand areas. These demand areas were further stratified by low and moderate level of investments. For each of the priority categories, estimated improvement costs have been developed.

Prioritization and Implementation

In order to retrofit the higher pedestrian demand areas that do not have even the basic pedestrian improvements requires a level of funding commitment on behalf of the City. The level of commitment will determine whether the absolute minimum improvements must be made or whether there is the opportunity to make moderate improvements.

Regardless of the level of funding commitment, the improvements should be directed to the walking facility priority areas. Funds could be directed to the Planning District or Council District on an annual basis. If allocated by Council District, Council staff could provide direction for prioritization within the District.

IV. Pedestrian Zone Case Study Evaluations

The *FOCUS Kansas City Plan* designated ten areas throughout the city as "Pedestrian Zones." The plan also established specific urban design and development guidelines to preserve the character and scale of the existing and future development within the designated zones. In addition, the Walkability Plan proposes pedestrian level of service standards to be used to measure existing and potential walkability in Kansas City. The proposed standards differ by type of area, with the highest standards applying to designate Pedestrian Zones.

The intent of the Pedestrian Zone Case Study Evaluations is to reexamine the designated zones and determine the level of general compliance to the existing design guidelines, past recommendations, and proposed pedestrian level of service standards for each study area.

Each evaluation provides an assessment of the existing conditions through a descriptive summary, followed by recommendations that seek to improve the overall pedestrian conditions and compliance with the design guidelines and level of service standards. The suggested recommendations are broken down into a general timeline: Short-Term (0-3 Years), Mid-Term (4-6 Years), Long-Term (Over 6 Years) and ongoing. In addition, planning level cost estimates have been prepared for each pedestrian zone by timeline. A summary of all costs is presented at the end of this chapter.

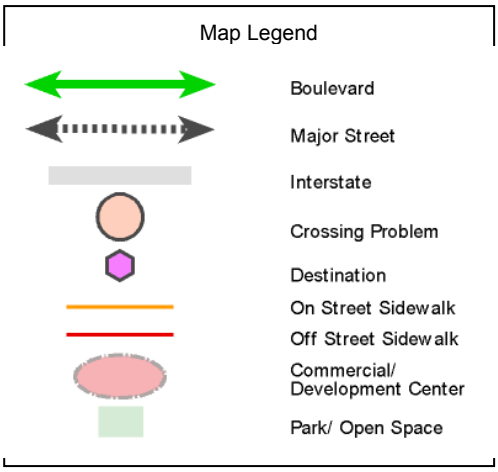
Five different categories were used to rate the existing conditions: directness, completeness, street crossing, visual interest & amenities and security. Directness is the actual pedestrian distance from trip origin to destination. Completeness measures the continuity of an identifiable sidewalk or walkway system. Street Crossing examines the various street crossing elements and the level of ease and safety in which to cross a given street. Visual Interest and Amenities examines the aesthetic and functional qualities of a pedestrian environment. Security measures the degree of safety in regard to separation from vehicles, line of sight and perception.

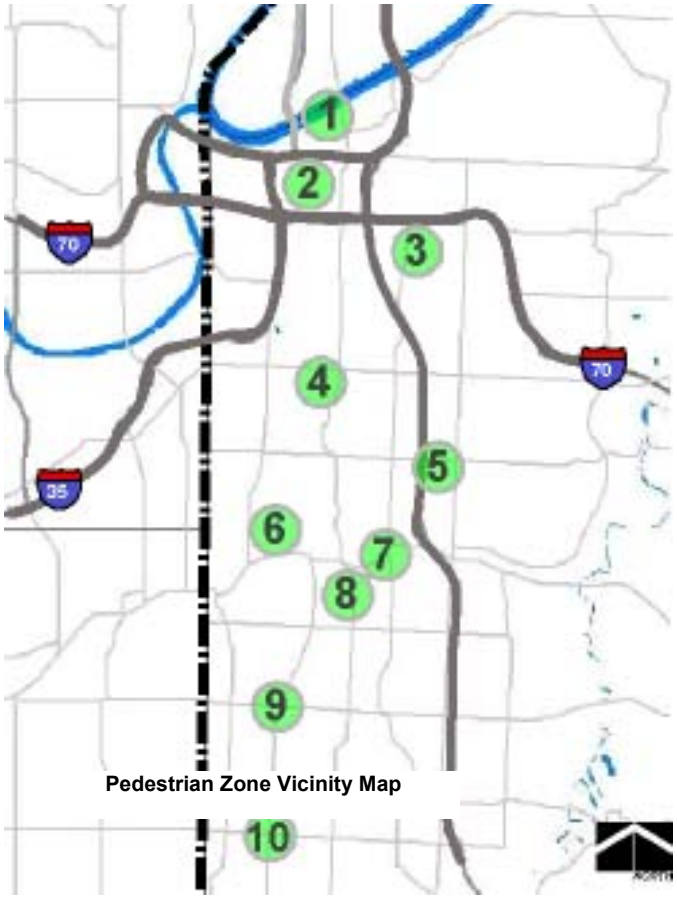
The proposed standard for level of service in each of the five categories against which Pedestrian Zones will be measured, is as follows:

Directness ..... *A*
Completeness ..... *A*
Street Crossings ..... *B*
Visual Interest and Amenities ..... *B*
Security ..... *B*

DESIGNATED "PEDESTRIAN ZONES"

1. Missouri River Front
2. Downtown
3. 18th & Vine
4. Crown Center/Penn Valley/Union Station
5. Linwood & Prospect
6. Plaza/Westport
7. Brush Creek Corridor
8. University of Missouri Kansas City
9. Brookside
10. Waldo





Pedestrian Zone Vicinity Map

Neighborhood/Area: Missouri Riverfront

Location

According to the *FOCUS Kansas City Plan* the Riverfront Pedestrian Zone stretches from the state line east to roughly Olive Street. The study area for this evaluation begins at its western point, the Broadway Bridge, and goes east to Interstate 35 (I-35); focusing on the neighborhoods north and east of I-35.

Description

Riverfront Streetscape

The Kansas City Riverfront is being transformed from a riverfront once dominated by industry (barge and rail), to a more mixed-use pedestrian oriented neighborhood. The old brick warehouses of yesterday, located in the River Market area, are being converted into residential lofts and apartments. Construction of new residential units is also occurring. The result is an area that has preserved the "old town" architecture and scale, yet offering modern amenities and comforts. Offering an alternative to traditional suburban living, the Riverfront has attracted many young professionals, adding to the pedestrian feel. The adjacent Columbus Park neighborhood is a stable and walkable community with a variety of uses and structures. Columbus Park is located in the southeast corner of the Riverfront study area.

The potential for increased pedestrian activity along the Missouri Riverfront area is immense. The 11-mile Heritage Riverfront Trail was listed as one of the highest priority trails in Jackson County in the recently completed Metro Green Plan. Currently, pockets of activity such as the River Market, a developing park system and gaming establishments, account for the majority of the pedestrian activity.

The River Market area benefits from the continuation of the direct roadway system that exists in downtown, but throughout the Riverfront area, numerous obstacles and barriers exist that prevent direct pedestrian travel. These include major roadway, rail, and bridge facilities, as well as heavily overgrown and underdeveloped sections that prevent linear connectivity along the river.

Sidewalks are attached and on both sides of some of the streets in the area, but completeness is lacking in many locations. Older sidewalks in the area are in need of repair. Newer facilities associated with redevelopment activities in the area are excellent, and should be connected to the existing system.

Street crossings can be a major obstacle in the Riverfront area, with highways and major bridges creating significant barriers to the surrounding downtown area and along the Riverfront. Crosswalks are present at major street crossings, but markings are in poor

condition at most. Few bridges cross I-35 into downtown and the high speeds of vehicle travel from the numerous on/off ramps make these crossings especially difficult.

Amenities and visual interest for pedestrians in the River Market are good, as are those in the park system and the gaming areas. As the area continues to redevelop with planned uses like an aquarium, additional riverfront parks, hotel uses, and new residential, the potential for additional pedestrian treatments is very good. Historic locations and structures can be highlighted and emphasis should be placed on direct and continuous facilities along the river.

Security in the area as it exists today is not good in many areas. A lack of lighting, vehicular and pedestrian activity make many places along the Riverfront feel less than secure.

Recommended Improvements

Pedestrian walkability within the Missouri Riverfront study area has improved in recent years. Continued increase in new and converted residential units is expected in the near future. Adherence to existing design guidelines and neighborhood scale, for new construction, and renovation is critical in preserving the pedestrian element and improving walkability. In addition, attempts to better connect the Riverfront to downtown should be pursued. Improving pedestrian connections to downtown along Wyandotte, Main Street, and Grand Avenue should take priority.

Pedestrian Bridge Under Construction

In recent years, the City has contributed to the pedestrian quality of the Riverfront. The construction of the Richard L. Berkley Park, the pedestrian bridge, and the support of the proposed mixed-use development adjacent to Berkley Park all contribute to walkability.

Priority for Improvements in the Missouri Riverfront Area and Vicinity Relate to:

- Preserve pedestrian scale of residential and mixed-use neighborhoods.
- Improve pedestrian connection between areas within the study area (Riverfront, River Market, Columbus Park).
- Improve pedestrian connection to downtown via Wyandotte, Main Street, and Grand Avenue.
- Construct proposed Heritage Trail.

General Timeline

Short-Term Recommendations - 0-3 Years:

- Repaint crosswalk markings at high pedestrian demand crossings in River Market area.
  +/-60 intersections x 25% key locations x $1,500.00 *$22,500*

- Complete the sidewalk system where gaps exist around the River Market.
  +/-40,000 feet x 2 sidewalks x 25% x $25/FT *$500,000*

- Broadway Bridge lighting (improved aesthetics for Heritage Trail).
  Budgeted part of Heritage Trail --

- Additional landscaping and amenities at gateways, open spaces, and along walkways.
  Cost determined on a project-by-project basis – say +/-$500,000 *$500,000*

Short-Term Recommendation Subtotal ***$1,022,500***

Mid-Term Recommendations - 4-6 Years:

- Improve pedestrian connections on highway bridges, between the River Market and Downtown, on Wyandotte Street, Main Street, and Grand Avenue.
  300 feet x 2 x 6-foot wide walk x $50/SF x 3 Bridges *$540,000*

- Enhance 5th Street connection between River Market and Columbus Park.
  2,500 feet x 2 x 5-foot wide walk x $5/SF *$125,000*

- Repair existing sidewalks that are in poor condition.
  +/-40,000 feet x 2 x 35% of walks x $25/FT *$700,000*

Mid-Term Recommendation Subtotal ***$1,365,000***

Long-Term Recommendations – Over 6 Years:

- Develop property south of Berkley Park in a pedestrian orientated manner.
  Through Private Funding --

- Study feasibility of the Downtown Corridor Development Strategy's "North Boulevard" recommendation to reconnect Riverfront to Downtown Loop.
  Study Fee +/- $50,000 *$50,000*

Long-Term Recommendation Subtotal ***$50,000***

Missouri Riverfront Recommendation Totals ***$2,437,500***

On-Going Recommendations:

- Adhere to the vision set forth in the Metro Green Plan.
  - "Metro Green proposed auto-alternative travel for area residents commuting from home to work or school; it heightens awareness of recreation facilities

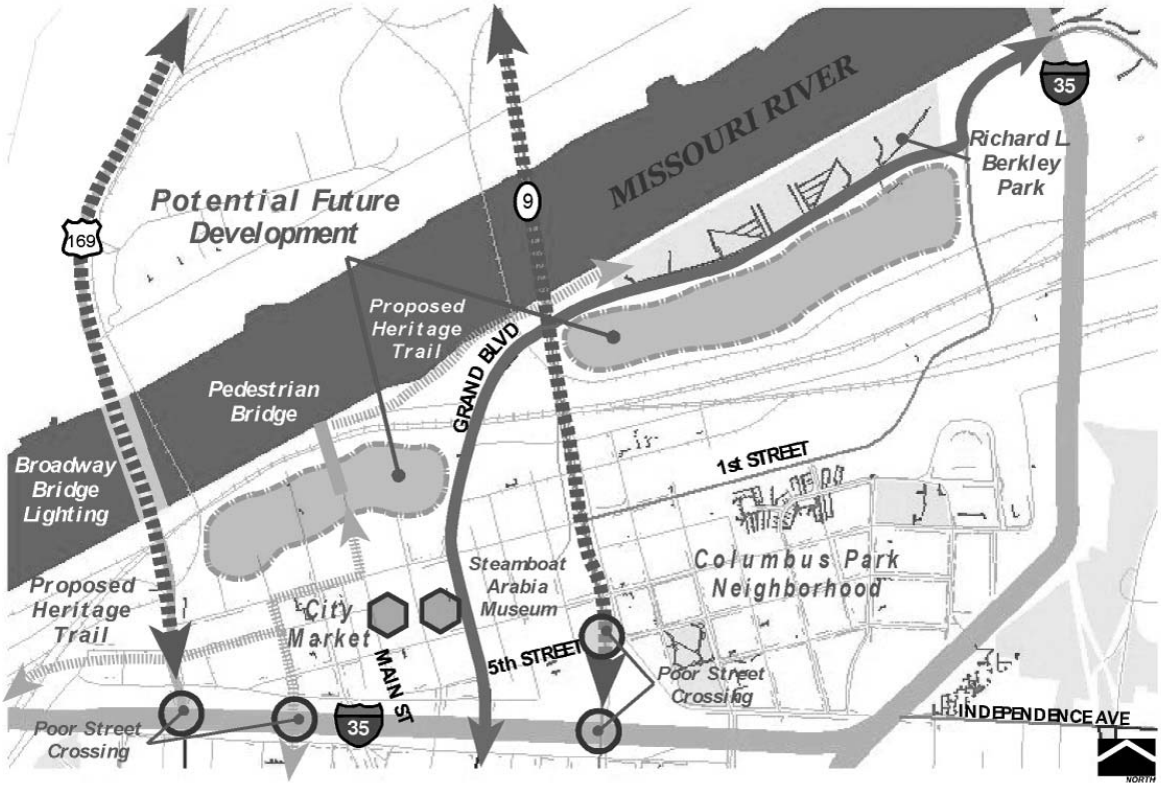
throughout the region and improves access to them; and it connects economic, cultural, and historic destinations…"

- Adhere to the principles and goals set forth in the Riverfront Concept Plans.
    - Attract people to the riverfront.
    - Preserve and enhance wildlife habitat.
    - Provide opportunities for environmental cleanup.
    - Connect parks, boulevards, and Metro Green to the riverfront.
    - Connect regional historical, cultural, and entertainment corridors to the riverfront.
    - Connect regional trails to the rivers.
    - Consider the riverfront as a regional corridor.
- Encourage redevelopment that integrates activities along the Riverfront and provides continuous pedestrian connections.

Pedestrian Mobility Report Card

	Current	Proposed
Directness	*A*	*A*
Completeness	*B*	*A*
Street Crossings	*C*	*B*
Visual Interest and Amenities	*B*	*B*
Security	*C*	*B*

Riverfront Map



The above map illustrates how I-35 separates the Riverfront from the rest of downtown Kansas City

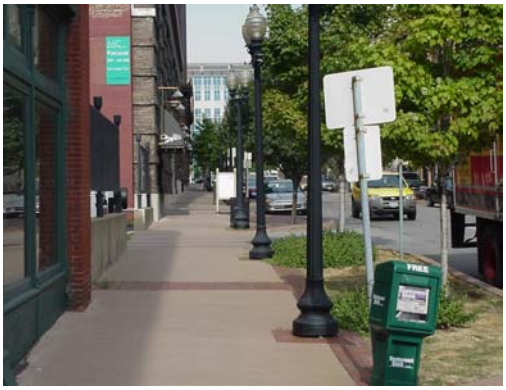
Neighborhood/Area: Downtown

Location

The Downtown Pedestrian Zone is identified in the *FOCUS Kansas City Plan* as the area, within the Downtown Loop, roughly bounded by the four major highways in the area.

Description

Downtown benefits from very short block lengths and a relatively complete sidewalk system throughout the area. Direct connections to and from the various downtown uses are convenient as the mid-day level of pedestrian activity illustrates.



Downtown Streetscape – 7th Street

Sidewalks are attached and on both sides of the street throughout most of the zone. Sidewalks in the area are generally in fair to good condition, though diagonal curb ramps are not present at many intersections. The system is also subject to construction disruption on a seemingly regular basis.

Crosswalks are present at major street crossings, with ample time allocated to pedestrians crossing at most of these locations. The short blocks and one-way couplets disperse traffic volumes well in the downtown, making it relatively easy to cross most streets.

Amenities in the downtown area, east of Main Street, are generally lacking; with many buildings providing little more than a blank wall to accompany the pedestrian. Retail and restaurant frontages present an occasional awning, but landscaping and vegetation are limited to parks, some key fountains, and the interior spaces of larger buildings. This is a problem not only relating to lack of visual amenity but also lack of shelter from the elements, a particular problem in summer and winter. Large areas of surface parking and underdeveloped areas, particularly on the east and south sides of downtown, serve as barriers to pedestrians. The walking environment on the west side is more aesthetically attractive than other areas downtown.

"Avenue of the Arts"

Security during the day is good, but activity levels drop off significantly after the 8 to 5 workday is complete. Residential areas on the west edge of downtown are changing this character, but diminished activity throughout most of the area limits the feeling of security.

After hours pedestrian traffic is more prevalent in certain downtown districts. Western districts, such as Quality Hill and the Garment District, have higher levels of pedestrian use compared to other downtown districts.

Recommended Improvements

The number of residents living downtown has steadily increased over the past five years. This has accompanied the construction and renovation spurt of residential units downtown and the increase in foot traffic on the west side. Along with continued growth on the west side, new redevelopment projects have been planned for adjacent downtown areas. The conversion of vacant buildings into lofts surrounding the site of the proposed new downtown library and proposed mixed-use "SoLo" District are both pedestrian oriented. In addition the proposed "Performing Arts Center," to be located just south of Bartle Hall (adjacent to "Avenue of the Arts"), could promote more after business pedestrian traffic.

Five or six lane busy arterial streets divide the downtown districts. Many of these streets have inadequate pedestrian crossings and few if any have landscaped pedestrian refuges. To promote the walkability between districts an effort should be made to minimize these divides throughout the entire downtown. The downtown loop itself creates the biggest divide. Interstate 35/70 to the north and Interstate 670 to the south divide the "Loop" from the Riverfront to the north and the Crossroads and Westside to the south and southwest. The perceived barrier hinders pedestrian traffic in and out of the "Loop." Most bridges and overpasses connecting the "Loop" to the adjacent areas were designed for the automobile and not with the pedestrian in mind. Pedestrian connections to the north should be made first along Wyandotte, Main Street, and Grand Avenue. To the south pedestrian connections on Broadway, Wyandotte, Grand Avenue, and Oak Street should take priority.

Priority for Improvements in the Downtown Area and Vicinity Relate to:

- Improved pedestrian connection between downtown districts.
- Improve pedestrian connections to adjacent areas outside the "Loop."
- Improve perception of safety through better lighting.
- Beautify downtown districts.

General Timeline

Short-Term Recommendations – 0-3 Years

- Provide adequate lighting in evening activity areas yet to be determined.
  +/-2,000 feet of roads need additional lighting x $100/FT *$200,000*

- Incorporate additional landscaping and amenities on street corners and public sidewalks.
  Cost determined on a cost-by-cost basis – say +/-$500,000 *$500,000*

- Incorporate traffic calming techniques and pedestrian friendly crossings at identified intersections and/or crossings.
  Assuming 9 intersections x 2,500 SF new revised pavement x $35/SF = $787,500 + $15,000 for storm — *$802,500*

- Build and maintain proposed downtown portions of "Heritage Trail."
  Budgeted per Heritage Trail project — --

- Litter program.
  Additional maintenance cost to the City from maintenance budget – say +/-$200,000 — *$200,000*

Short-Term Recommendation Subtotal — ***$1,702,500***

Mid-Term Recommendations – 4-6 Years:

- Repair existing sidewalks that are in poor condition.
  +/-70,000 feet x 2 x 35% of walks x $25/FT — *$1,225,000*

- Promote walkability through downtown corporate sponsors and programs.
  From other budgets — --

- Use proposed Performing Arts Center to minimize perceived divide over I-670 by improving the safety, convenience, and aesthetics of existing pedestrian connections along Broadway and Wyandotte.
  Cost will vary depending on the level of improvements desired – say +/-$200,000 — *$200,000*

Mid-Term Recommendation Subtotal — ***$1,425,000***

Long-Term Recommendations – Over 6 Years:

- Study feasibility of the Downtown Corridor Development Strategy's "North Boulevard" recommendation to reconnect Riverfront to Downtown Loop.
  Study Fee - say +/- $50,000 — *$50,000*

- Update "Downtown Streetscape Manual" to address character of different districts as advocated in FOCUS.
  Budget to be determined – say +/-$25,000 — *$25,000*

Long-Term Recommendation Subtotal — ***$75,000***

Downtown Recommendation Totals — ***$3,202,500***

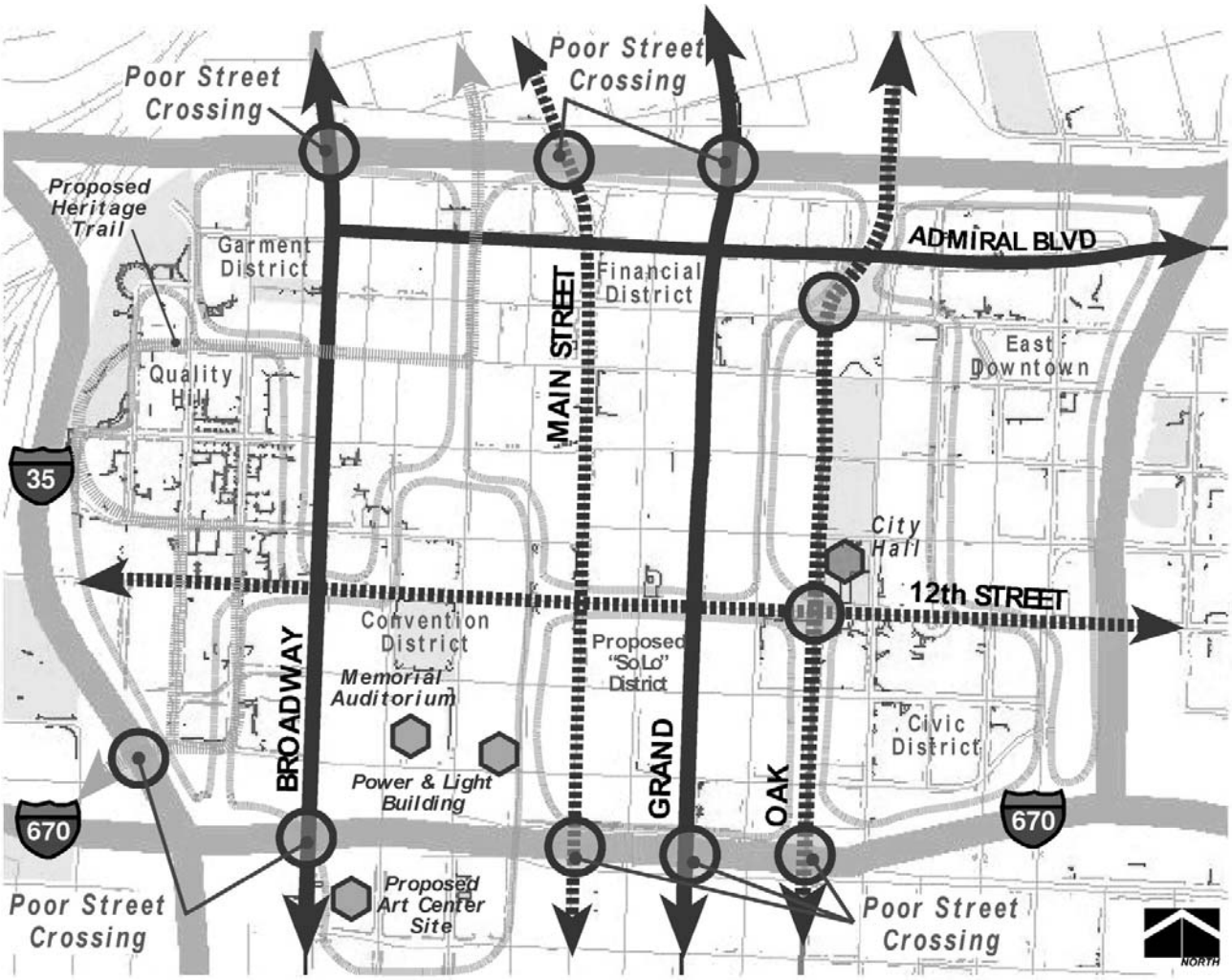
On-Going Recommendations:

- Adhere to the principles set forth in the Downtown Corridor Development Principles and *FOCUS* plans.
    - Surround with residential uses.
    - Create new parks.
    - Buildings placed to define open space.
    - Locate ground floor retail on key corners and facades around park areas.
    - Preserve historic building stock.
    - Streets should be "activated" by front doors.
    - Parking placed on interior.
    - Shared parking preferred.
    - Use new development and pedestrian links to diminish interstate "loop."
    - Promote "Avenue of the Arts."
    - Minimize impact of service areas on pedestrian environment.
- Encourage redevelopment that promotes walkability through planning and design practices.
- Adhere to vision set forth in the Metro Green Plan.
- Increase police protection and security during non business hours to create perception of safety in public places.

Pedestrian Mobility Report Card

	Current	Proposed
Directness	*A*	*A*
Completeness	*A*	*A*
Street Crossings	*C*	*A*
Visual Interest and Amenities	*D*	*B*
Security	*C*	*B*

Downtown Map



Neighborhood/Area: 18th & Vine

Location

The 18th and Vine Pedestrian Zone is identified in the *FOCUS Kansas City Plan* as a one-mile wide circular zone surrounding the American Jazz Museum at 18th and Vine, located a half mile southeast of the Downtown Loop. Eighteenth Street is three blocks south of Truman Road and Vine Street is one block east of The Paseo Boulevard.

Description

Many of the recent investments in the 18th and Vine Pedestrian Zone have helped make it a high quality pedestrian area. The national attraction of the American Jazz Museum provides a focal point for pedestrian activity and increases the pedestrian friendliness of the area in general.

The area provides good directness as the sidewalk system follows the local grid system of streets. An exception is the lack of sidewalk connection from the Parade and the Gregg Community Center to Parade Park Homes. A sidewalk connection is needed in the vicinity of 16th Terrace or 17th Terrace. Perceived barriers that separate the district are to the north and south. Interstate 70 (I-70), to the north, and the rail lines, to the south, make the distance to adjacent residential neighborhoods seem further than it actually is.

18th & Vine District

In general, the sidewalk system is complete and integrated with the community. The pedestrian network at the American Jazz Museum at 18th and Vine provides a center point for the area. The area has a complete and continuous sidewalk system. However, sections of sidewalk away from the American Jazz Museum have fallen into disrepair.

Deterioration Adjacent to Pedestrian Zone

In general, streets are relatively easy to cross as the local street widths and traffic volumes are relatively low and pedestrian in scale. The 18th and Vine speed humps further state that this is a pedestrian district. One street that can be intimidating to cross is Paseo Boulevard. With both high speeds and high traffic volumes at certain times of the day, crossing The Paseo is not inviting, particularly for those that are less able. In addition, there are no street crossings of any

type for a half-mile stretch of The Paseo between 19th Street and 22nd Street.

The overall area contains very good visual interests and amenities near the American Jazz Museum, but it is diminished as one radiates away from the facility. The area south of 18th Street between The Paseo and Woodland has problems with vacant buildings in deteriorated condition, debris, and bad curbs. General maintenance and upkeep would benefit the area.

Security appears reasonably good within the study area, particularly near the museums. There is a perception that security and safety deteriorates as one moves off 18th Street. Again, examples of poor maintenance and structure deterioration reinforce this perception.

Recommended Improvements

Much effort has been made in recent years to promote and redevelop the 18th & Vine Historic District. The Gem Theater, American Jazz Museum, and the Negro Leagues Baseball Museum are all located in the historic district and add to the pedestrian feel. To improve this pedestrian area these attractions should be used as the catalyst to bring in additional pedestrian oriented redevelopment. The addition of new apartments and senior housing within the district, along with the solid Parade Park homes on the edge of the district, and retail and office uses will bring around the clock pedestrian traffic to the area. This in turn would improve security and safety.

Two major residential and mixed use redevelopments are located within a mile of the 18th and Vine District—South Vine and Beacon Hill—along with existing higher density housing north of I-70. Improvement of pedestrian connections to these neighborhoods is very important. When the South Vine project is complete, Vine Street will become a major pedestrian connection to 18th and Vine, so the design of improvements to accommodate all modes of transportation including transit, bicycle and walking will be important. The 22nd Street crossing of The Paseo will become a key link to the Beacon Hill area and should be carefully designed to accommodate pedestrians.

The study area is located in a portion of the city that is highly dependent on public transit and alternative forms of transportation in general. Pedestrian connections that provide a convenient, safe and maintained route to the district will create more foot traffic.

Priority for Improvements in the 18th and Vine Area and Vicinity Relate to:

- Improved street crossings at 18th and The Paseo and 22nd and the Paseo.
- Pedestrian connections across Woodland from Parade Park at 16th or 17th Street Terrace.
- Curb replacement, curb ramps to assure continuous pathways for people with disabilities.
- Property maintenance and nuisance abatement.

General Timeline

Short-Term Recommendations – 0-3 Years:

- Enhance and add to existing landscaping and tree plantings along 18th Street.

  Budget to be determined – say +/-$200,000 *$200,000*

- Maintain the pedestrian network around the American Jazz Museum.
  Additional maintenance cost to the City from maintenance budget - say +/-$100,000 *$100,000*
- Work with adjacent property owners to improve maintenance and upkeep immediately outside the core area.
  From other budgets --
- Improve sidewalk connections between 18th & Vine Historic District and "The Parade" along Paseo and Vine Street.
  +/-3,000 feet of new sidewalks x $25/FT *$75,000*

Short-Term Recommendation Subtotal ***$375,000***

Mid-Term Recommendations – 4-6 Years:

- Construct a sidewalk connection across Woodland Avenue into the Gregg Community Center at either 16th Terrace or 17th Terrace.
  Budget - say +/-$10,000 *$10,000*

- Provide pedestrian amenity improvements, such as benches and pedestrian scale street lighting on corridors and routes that bring you into the American Jazz Museum area.
  Budget to be determined - say +/-$250,000 *$250,000*

- Improve pedestrian crossing at 18th and The Paseo Boulevard with a pedestrian, clear crosswalk designation, and ramp connections at the southeast corner around the gas station, in order to better connect the district to downtown.
  Budget - say +/-$15,000 *$15,000*

- Provide pedestrian connections to neighborhoods north of I-70 and south of rail lines.
  Budget - say +/-$100,000 *$100,000*

- Complete the 22nd Street crossing of The Paseo with a minimum "C" pedestrian level of service standard.
  Budget - say +/-$50,000 *$50,000*

- Complete Vine Street improvements with Pedestrian Zone level of service standards.
  Cost will vary depending on the level of improvements desired – say +/-$200,000 *$200,000*

Mid-Term Recommendation Subtotal ***$625,000***

Long-Term Recommendations – Over 6 Years:

- Incorporate district into any future mass and/or alternative transit project.

By others	--
Long-Term Recommendation Subtotal	**--**
18th & Vine Recommendation Totals	***$1,000,000***

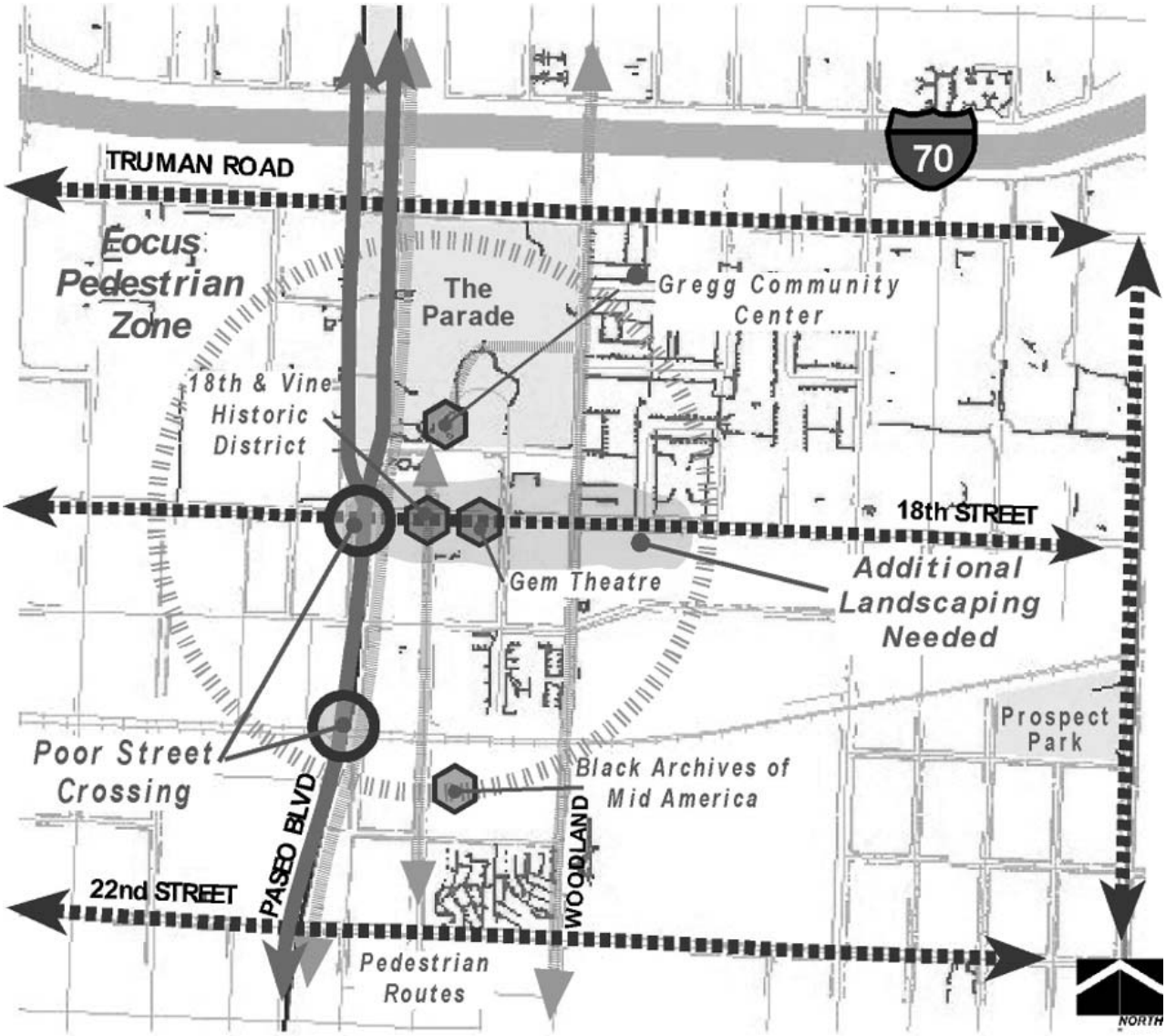
On-Going Recommendations:

- Encourage redevelopment that encourages walkability and compliments the existing pedestrian scale.
- Address security and safety concerns for district and adjacent neighborhoods by incorporating Crime Prevention Through Environmental Design standards supported by the *FOCUS Kansas City Plan*.
- Increase the number of pedestrians in area through construction of new housing and commercial space that would provide neighborhood services to residents.

Pedestrian Mobility Report Card

	Current	Proposed
Directness	*A*	*A*
Completeness	*C+*	*B*
Street Crossings	*B-*	*A*
Visual Interest and Amenities	*C+*	*B*
Security	*B*	*A*

18th & Vine Map



Neighborhood/Area: Crown Center/Penn Valley/Union Station

Location

The study area is located between the downtown and midtown areas. Rail lines, just south of 22nd Street, form the northern border and 27th Street is the southern border; Broadway to the west and Gillham to the east.

Description

The Crown Center/Penn Valley/Union Station is recognized as a premier center in Kansas City with significant activities to make it a desirable pedestrian environment. This area however has very large blocks that make pedestrian trips long and in many cases indirect. The sidewalk system in the area is relatively complete throughout the area.

Main Street, Looking South

Sidewalks are generally detached, landscaped and well maintained. An exception is the sidewalk south of Pershing on Main Street. This stretch of sidewalk is in disrepair, has poor visual interest, and poor security due to the large retaining wall and low pedestrian volume.

Although crosswalks exist at the major intersections and these intersections are signalized, street crossings can be difficult, given the size, traffic volumes and travel speeds along the major streets.

The “Link” at Crown Center

Named the “Link,” a secondary walkway system has been added connecting Union Station and the office and residential buildings within Crown Center. The walkway offers protection of safety and climate. While this treatment is safer for some, these pedestrians are not on the street and that detracts from the active, pedestrian character the area could offer.

Amenities are prevalent in the area; however, many of these amenities are of a grand architectural scale and not the smaller scale details favorable for a pedestrian environment. Ground level improvements, such as the Bloch Fountain and additional landscaping, have been added in recent years; creating a more pedestrian-feel. The Crown Center Square, located on Grand, is a large public space with a fountain that hosts many seasonal and cultural events.

The adjacent Penn Valley Park, home to the renovated Liberty Memorial, is one of Kansas City's largest parks. Penn Valley Park is also host to many city-sponsored events and festivals. Considered underutilized by some, the park is separated from adjacent neighborhoods by major traffic ways and steeps slopes.

Security at Crown Center and Union Station is high, both due to the presence of traveling vehicles and existing pedestrian traffic. The area is also well lit. Penn Valley Park is perceived safe during daylight. However, after night falls and park attendance decreases the perception of safety and security diminishes.

Recommended Improvements

The Crown Center/Penn Valley/Union Station area is a major asset to Kansas City. Each of the three sections is very walkable within their boundaries. However, connection between these sections and their adjacent neighborhoods needs improvement. Main Street divides the study area. Attempts to minimize this divide between Crown Center and Penn Valley Park should be sought. Similar attempts to minimize the divide between Union Station and Penn Valley Park, caused by Pershing Road, should also be studied.

Pedestrian connection to adjacent neighborhoods and major land uses is currently hindered by busy traffic ways and existing topography. Interstate 35, Southwest Trafficway, Broadway, 31st Street, Gillham Road and rail lines surround the area. Also, the steep slopes created by the bluffs create additional barriers. Better connection to surrounding areas would increase pedestrian traffic and park use. Union Hill, Freight House District, Longfellow Neighborhood and Hospital Hill are surrounding areas that could help increase pedestrian traffic with better connections.

The Crown Center/Penn Valley/Union Station area is very large in size. However, compared to other areas similar in size in the urban core, the number of actual residents and housing units is relatively low. Future proposed residential developments, pedestrian oriented in nature, should be considered.

Priority for Improvements in the Crown Center Area and Vicinity Relate to:

- Improved street crossings along Main Street at Pershing and 25th Street.
- Improve pedestrian connections between study area and adjacent Union Hill, Freight House District, Longfellow Neighborhood, and Hospital Hill.
- Connect study area to Heritage Trail.

General Timeline

Short-Term Recommendations – 0-3 Years:

- Develop and print pedestrian walking route brochures including the entire pedestrian zone.
  By the City, separate budget --

- Identify key mid block pedestrian crossings across Main Street and Pershing Road and install appropriate pedestrian crossing features.
  Assume 4 locations x $50,000 — *$200,000*

- Identify key pedestrian crossings into adjacent neighborhoods and install appropriate pedestrian crossing features.
  Assume 10 intersections x $50,000 — *$500,000*

Short-Term Recommendation Subtotal — ***$700,000***

Mid-Term Recommendations – 4-6 Years:

- Construct pedestrian bridge connecting Union Station to the Freight House District.
  Option 1: Use existing Main Street bridge and create pedestrian mall +/-800 feet x 10 x $30/FT — *$240,000*

  Option 2: New bridge - +/-800 feet x 10 x $85/FT — *$680,000*

- Incorporate area into any future mass and/or alternative transit project.
  By others — --

- Connect study area to proposed "Heritage Trail."
  Budget – say +/-$150,000 — *$150,000*

Mid-Term Recommendation Subtotal — ***$390,000 - $830,000***

Long-Term Recommendations – Over 6 Years:

- Encourage private development of *FOCUS* recommended office building on parking lot north of park that incorporates street-grade access and multi-modal activities within area.
  By others — --

Long-Term Recommendation Subtotal — ***--***

Crown Center/Penn Valley/Union Station Recommendation Totals — ***$1,090,000 - $1,530,000***

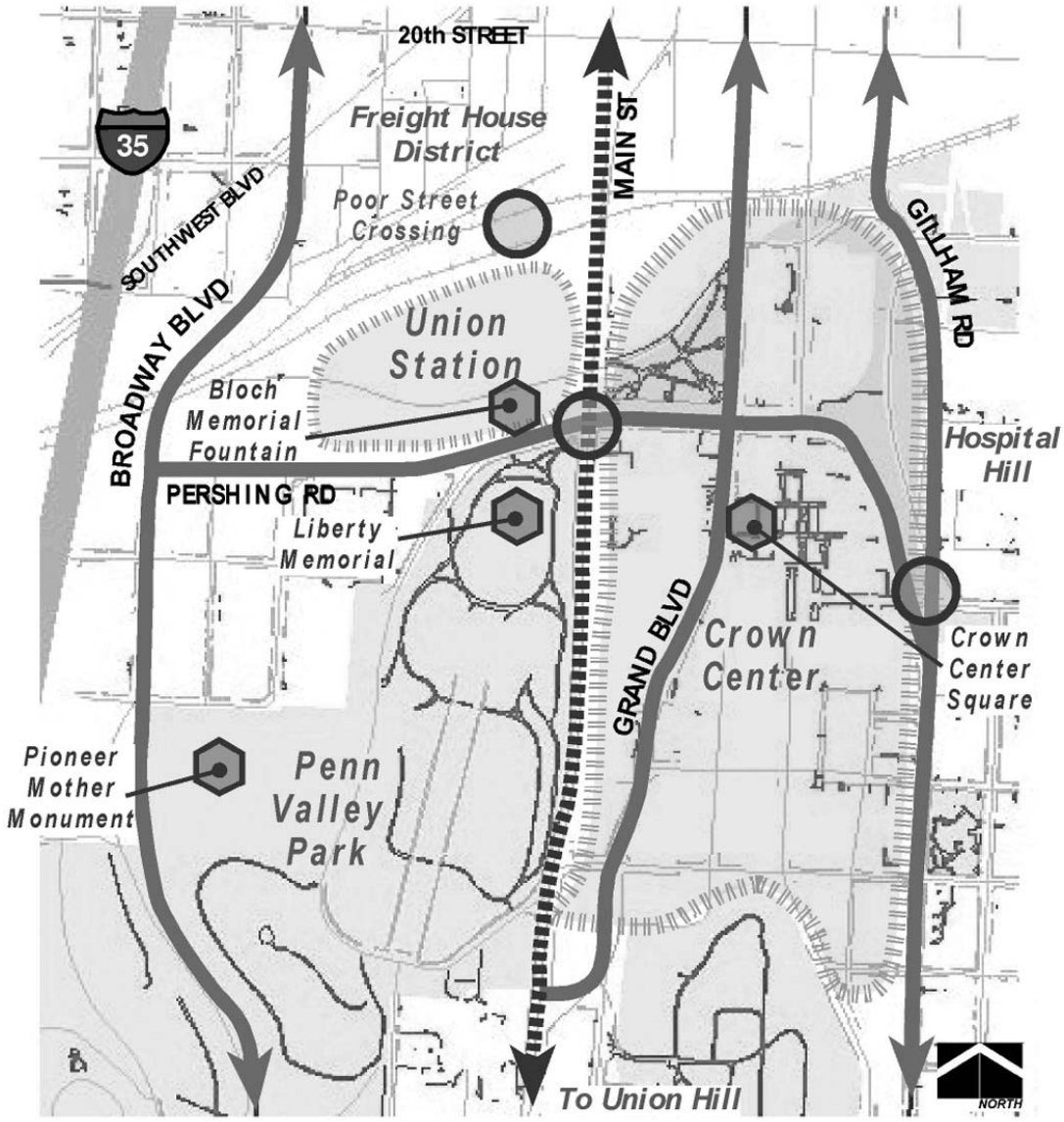
On-Going Recommendations:

- Adhere to the principles set forth in the *FOCUS Kansas City Plan*.
- Promote mixed-use development, including residential and ground level retail.

Pedestrian Mobility Report Card

	Current	Proposed
Directness	*B*	*A*
Completeness	*A*	*A*
Street Crossings	*B*	*A*
Visual Interest and Amenities	*B*	*A*
Security	*A*	*A*

Crown Center/Penn Valley Park/Union Station Map



Neighborhood/Area: Linwood & Prospect

Location

This Pedestrian Zone is identified in the *FOCUS Kansas City Plan* as a one-mile wide circular zone surrounding the intersection of Linwood Boulevard and Prospect Avenue. Linwood runs east/west and is one block south of 31st Street. Prospect runs north/south and is located east of The Paseo Boulevard and west of Benton Boulevard. The intersection of Linwood and Prospect is three blocks west of Benton Boulevard.

Description

The area benefits from a grid system of relatively short block lengths and a complete sidewalk system throughout the area. Direct connections to the adjacent residential areas are convenient and the commercial attractions are accessible.

The sidewalk system is relatively complete and was built in an era of landscaped parkways between the street and sidewalks. Portions of the landscaped parkways are unkempt with missing trees, un-groomed landscaped lawns and debris. Parts of the sidewalks system are in need of repair, while other have been recently replaced and are in excellent condition

The signalized crosswalks are not adequate for the intersection. However, the number of lanes and the existing scale in some areas, along Linwood and Prospect, do promote walkability. Enhancements to some of the crossings, such as paint, signage, benches, and landscaping would improve area safety and aesthetics. Increasing the allotted time to electronic crosswalks and the possible addition of pedestrian refuges would improve the existing walking conditions.

Streetscape along Linwood Boulevard

Whereas the Linwood and Prospect neighborhood has the makings of an attractive and appealing area for pedestrian mobility and activity, neglect in maintenance is uninviting and overrules the area's pedestrian friendly architectural and aesthetic opportunities.

Although the area tends to have adequate lighting and visual lines of sight, overall security is affected by the appearance of neglect and deterioration, which might affect the perception of security and public safety in the area.

Recommended Improvements

The Linwood & Prospect intersection has experienced redevelopment and refurbishment in recent years. Many local and chain businesses have constructed new facilities, in the process replacing sidewalks and adding attractive landscaping. However, much of the new development has been in the form of strip malls and other auto-oriented development, taking

away from the pedestrian scale of the neighborhood. Future redevelopment should be encouraged in a pedestrian oriented manner.

Some older structures along Prospect and within a few blocks of the intersection are in disrepair and in need of maintenance and upgrade. Maintenance programs for both public and private property are needed. This would improve the overall aesthetics of the area and lessen the perceived safety concerns of the area.

Priority of Improvements in the Linwood & Prospect Area and Vicinity Relate to:

- Encourage future redevelopment to build in a pedestrian oriented manner.
- Improve overall aesthetics and condition of derelict public and private property.
- Improve perception of overall safety.
- Incorporate alternate forms of transportation in area.
- Improve street crossing conditions.

General Timeline

Short-Term Recommendations – 0-3 Years:

- Promote a district wide maintenance program for the study area, which addresses sidewalk repair and general clean up.
  Part of maintenance budget for the City --

- Maintain existing painted crosswalks.
  Part of maintenance budget for the City --

- Address current problems and inconveniences affecting the large elderly population in regard to pedestrian travel through additional studies and public input.
  Neighborhood Assessment --

- Increase allotted time interval of crosswalk signals.
  Modify signal timing plans +/- $20,000 *$20,000*

  Short-Term Recommendation Subtotal ***$20,000***

Mid-Term Recommendations – 4-6 Years:

- Provide pedestrian amenities, such as benches and shelters along Prospect between 30th Street and 33rd Street.
  Location and budget to be determined on project-by-project basis - say +/- $200,000 *$200,000*

- Create program that encourages private property owners to maintain and beautify their property (i.e., façade rebate).
  By City --

- Designate space along heavily used pedestrian areas to display art from local artists.
  By City --

- Design and build pedestrian refuges on Prospect and 31st Street and the Prospect/ 31st Street intersection and Prospect/Linwood intersection.
  Assume 10 locations x $50,000 / location — *$500,000*

Mid-Term Recommendation Subtotal — ***$700,000***

Long-Term Recommendations – Over 6 Years:

- Create textured/delineated crosswalks to help identify area as pedestrian zone and improve walkability of area.
  +/-22,000 feet x 2 x 6 feet x $4.50/SF — *$1,188,000*

Long-Term Recommendation Subtotal — ***$1,188,000***

Linwood & Prospect Recommendation Totals — ***$1,908,000***

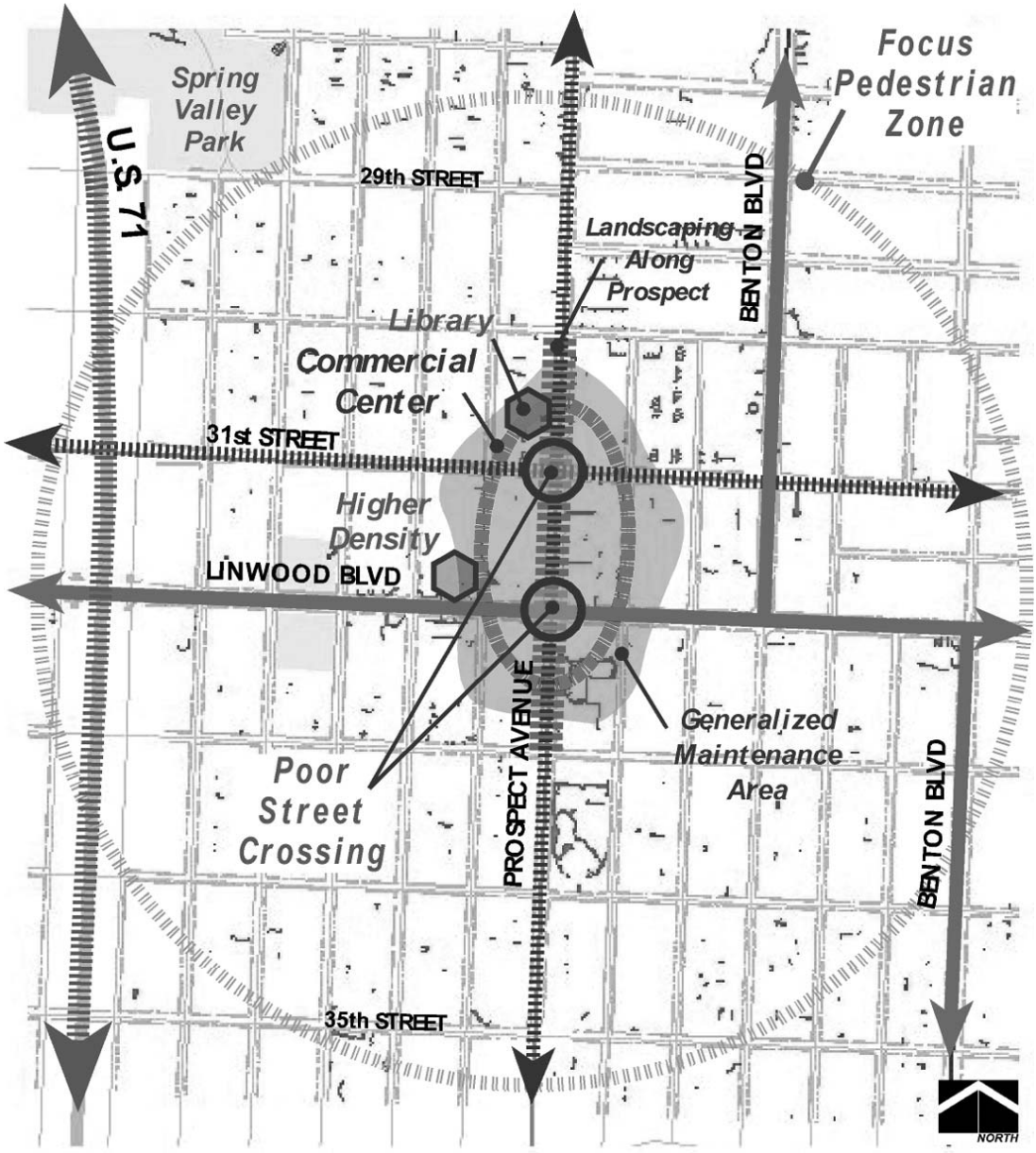
On-Going Recommendations:

- Promote maintenance of area.
- Encourage pedestrian oriented redevelopment at intersection (possibly on existing parking lots).

Pedestrian Mobility Report Card

	Current	Proposed
Directness	*A*	*A*
Completeness	*B*	*A*
Street Crossings	*D*	*B*
Visual Interest and Amenities	*C*	*B*
Security	*C*	*B*

Linwood & Prospect Map



Neighborhood/Area: Plaza/Westport

Location

The Plaza/Westport Pedestrian Zone is identified in the *FOCUS Kansas City Plan* as the area west of Gillham/Rockhill and north of Brush Creek. The study area extends west to roughly the Southwest Trafficway (Belleview) and north to 39th Street.

Description

The Plaza/Westport area is the standard by which all other pedestrian areas in Kansas City tend to be judged. It enjoys a tremendous amount of activity throughout the day and night, with a wide variety of desirable residential, retail, cultural, and employment locations all in close proximity. Direct connections to and from these activities are present throughout the area and block sizes are relatively small.

Main Street and 47th Street Intersection

Sidewalks are attached and on both sides of the street throughout most of the zone, with wider sidewalks in many of the retail and storefront locations. Sidewalks in the area are generally in good condition and diagonal curb ramps are present at most intersections. Off-street trails and pathways are present along the Brush Creek Corridor and in the nearby parks.

While crosswalks are present at most major streets crossings, pedestrians in the Plaza often create their own crossing rule. With the volume (and attitude) of pedestrians in the area, motorists are more aware and frequently yield to crossing pedestrians.

Visual interest and amenities define the pedestrian space in the Plaza and Westport. Storefront retail is among the highest quality in the city. Patio seating areas at restaurants and bars contribute to personality and vitality of the environment throughout the day, and especially at night. Decorative lighting and retail uses with longer than average hours make many areas of the Plaza and Westport feel inviting well into the night. Structured parking limits the dominance of the automobile and reserves the best public spaces for people on foot.

The Plaza/Westport area contains busy streets that range from four to six lanes. These wide roadways hinder pedestrian connections to adjacent neighborhoods and even within the study area. The Main Street and 47th Street intersection, located in the southeast corner of the study area, divides the Plaza from the neighborhoods and cultural attractions to the southeast and east. Crossing both Main Street and 47th Street is difficult and even dangerous. The multiple lanes and high traffic volume create a barrier that separates the trails in Mill Creek Park from the Brush Creek Trail and Trolley Track Trail to the southeast.

The Southwest Trafficway, to the northwest, and Belleview/Roanoke, to the southwest, form the western boundary of the study area. The Trafficway carries high volumes of traffic with vehicles traveling at speeds of over 40 mph. The high speeds and heavy traffic is a formidable challenge to cross for pedestrians and thus divides the Plaza/Westport area from the nearby neighborhoods to the west. The Southwest Trafficway/Westport Road intersection is dangerous to cross by foot. At this intersection Madison and Belleview merge into the Southwest Trafficway and Westport Road, going east, angles 45 degrees northeast while 43rd Street continues due east. This junction creates a hazardous situation in which traffic comes from multiple directions. Both traffic lights and signage are used at the intersection, allowing for right and impromptu turns. In addition crosswalks, signals, and even proper sidewalks don't exist at all corners; leaving pedestrians to maneuver across a random system of traffic islands.

Broadway Boulevard goes through the center of Westport, dividing the Westport area into two sections. The six lanes of traffic, the lack of pedestrian refuges, and the inadequate amount of time allotted for pedestrians at crosswalks makes crossing Broadway less than desirable.

Forty-third Street, an east/west street going through the middle of the study area, shows signs of deterioration and is in need of maintenance and upgrade. The road is only two lanes and is relatively narrow compared to other arterials; still, the street carries a steady flow of traffic. Sidewalks along 43rd Street are narrow, close to traffic, and generally in disrepair.

Country Club Plaza Skyline

Security in the area is excellent due to high activity levels and lighting at area destinations. Security decreases in the study area between destinations as the activity levels taper off and lighting becomes spread out.

Recommended Improvements

The Plaza/Westport area is arguably Kansas City's most well known pedestrian oriented area. The amount of landscaping, public and private amenities, and infrastructure is unsurpassed by any other area in the city. Still, improvements can be made to create pedestrian connections to adjacent neighborhoods and within the study area that promote safety, quality aesthetics, walkability, and minimize the existing road divisions. Pedestrian refuges, updated crosswalks, and traffic calming techniques can be used to better connect the adjacent neighborhoods. Additional landscaping, widened walkways, sidewalk maintenance, and better connection between area parks and activity centers would promote additional pedestrian traffic throughout the entire study area.

Priority for Improvements in the Westport/Plaza Area and Vicinity Relate to:

- Better connect Plaza area to cultural, educational, and residential areas located east and south and west of the Main Street and 47th Street intersection.
- Improve street crossings along Broadway/J.C. Nichols at Westport Road, 43rd Street, and 47th Street.
- Improve sidewalks, streetscape, and lighting along 43rd Street corridor.
- Improve street crossing along Southwest Trafficway at 47th Street, 45th Street, and 43rd Street.
- Minimize 43rd Street divide by creating a "St. Luke's Pedestrian Zone at Wornall Road/43rd Street intersection.

General Timeline

Short-Term Recommendations – 0-3 Years:

- Conduct study that examines potential sidewalk routes that will connect the existing parks and activity centers to each other (Plaza, Westport Square, Mill Creek, St. Luke's Campus).
  Study Fee $30,000 — *$30,000*

- Maintain and enhance existing landscaping and amenities.
  Part of maintenance budget for the City — --

- Improve maintenance of existing sidewalk and infrastructure system and pockets of deterioration and neglect on private property that is present along Madison, Belleview, 43rd Street, Southwest Trafficway, Broadway, and Main Street.
  Part of maintenance budget for the City — --

- Determine key pedestrian crossings into the adjacent neighborhoods of West Plaza, South Plaza, Rockhill, Hyde Park, Midtown, etc.
  Assume 10 crossings x $10,000 — *$100,000*

  Short-Term Recommendation Subtotal — ***$130,000***

Mid-Term Recommendations – 4-6 Years:

- Upgrade and widen determined pedestrian route system incorporating amenities and streetscaping.
  Assuming 27,000 feet x 8 feet x $3/SF — *$648,000*

- Work with St. Luke's Hospital to incorporate pedestrian zone at 43rd Street & Wornall.
  Signals and Pedestrian improvements — *$150,000*

  Mid-Term Recommendation Subtotal — ***$798,000***

Long-Term Recommendations – Over 6 Years:

- Streetscape improvements along 43rd Street between Main Street and Southwest Trafficway.
  Budget to be determined – say +/-$200,000 *$200,000*

- Provide landscaped medians and pedestrian refuges at poor intersections including Main Street and 47th Street, Westport and Broadway, Southwest Trafficway and 47th Street, and Southwest Trafficway and 43rd Street.
  Assume 10 intersections x $50,000 *$500,000*

- Investigate expanding the scope of the proposed CID to include a revenue stream to maintain and enhance pedestrian activities in the area.
  By others --

Long-Term Recommendation Subtotal ***$700,000***

Plaza/Westport Recommendation Totals ***$1,628,000***

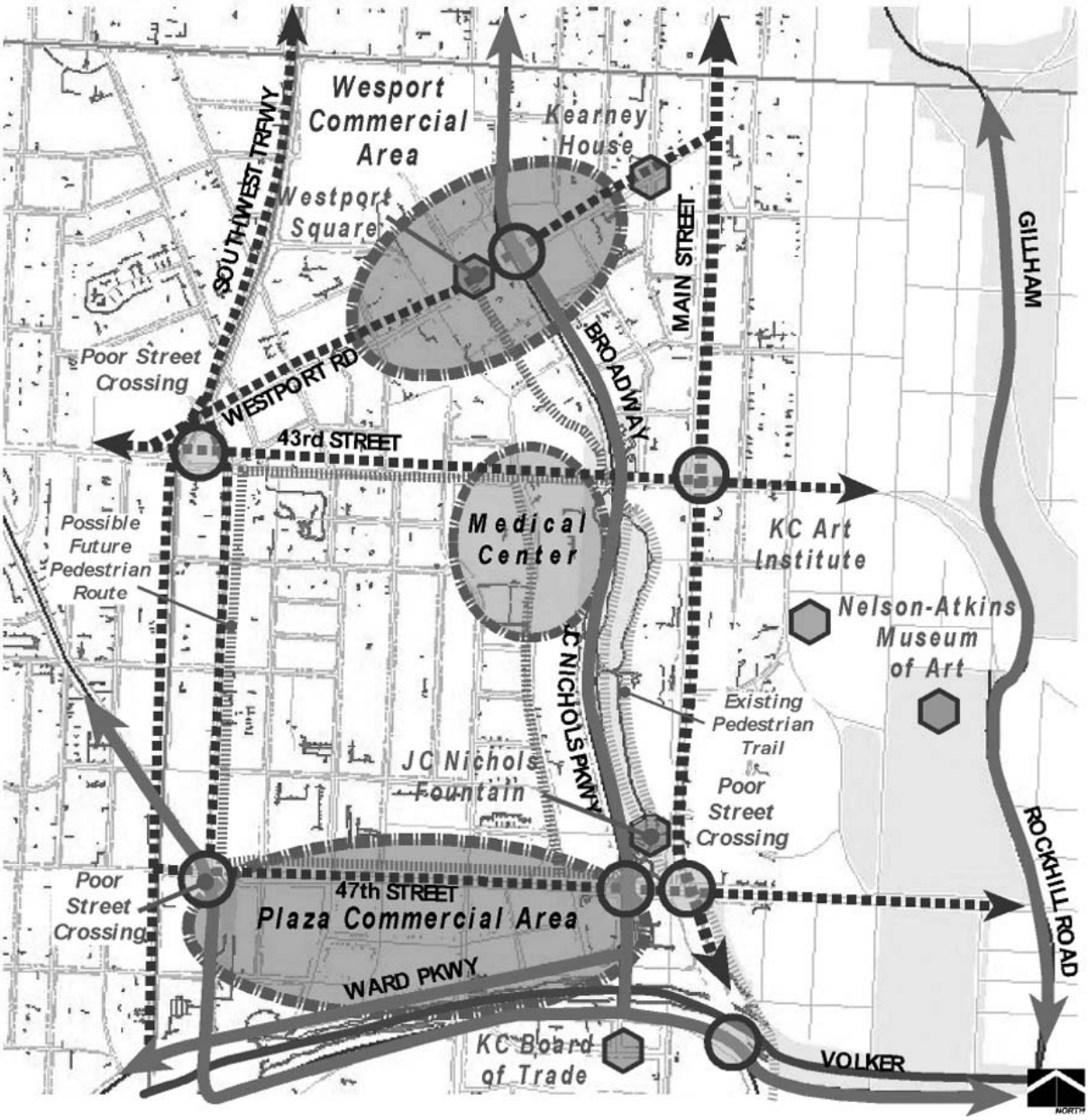
On-Going Recommendations:

- Encourage future redevelopment that promotes walkability.
- Adhere to the vision set forth in the Metro Green Plan.

Pedestrian Mobility Report Card

	Current	Proposed
Directness	*A*	*A*
Completeness	*A*	*A*
Street Crossings	*C*	*A*
Visual Interest and Amenities	*A*	*A*
Security	*A-*	*A*

Plaza/Westport Map



Neighborhood/Area: Brush Creek Corridor

Location

The Brush Creek Corridor is identified in the *FOCUS Kansas City Plan* as a half-mile corridor centered on Brush Creek and stretching from state line to just beyond Cleveland Avenue. Brush Creek itself meanders east/west through Kansas City, staying roughly between 46th Street and 49th Street. The Creek eventually flows into the Blue River, located just east of Van Brunt Boulevard.

Description

Brush Creek has a tremendous amount of activity within ¼ mile in each direction along its length. However, access to the corridor is typically limited to major roadway intersections, which are sometimes as much as ½ mile apart. In some areas, such as the Plaza, direct connections are more frequent and convenient, but further east, connections are less frequent. This contributes to the corridor serving as a pedestrian destination more than a connection.

Wide grade separated pathways are present along many stretches of the creek, often on both sides of the water, with additional sections currently under construction. Connections to the supporting sidewalk network along roadways in the area are good, and due to their relatively recent construction, most are in excellent condition. Major stretches of the corridor are still waiting for this wonderful trail system to expand.

Rockhill Bridge over Brush Creek

The high quality grade separated system along the creek and a few dedicated pedestrian crossings provide excellent street crossings at a few key locations. However, north/south crossings along major arterials on relatively narrow bridges can feel unsafe. Crosswalks are present at major street crossings, but the limited automobile crossings of the creek tend to require large intersections on either side for pedestrians to cross.

Amenities along the developed sections of the creek side trail are excellent, with public art, extensive landscaping, and outdoor seating areas. Fountains along the corridor add to the visual interest and amenities, as well as the architectural grandeur and detail of most of the bridge structures. This quality is balanced against the undeveloped sections, which contrast sharply with the well-developed areas.

Connections to and from the corridor, from the north and south, are hindered. Busy four to six lane trafficways border both sides, making crossing by foot intimidating and very difficult. The remaining older bridges, located primarily to the east, were designed for only automobile traffic. This makes pedestrian movement over the creek difficult to impossible in some areas. However, replacement of these older bridges is planned.

Continuous east/west travel along the Brush Creek Corridor currently is difficult at best. Major north/south roadways, such as Main Street, Troost and The Paseo, carry heavy traffic volumes across the corridor. Other hindrances, such as steep banks, narrow bridges and unfinished trail segments, exist throughout the corridor.

Intersection of Volker Boulevard and The Paseo

Security along the corridor is enhanced by the wide variety and mix of land uses. Many segments of the trail and adjacent sidewalks are highly visible during the day, but activity is significantly decreased at night. Sections of the corridor to the east with larger, more homogenous employment uses and lower density residential feel less secure.

Recommended Improvements

The Brush Creek Corridor has experienced tremendous redevelopment and reinvestment from community leaders in recent years. As future growth occurs efforts should be made to promote pedestrian oriented development and connectivity throughout the Corridor. Improvement in street crossings at major north/south traffic routes is also needed. Improved connection to adjacent neighborhoods to the north and south is critical in the promotion of the Corridor and in increasing pedestrian traffic. Finally, Kansas City should work with the major institutions and community groups (i.e. Brush Creek Community Partners) located along the Corridor to promote and fund pedestrian oriented improvements.

Priority for Improvements in the Brush Creek Corridor Area and Vicinity Relate to:

- Complete creek side trail network.
- Improve street crossings at Main Street, Troost, Paseo, Prospect and Benton/Swope Parkway and Cleveland.
- Improve north/south street crossings along Volker, Brush Creek, Swope Parkway.
- Work with major institutions located along Brush Creek (Nelson Atkins, UMKC, Stower's, Kauffman, Swope Parkway Medical Center) to promote and fund improved connections along Brush Creek and into the Corridor.

General Timeline

Short-Term Recommendations – 0-3 Years:

- Continue expansion of the creek side trail network towards Brush Creek Park on the eastern edge of the corridor.
  By Corps of Engineers and Park --

- Improve safety and aesthetics at pedestrian crossings at Main Street, Oak Street, Troost, The Paseo, Prospect, Benton/Swope Parkway and Cleveland.
  Budget *$500,000*

  Short-Term Recommendation Subtotal ***$500,000***

Mid-Term Recommendations – 4-6 Years:

- Work with UMKC to incorporate walkability into their Rockhill Road improvement plans.
  By City and UMKC – say +/-$200,000 *$200,000*

  Mid-Term Recommendation Subtotal ***$200,000***

Long-Term Recommendations – Over 6 Years:

- Complete one continuous corridor wide trail to connect the east and west neighborhoods along Brush Creek.
  10,560 feet x 10 feet x $5/SF *$528,000*

- Improve walkability connections of bridges that cross Brush Creek.
  Cost will vary depending on the level of improvements desired - say +/-$250,000 *$250,000*

  Long-Term Recommendation Subtotal ***$778,000***

  Brush Creek Corridor Recommendation Totals ***$1,478,000***

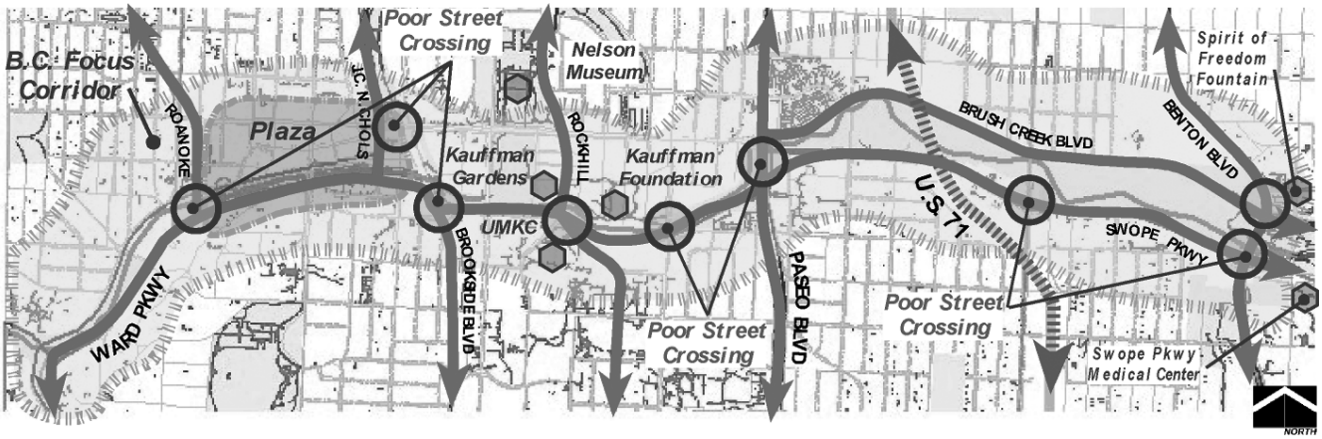
On-Going Recommendations:

- Incorporate pedestrian oriented design and amenities into future bridge construction and/or nearby roadway improvements.
- Work with major institutions and businesses along Brush Creek.
- Adhere to the vision set forth in the Metro Green Plan.

Pedestrian Mobility Report Card

	Current	Proposed
Directness	*B*	*A*
Completeness	*C*	*A*
Street Crossings	*D*	*B*
Visual Interest and Amenities	*B*	*A*
Security	*B*	*A*

Brush Creek Corridor Map



Neighborhood/Area: University of Missouri – Kansas City

Location

The UMKC Pedestrian Zone is identified in the *FOCUS Kansas City Plan* as a one-mile wide circular zone surrounding the center of the UMKC campus. The UMKC campus extends from Volker Boulevard to the north, 53rd Street to the south, Oak Street to the west and Troost Avenue to the east.

Description

The UMKC campus and the immediately surrounding area provide an excellent pedestrian system for its users. Directness is better in this pedestrian zone than any other in Kansas City, with numerous paths across campus that connect the classrooms and other activities.

In addition to the wide walkways on campus, sidewalks are attached and on both sides of the street throughout most of the zone; though coverage and connections to the Brush Creek Corridor are limited to those along major streets and intersections along Volker Boulevard. Sidewalks in the area are generally in good to excellent condition, reflecting their importance to the campus pedestrians. Diagonal curb ramps are present at most intersections.

Stower's Institute, adjacent to UMKC Campus

On campus, crosswalks are present at major street crossings, with ample time allocated to pedestrians crossing at these locations. Signalized mid-block crossings are also present in high volume pedestrian locations, with actuated signals and overhanging flashing yellow lights in one location.

Crossing the street along Volker Boulevard is challenging due to the high traffic volume and road width. Crossing Volker is particularly challenging at the Rockhill Road/Cherry Street crossing. Here three roads meet creating an intersection that is even wider, carrying more traffic in return leaving less time allotted for pedestrian crossing.

Amenities on campus such as benches and excellent landscaping are numerous. Wide pathways and impressive architecture contribute to a strong sense of pedestrian scale, with many areas on campus serving as pedestrian only zones. The car free areas of campus are particularly pedestrian friendly places.

Pedestrian security benefits from heightened campus security patrols and call boxes, but a lack of evening activity on central campus detracts from this feeling in some areas.

Recommended Improvements

Volker Blvd and Rockhill Road Intersection

Similar to other universities, University of Missouri-Kansas City was designed with the walking student in mind. Pedestrian oriented by nature, UMKC main campus was designed with wide sidewalks, landscaping and visual amenities throughout. Deficiencies that do occur end to be more focused on poor connections to the adjacent areas, to the north, west, and east, as opposed to the campus itself. Intersections along Volker Boulevard at Rockhill Road, Oak Street, and Brookside Boulevard are currently the most difficult to cross. Pedestrian connection to the east, across Troost Avenue, to Rockhurst and surrounding neighborhoods needs improvement. However, connection to the neighborhoods south of UMKC is much easier as the campus blends well into the adjacent neighborhood.

Priority for Improvements in the UMKC Area and Vicinity Relate to:

- Improve pedestrian connection to the Plaza and Brush Creek by improving street crossings along Volker Boulevard at Brookside Boulevard, Oak Street, Rockhill Road and Troost Avenue.

General Timeline

Short-Term Recommendations – 0-3 Years:

- Study ways to make problematic intersections along Volker Boulevard more pedestrian friendly and minimize the divide (updated crosswalks, pedestrian refuges, pedestrian signage on roadway etc.)

Study Fee	*$10,000*
Short-Term Recommendation Subtotal	***$10,000***

Mid-Term Recommendations – 4-6 Years:

- Work with UMKC to incorporate walkability into their Rockhill Road improvement plans.

By City - say +/-$200,000	*$200,000*
Mid-Term Recommendation Subtotal	***$200,000***

Long-Term Recommendations – Over 6 Years:

- Provide pedestrian refuges along Volker Boulevard at Brookside Boulevard, Rockhill Road, and Troost Avenue.

10 refuges x $20,000	*$200,000*

- Better define connection to Brush Creek trail system from UMKC campus along Voker at the Oak Street, Rockhill Road, and Troost Avenue intersections.

Steps and ramps by COE / Parks – City participation estimated at $300,000	*$300,000*
Long-Term Recommendation Subtotal	***$500,000***
UMKC Recommendation Totals	***$710,000***

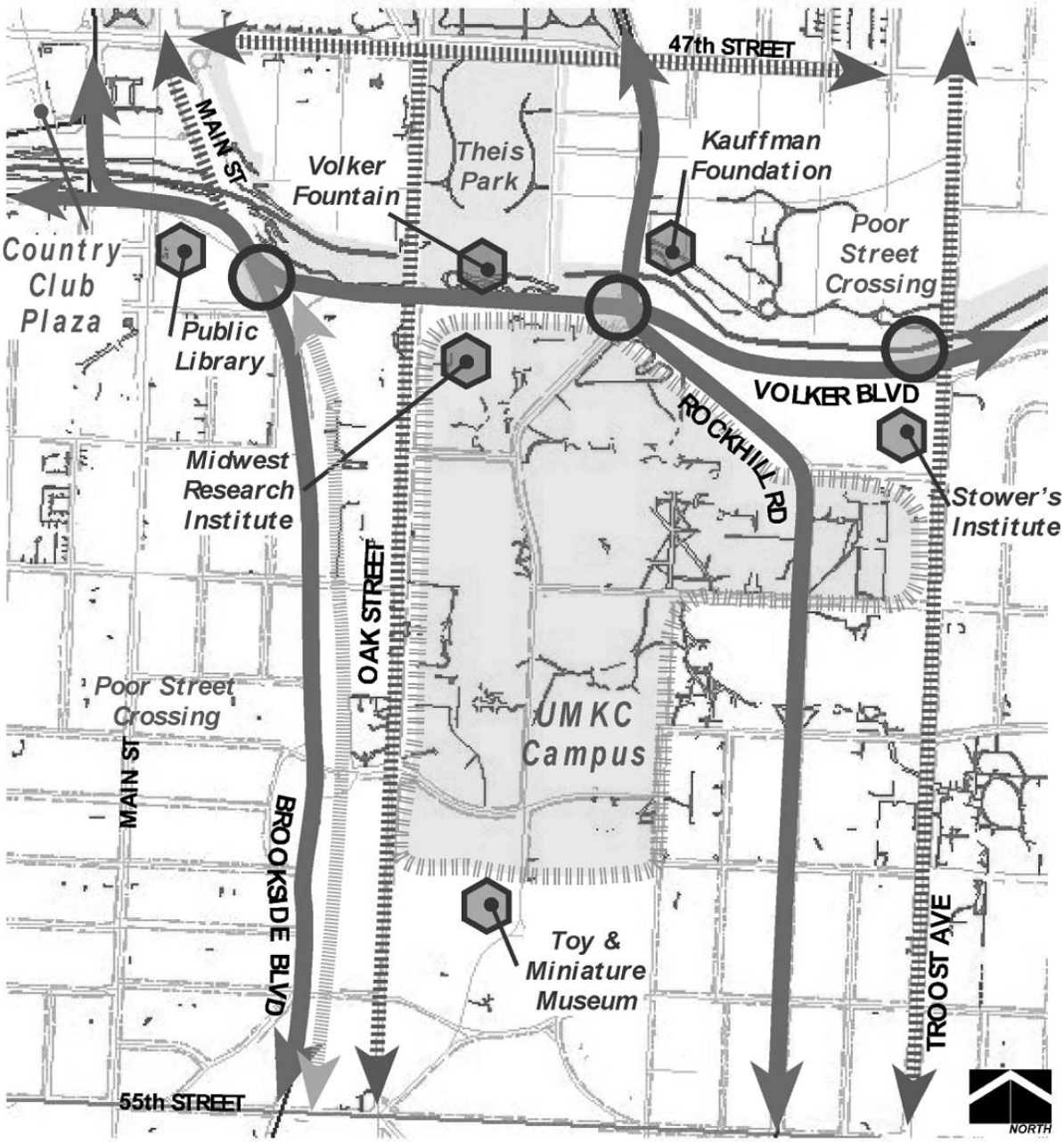
On-Going Recommendations:

- Follow recommendations made in UMKC Master Plan.

Pedestrian Mobility Report Card

	Current	Proposed
Directness	*A*	*A*
Completeness	*A*	*A*
Street Crossings	*B*	*B*
Visual Interest and Amenities	*A*	*A*
Security	*A*	*A*

University Of Missouri-Kansas City Map



The above map shows the popular Country Club Plaza and Westport areas.

Neighborhood/Area: Brookside

Location

The Brookside Pedestrian Zone is identified in the *FOCUS Kansas City Plan* as a one-mile wide circular zone surrounding the intersection of 63rd Street and Wornall Road.

Description

Brookside is home to a vibrant neighborhood commercial center with good pedestrian access to nearby residential areas in all directions. Like many of the older neighborhoods, Brookside benefits from short block lengths and a complete sidewalk system throughout the area. Direct connections to almost every destination in the area allow for quick and convenient pedestrian trips.

Sidewalks are attached and on both sides of the street throughout most of the zone, with some detached sidewalks and open spaces in residential areas. Sidewalks in the area are generally in good condition and diagonal curb ramps are present at most intersections. However, most sidewalks are more than 40 years old and on-going maintenance or replacement is needed in a number of areas.

Standard crosswalks are present at major street crossings. Still, crossing Brookside Boulevard, Wornall Road, and 63rd Street is a challenge at most locations. Brookside and Wornall separate the mixed-use retail area from the adjacent neighborhoods to the west. Sixty-third Street goes through the middle of the mixed-use district, creating a divide between the shops to the north and south.

The pedestrian system in these areas reflects a good commitment by the retailers to provide a pleasant and well-maintained storefront-walking environment. Amenities such as outdoor seating, storefront awnings, parkways, mature landscaping, and shade trees in the retail areas create a generally comfortable walking environment.

Brookside Streetscape – 63rd Street

The area storefronts are pedestrian oriented; no setbacks, direct access from sidewalks, and window front viewing are common characteristics. Large parking lots are generally absent adding to the pedestrian friendly environment. Residential walking environments are enhanced by well cared for homes and tree-lined streets.

The Trolley Track Trail system provides for excellent pedestrian connectivity to points north and south of the study area along the trail and good integration into the neighborhoods. The trail also adds quality landscaping and public amenities along the entire trail.

Security in the Brookside pedestrian zone is good, with high activity levels throughout most of the day, but with less commercial activity at night. Strong neighborhood commitment and neighborhood watch programs contribute to this sense of security.

Recommended Improvements

The Brookside residential neighborhoods and mixed-use activity center were planned and designed by J.C. Nichols over 80 years ago. The same characteristics that made the area desirable to live in then still exist today. Preservation of these characteristics and upkeep of the existing infrastructure, amenities, and aesthetics is paramount. Improved pedestrian connections between the mixed-use center and residential neighborhoods, in addition to the adjacent study areas, are also important. Better street crossings along 63rd Street need to be made. This could include pedestrian signage, flashing lights, refuges, or lowered speed limits.

Trolley Track Pedestrian Trail

Priority for Improvements in the Brookside Area and Vicinity Relate to:

- Preserve the pedestrian scale of neighborhoods and mixed-use center.
- Improve street crossings along 63rd Street within mixed-use center (Main Street, Brookside Boulevard, and Wornall Road).
- Improve street crossings along Wornall Road and Brookside Boulevard at Meyer Boulevard, 63rd Street, and 59th Street.
- Improve east/west pedestrian connections to adjacent neighborhoods along Meyer Boulevard and 63rd Street.

General Timeline

Short-Term Recommendations – 0-3 Years:

- Repair and update neglected sections of existing sidewalk system within the mixed-use area.
  26,400 feet x $25/FT *$660,000*

- Create program to identify neglected sections of sidewalk in residential neighborhoods.
  By City – On-Going --

- Continue to explore neighborhood assessment to help city properly maintain area sidewalks and pedestrian trails.
  By City – On-Going --

- Provide benches in storefront areas and along the Trolley Track Trail.
  10 @ $700 per bench *$7,000*

- Provide median refuge islands and updated crosswalks at determined intersections along 63rd Street, Brookside Boulevard, and Wornall Road.
  Assuming 25 crossings x $25,000 each — *$625,000*

- Additional landscaping/streetscaping along 63rd Street and Brookside Plaza from Brookside Boulevard to Oak Street.
  Budget to be determined – say +/-$250,000 — *$250,000*

Short-Term Recommendation Subtotal — ***$1,542,000***

Mid-Term Recommendations – 4-6 Years:

- Explore expansion of trail system within study area.
  Study Fee – say +/-$25,000 — *$25,000*

- Better east/west connection of trail and sidewalk system to adjacent neighborhoods (Troost Landing and Ward Parkway).
  Assuming 16,000 feet x $25/FT — *$400,000*

Mid-Term Recommendation Subtotal — ***$425,000***

Long-Term Recommendations – Over 6 Years:

- Encourage mixed-use and residential redevelopment within existing commercial center to promote around-the-clock walkability.
  By City — --

Long-Term Recommendation Subtotal — ***--***

Brookside Recommendation Totals — ***$1,967,000***

On-Going Recommendations:

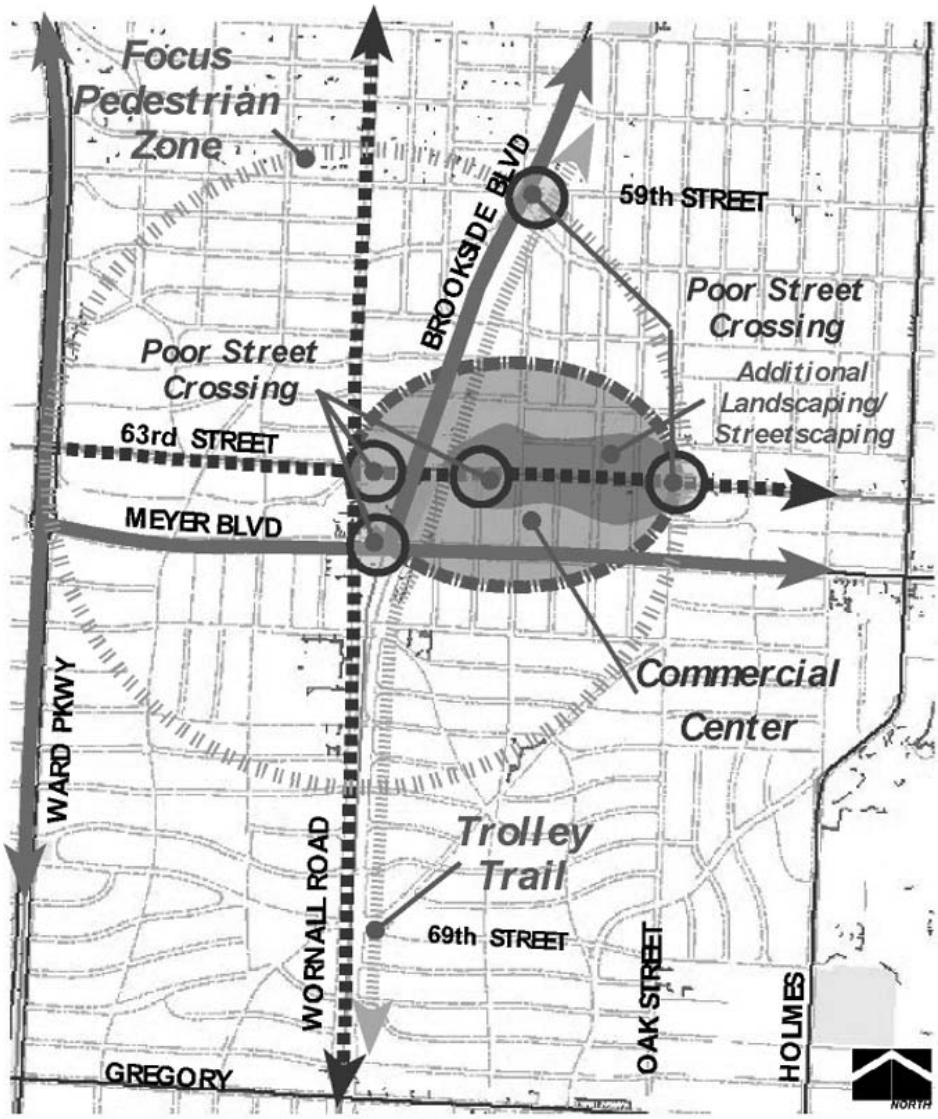
- Adhere to the principles and goals set forth in the 63rd Street Corridor Plan.
  - Provide an urban design concept that will enhance the physical appearance of the area and bring about a greater sense of "connection" throughout the corridor.
  - Establish a long-range land use strategy and development principles that complement the urban design concept.
  - Promote the citywide initiatives established by the community in the *FOCUS Kansas City Plan*, the adopted citywide comprehensive plan.
  - Provide a proposed land use framework so that the impact of future investments may be evaluated in relation to the overall vision and goals of the plan.

- Preservation and upkeep of existing infrastructure, amenities, and aesthetics.
- Enforce Brookside design guidelines and zoning regulations.
- Adhere to the vision set fort in the Metro Green Plan.

Pedestrian Mobility Report Card

	Current	Proposed
Directness	*A*	*A*
Completeness	*A*	*A*
Street Crossings	*C*	*A*
Visual Interest and Amenities	*B*	*B*
Security	*A*	*A*

Brookside Map



Neighborhood/Area: Waldo

Location

The Waldo Pedestrian Zone is identified in the *FOCUS Kansas City Plan* as a 1-mile wide circular zone surrounding the intersection of 75th Street and Wornall Road. Waldo is located just south of the Brookside Neighborhood

Description

Waldo Landmark

Waldo benefits from short block lengths (within residential neighborhoods) and a relatively complete sidewalk system throughout the area. Direct connections to the adjacent residential areas are convenient and the commercial attractions along Wornall are within a direct ¼ mile walking distance for many residents.

Sidewalks are attached and on both sides of the street throughout much of the zone, though coverage south of 77th Street is lacking. Sidewalk conditions, in the study area, are spotty at best. In some areas the sidewalks are in generally good condition, with diagonal curb ramps present at most intersections. In other areas the sidewalks are inadequate or in disrepair. Too narrow, cracked, too close to auto traffic, or not present are some common inadequacies.

The Trolley Track Trail along the existing rail right-of-way runs through the center of the study area. The trail provides for excellent pedestrian connectivity to areas within Waldo and to adjacent areas north and south. Some sections of the trail are black top and other sections are covered in crushed Limestone.


Wornall Road and 75th Street Intersection

Crosswalks are present along Wornall Road at Gregory Boulevard and 75th Street with insufficient time allocated to pedestrians crossing at these locations. The one mid-block crossing of Wornall Road, north of 75th Street, is striped and signed, but pedestrians must wait for a gap and cross four lanes of traffic and one lane of parking with no other protection.

Amenities such as storefront awnings and landscaping along the Trolley Track Trail create spotted areas of a positive walking environment. East/west streets, within the study area, (Gregory Blvd and 75th Street) share many of the same pedestrian friendly shortcomings with Wornall Road. However, many of the existing structures along these streets have shorter (if any) setbacks adding to their overall walkability.

The mixture of shops, restaurants, and office space are located here, catering to a variety of people during and after business hour. Due to the nature of the existing establishments, an area pedestrian in scale and orientation has evolved.

Small building setbacks, landscaping, visual amenities, storefront awnings, and on-street parking are all present. Still, many problems exist at the intersection. Wornall Road, with its heavy traffic traveling at fast speeds, divides the area. Wornall Road can be difficult and even dangerous to cross. Also, a large parking lot is located just southeast of the intersection. This detracts from the pedestrian feel; and the commercial businesses, located on the far side of the parking lot, are difficult to access by foot.

Recommended Improvements

Wornall Road intersects the Waldo study area dividing it into two. Wornall Road is a four lane heavily used arterial streets. With no turning lanes and high average traffic speeds, Wornall Road is dangerous to cross. Poor traffic crossing conditions exist along the entire stretch of Wornall Road, but none is more problematic than the 75th Street intersection. Parking and pedestrian oriented businesses are located along 75th Street on both sides of Wornall Road. Pedestrians regularly cross the busy intersection. Better crosswalks and traffic calming techniques need to be explored.

The streetscape along Wornall Road is dominated by commercial signage (pole signs, billboards) and concrete. Other than the Trolley Track Trail between Gregory Boulevard and 76th Street, very little landscaping and public amenities exist throughout the corridor. In addition, some existing sidewalks along Wornall Road between Gregory Boulevard and 79th Street need maintenance and are located dangerously close to the narrow street and the heavy traffic. The result is an unsightly corridor that lacks aesthetic quality, vegetation, amenities and protection from the elements.

To create a corridor that is safer for pedestrians and generally more aesthetically appealing a two block long one-block wide formal pedestrian district is recommended. Centered at the 75th Street & Wornall Road intersection, the district would become a pedestrian oriented area. Within the two-block stretch lower speed limits, prominent crosswalks, public amenities, additional landscaping and streetscape design and repair would be incorporated. Benefits of the proposed pedestrian zone come from the concentration of the limited public resources to the four-block area, as opposed to spreading them across the entire corridor. This would make a dramatic and noticeable improvement to the corridor, acting as a catalyst for improving the remaining corridor. This is in contrast to a subtle improvement if resources were spread thin. By designating the formal zone, a destination (or “sense of place”) would be formally created. In addition, impact to the existing automobile traffic would be limited to the designated zone as opposed to the entire corridor.

Priority for Improvements in the Waldo Area and Vicinity Relate to:

- Improve street crossings along Wornall Road at 75th Street and Gregory Boulevard
- Apply successful "Pedestrian Zone" recommendations to other areas along Wornall Road to be determined later.

General Timeline

Short-Term Recommendations – 0-3 Years:

- Minimize Wornall Road crossing impact by installing automated pedestrian crosswalk at 75th Street and Gregory Boulevard.
  Pedestrian Signals *$100,000*

- Additional landscaping in proposed Pedestrian Zone and along Trolley Track Trail.
  Budget to be determined – say +/-$200,000 *$200,000*

  Short-Term Recommendation Subtotal ***$300,000***

Mid-Term Recommendations – 4-6 Years:

- Change crosswalk material to delineate pedestrian crosswalk.
  Assuming 10 intersections x $80,000 each *$800,000*

  Mid-Term Recommendation Subtotal ***$800,000***

Long-Term Recommendations – Over 6 Years:

- Apply some or all of the Pedestrian Zone criteria to additional areas along the Wornall Road corridor where appropriate.
  10,000 feet x $50/SF *$500,000*

  Long-Term Recommendation Subtotal ***$500,000***

  Waldo Recommendation Totals ***$1,600,000***

On-Going Recommendations:

- Increased maintenance and security.
- Adhere to the vision set forth in the Metro Green Plan.

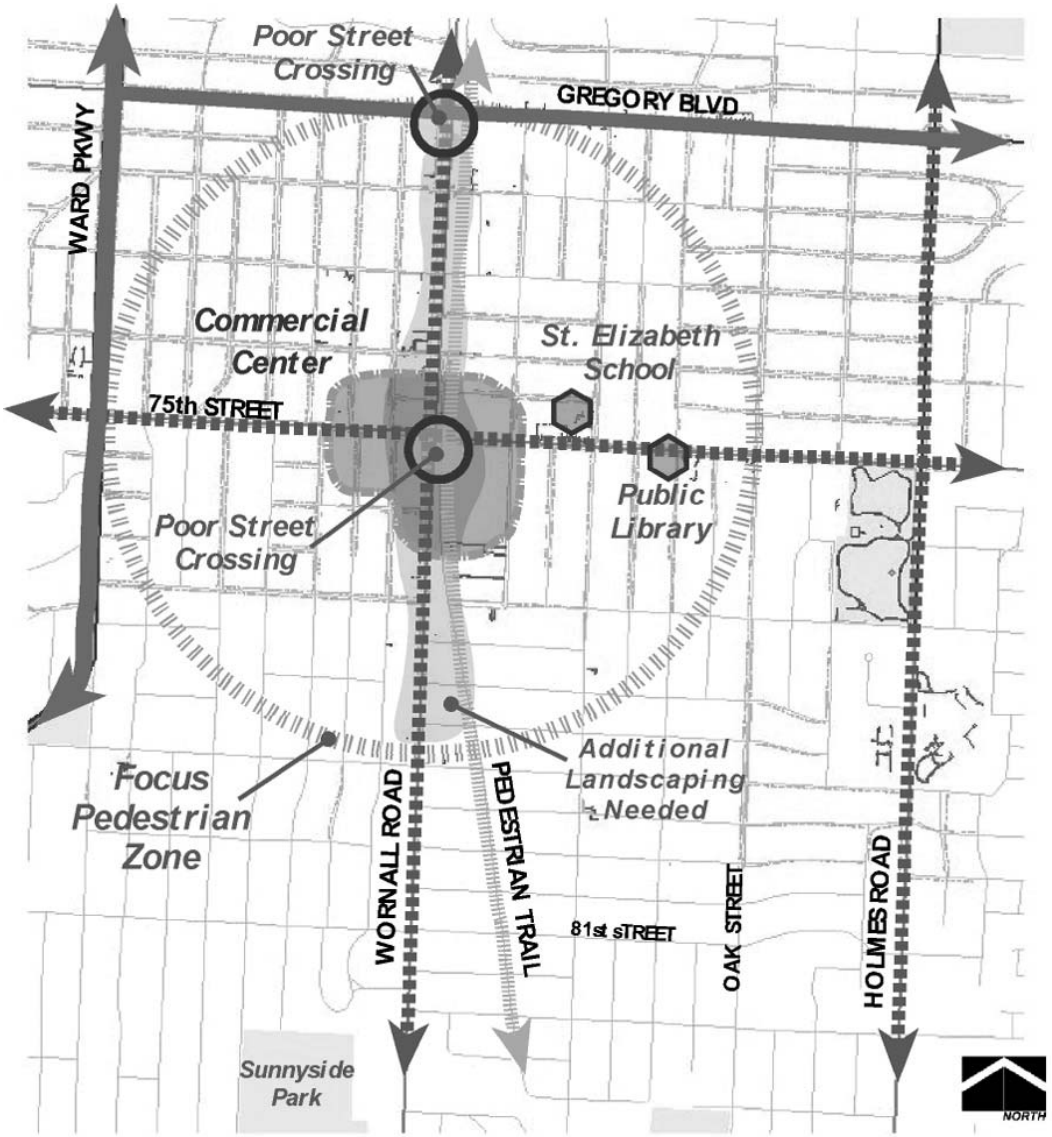
Pedestrian District Possible Criteria:

- Lowered speed limits.
- Move utilities underground (removal of utility poles).
- Add prominent and modern crosswalks.
- Streetscape repair and design.
- Additional landscaping.
- Sidewalk repair.
- Refuge islands.
- Encouragement of façade upgrade.
- Pedestrian amenities (benches, art, fountain etc.).
- Incorporate Trolley Track Trail into zone.
- Increased security through improved lighting and additional patrols.
- Zone sign designation on street.

Pedestrian Mobility Report Card

	Current	Proposed
Directness	*A*	*A*
Completeness	*C*	*B*
Street Crossings	*C*	*B*
Visual Interest and Amenities	*D*	*B*
Security	*B*	*A*

Waldo Map


Poor Street Crossing
GREGORY BLVD
WARD PKWY
Commercial Center
St. Elizabeth School
75th STREET
Public Library
Poor Street Crossing
Additional Landscaping Needed
Focus Pedestrian Zone
WORNALL ROAD
PEDESTRIAN TRAIL
81st sTREET
OAK STREET
HOLMES ROAD
Sunnyside Park
NORTH

Neighborhood/Area: Order of Magnitude

The following contains a summary of planning level cost estimates for the ten case studies. The estimates are summarized for each of the short, mid, and long-term recommendations.

The total pedestrian improvement costs for all ten districts is approximately $16,500,000. Short-term improvements include $6.5 million with mid-term estimated at $7.4 million. Total improvement costs by district tend to be in the $1 to $2 million ranges with slightly higher improvement costs for the Missouri Riverfront and the Downtown and lower pedestrian district costs for UMKC.

Summary of Pedestrian District Improvement Recommendations

Pedestrian Districts	Short-Term (0-3 Years)	Mid-Term (4-6 Years)	Long-Term (+6 Years)	Total Costs
Missouri Riverfront	$1,022,500	$1,365,000	$50,000	$2,437,500
Downtown	$1,702,500	$1,425,000	$75,000	$3,202,500
18th & Vine	$375,000	$625,000	--	$1,000,00
Crown Center/Penn Valley/Union Station	$700,000	$830,000	--	$1,530,000
Linwood & Prospect	$20,000	$700,000	$1,188,000	$1,908,000
Plaza/Westport	$130,000	$798,000	$700,000	$1,628,000
Brush Creek Corridor	$500,000	$200,000	$778,000	$1,478,000
University of Missouri – Kansas City	$10,000	$200,000	$500,000	$710,000
Brookside	$1,542,000	$425,000	--	$1,967,000
Waldo	$300,000	$800,000	$500,000	$1,600,000
Grand Totals	$6,301,997	$7,367,997	$3,791,000	**$16,462,000**

V. Plans, Standards, Codes, Policy and Capital Improvement Program Recommendations – Applications

The City of Kansas City's Plans, Standards, Codes, Policies, and Capital Improvement Program provide the framework for designing and implementing the built environment. These Plans, Standards, Codes, Policies, and Capital Improvement Program are administered through the City Planning and Development and Public Works Departments and are critical for setting pedestrian requirements for new developments and redevelopments to ensure a walkable and pedestrian-friendly city.

Currently, there are numerous references to pedestrian mobility in many of the City of Kansas City's planning documents, such as *FOCUS Kansas City Plan*; however, specificity is lacking. The first key objectives of the "City of Kansas City Plans, Standards, Codes, Policy and Capital Improvement Recommendations" chapter of the Kansas City Walkability Plan was to highlight the areas of needed changes to these documents. The second objective was to recommend changes to the City's Standards, Codes, and Policies to improve pedestrian mobility while maintaining reasonable balance with other City goals and objectives. The objective of this chapter is to provide recommendations on policies, standards, codes, and ordinances that: 1) provide improvements to the pedestrian environment to increase pedestrian mobility; and 2) target simple-to-implement changes that recognize current staff responsibilities and limited City funds. The third objective of this Recommendations Chapter was to provide recommendations on how these plans, standards, and policy recommendations are to be implemented.

This chapter is divided into five (5) sections, summarized as follows:

- **Principles and Policies Statement**: This section identifies the current foundational recommendations for pedestrian mobility within the Kansas City. These statements are the goals and objectives from which standards and policy recommendations are made and the basis for an implementation action plan. This section lists some of the major principles and policies identified in *FOCUS Kansas City Plan* and identifies how and where some of these principles and policies can be enhanced and implemented.

- **Pedestrian Plan Interface with City Plans and Standards**: The *FOCUS Kansas City Plan* is the guiding document for the City of Kansas City. Included in the *FOCUS Kansas City Plan* are specific recommendations for changes in the City's standards and ordinances to promote pedestrian mobility and a walkable community. This section of the chapter identifies those elements of the *FOCUS Kansas City Plan* that specifically address pedestrian mobility and, along with the Principles and Policies Statement, become the foundation for recommended changes in the City's standards and ordinances.

- **Recommendations for Changes in City Regulations and Ordinances**: This section of the report defines recommended changes to the City's regulations and ordinances for accommodating the pedestrian and promoting a pedestrian environment.

- **Recommendations for Changes in Street Design Criteria**: This section presents recommendations in street design to address pedestrian mobility.

- **Pedestrian Plan Implementation and Responsibilities**: Issues such as what should be done and who is responsible for implementing the pedestrian plan recommendations are addressed in this section of the chapter.

- **Capital Improvement Program:** This section of the Chapter reviews the current Capital Improvement Program (CIP) for the City regarding pedestrian and sidewalk improvements and provides for recommendations for fully funding the pedestrian elements of the CIP.

Principles and Policies Statement

The following is an overriding list of pedestrian principles and policies recommended for the City of Kansas City. These pedestrian principles and polices have been developed from a wide range of sources, including the *FOCUS Kansas City Plan*, national research, best practices from other communities, and response to issues and concerns identified through the Kansas City Walkability Plan process. In addition to each of these listed principles and policies, a preview of the recommendations as to how Kansas City might achieve implementing these principles and policies are presented in san serif following each item.

- The pedestrian is the foundation for mobility within Kansas City.

- The City's sidewalk and pathway system should provide **direct, continuous**, and **safe** pedestrian mobility for **all ages and abilities** and **link neighborhoods** to activity centers, transit stops, schools, parks, and other neighborhoods.

  The Walkability Plan calls for pedestrian analysis and mitigation as part of the traffic impact analysis process for public and private developments.

- The City should develop and adopt procedures for evaluating the operating performance of the pedestrian network system.

  The Walkability Plan defines pedestrian level of service and identifies evaluation methodology.

- The City's **transportation impact analysis guidelines** for new developments should be expanded to **comprehensively address pedestrian mobility**, with special attention paid to pedestrian infrastructure, including an assessment of directness, continuity, street crossings, visual interest and amenity, and security.

  The Walkability Plan provides evaluation procedures for new development on how to conduct a pedestrian impact analysis.

- Pedestrian network mobility improvements should be considered an integral part of all new transportation improvements, including major reconstruction of roadways.

  The Walkability Plan provides recommendations and procedures for evaluating public transportation improvements to include pedestrian mobility.

- If pedestrian impacts are forecasted from a proposed public or private development project, the development should be required to provide **pedestrian mitigation** to offset those impacts.

  The Walkability Plan recommends that off-site pedestrian impacts, as defined by the pedestrian analysis, be partially or solely mitigated by the proposed development.

- **Subdivision standards** should be modified to **require pedestrian improvements** that connect residential areas to nearby commercial centers, schools, parks, and other neighborhoods with sidewalks and bike lanes and/or paths.

  Changes to subdivision standards to improve the pedestrian network and access are included as part of the Walkability Plan.

- **Design standards** should be modified to **promote pedestrian mobility**. These design standards would include requirements that commercial retail and office developments provide internal sidewalks systems that connect with the adjacent pedestrian network. In addition to requiring **sidewalks on both sides of the street**, residential developments would be required to have **direct routes** between dwelling units and commercial centers, schools, parks, and transit.

  Recommended pedestrian design standards have been included as part of the Walkability Plan.

- There should be an organizational focus to **coordinate pedestrian and bicycle planning activities** and to oversee all pedestrian and bicycle activities within the city. The City should work to assign that responsibility within existing departments with new and/or existing staff.

  The Walkability Plan recommends coordination of pedestrian improvements with staff from City of Kansas City Department of Planning and Development and Public Works.

- A **pedestrian education program** should be developed as part of the City's overall communication and education program.

  The Walkability Plan has developed a pedestrian assessment tool to solicit input from the City's neighborhoods on what pedestrian elements are good or bad within their community.

- **Funding and prioritization** programs should be developed that allocate resources in the most cost-effective and equitable manner.

  The Walkability Plan identifies citywide prioritization of improvements by Planning Area and Council District.

- **Traffic calming mechanisms** should be considered in transportation design and planning.

  The Walkability Plan proposes design elements such as bulbouts and safety enhancements such as stopbars to both calm traffic and improve pedestrian safety.

Pedestrian Plan Interface with City Plans and Standards

The *FOCUS Kansas City Plan* is a major direction-changing document that identified significant changes in mobility. The *FOCUS Kansas City Plan* demonstrates that choice in multimodal transportation systems is critical to the Connected City. A move away from the more traditional automobile as the sole mode of travel to a multimodal connected city was a foundational plan element and has become the basis for recommendations for other plans, standards, and ordinances. The *FOCUS Kansas City Plan* includes a number of documents that contain references to the need for a pedestrian environment to promote a walkable community. The following highlight some of the more important pedestrian-related elements.

Citywide Physical Framework

The "Moving About the City" building block defined the paradigm shift in how Kansas City views the pedestrian. As the most basic form of transportation, the pedestrian's need to be able to walk from home to work, to shop, and to recreate became a preamble to the connected city. The transportation goal was to develop standards and systems that accommodate the automobile, transit bicycles, and the pedestrian. Initiative 21 of the *FOCUS Citywide Physical Framework Plan* identified the need to develop and implement a comprehensive circulation and funding program that would accomplish the following elements. The objective of the Kansas City Walkability Plan is to augment and revise these *FOCUS* guidelines. The following text in san serif identifies what recommended revisions are included in the Walkability Plan.

- Revise the City's Street Standards to **accommodate automobile, transit, bicycle, and pedestrian modes**. This update should address the widths of streets, turning radiuses, the location of sidewalks, intersection design, bikeways, and standards affecting the pedestrians. Develop a retrofit plan for existing facilities.

  The Walkability Plan addresses a wide range of street standard elements including location of crosswalks, minimizing street widths or providing other pedestrian enhancements to offset street widths, and pedestrian ramps. The Walkability Plan also includes a case study on retrofitting an existing neighborhood including recommendations for being flexible in the implementation of the City standards to achieve minimum pedestrian connections.

- Develop level of service standards for all modes including automobile, transit, bicycle, and pedestrian.

  The Walkability Plan defines a methodology for conducting a Pedestrian Level of Service Analysis.

- When appropriate, require a traffic impact study for future public and private developments that addresses all transportation modes and their level of service.

  The Walkability Plan provides both the guidelines as to when a pedestrian traffic impact study might be needed and the procedures for providing the analysis.

- Adopt multimodal-oriented development design guidelines for new development and rehabilitation elements in neighborhood design and planning.

  The Walkability Plan identifies new connectivity requirements and methodology for rehabilitating the pedestrian element within existing neighborhoods.

- Improve pedestrian access linkages to transit by prioritizing the construction of sidewalks along transit corridors and connecting to transit stops.

  The Walkability Plan proposes procedures for conducting pedestrian level of service analysis that provide direct connections from private development to transit stops.

- Create Transit Impact Zones, including financial incentives to retain and attract businesses and to encourage more dense, mixed-use, and compact development.

  The Walkability Plan recommends a pedestrian level of service standard for Transit Impact Zones to help make them more desirable for pedestrians and recommends prioritizing pedestrian improvements to these areas, among others.

- **Modify** engineering standards for **intersection design** to require **pedestrian safety** measures for streets.

  The Walkability Plan identifies methodology for evaluating pedestrian level of service at intersections and pedestrian elements to improve pedestrian safety. Intersection design standards shall address all modes of traffic safety including pedestrian safety.

- Develop funding and prioritization programs that allocate resources in the most cost-effective and equitable manner.

  The Walkability Plan identified an overall City of Kansas City pedestrian needs assessment for major and moderate pedestrian improvements. These needs also included a planning level cost estimate associated with these improvements, which were allocated to Planning Areas and Council Districts.

- Consider traffic calming mechanisms in transportation design and planning.

  The Walkability Plan introduces concepts such as bulbouts and location of stop bars to allow traffic to flow through an area, but in a slower, more pedestrian friendly fashion.

- Establish pedestrian standards that promote street life and pedestrian activity.

  The pedestrian level of service measurements of visual interest and amenity, and security are intended to create an environment where more pedestrian activity is encouraged and promoted.

FOCUS Neighborhood Prototype Plan

The *FOCUS Neighborhood Prototype Plan* discusses **connectedness** of neighborhoods and people to promote positive interactions between neighborhoods and between neighborhoods and the City. It further states that this connectedness can be achieved through physical connections, such as sidewalks.

Initiatives defined in the *FOCUS Neighborhood Prototype Plan* included neighborhood design and infrastructure that balances all types of travel, including the pedestrian.

- The *FOCUS Neighborhood Prototype Plan* calls for walkways that create opportunity for interaction.

  Approaches to making neighborhoods safer for pedestrians listed in the Walkability Plans can include timing of traffic lights and pedestrian crosswalks, use of a landscaped island in an intersection as an aesthetic amenity that slows traffic, and use of on street parking to provide a protective buffer between the pedestrian and moving traffic.

- The *FOCUS Neighborhood Prototype Plan* also stated the need to continue to repair and replace curbs and sidewalks in all of Kansas City's neighborhoods. The plan indicated that streets should be designed to enable multimodal transportation, including the pedestrian and that streets should have a consistent landscape treatment with **sidewalks on both sides**.

  The Kansas City Walkability Plan identifies minimal pedestrian level of service standards for all neighborhood types. The differences in pedestrian improvement targets tend to be greater regarding whether or not there are pedestrian destinations and where they are located. The Walkability Plan also promotes flexibility in the City's standards when retrofitting an existing neighborhood with pedestrian improvements.

FOCUS Northland Plan

The *FOCUS Northland Plan* targets investment strategies to maintain existing neighborhoods and encourage development where public facilities already exist. Specific transportation improvements are recommended to improve pedestrian-friendly throughways. The *FOCUS Northland Plan* calls for a **more compact, interconnected development** pattern structured around existing development and defined centers that would provide for the opportunity for pedestrian mobility. The plan recommended the development of a new Site Plan Review Ordinance to address issues such as pedestrian amenities. The plan also recommended implementation of greenways.

- The *FOCUS Northland Plan* also identifies the need for choice through multimodal transportation. The plan suggests that sidewalks should be provided on all new roads (detached sidewalks on arterials) and paths should be provided as connections from homes and neighborhoods to transit stops, schools, shopping areas, and other destinations. The *FOCUS Northland Plan* stated that all developments of a significant size should be required to conduct a traffic impact analysis that would include an evaluation of the project's impact on pedestrian mobility.

  The Kansas City Walkability Plan supports these Northland objectives and provides recommended evaluation procedures for new private developments and public improvements.

FOCUS Urban Core Plan

The *FOCUS Urban Core Plan* includes investment strategies for central city neighborhoods, downtown, the Central Business Corridor, and neighborhood livability. One of the plan's eight aspirations is to link activity hubs with efficient, cost-effective transportation alternatives. Streets within the urban core will all be designed around the pedestrian and will provide for pedestrian safety, comfort, and quality of experience.

The *FOCUS Urban Core Plan* proposes the enhancement of the pedestrian experience through new standards that require streets to be constructed to minimum widths to reduce the exposure of the pedestrian when crossing streets. A number of guidelines were identified in the *FOCUS Urban Core Plan* to promote safe and inviting pedestrian mobility. These design guideline elements include the following:

- **Windows and doors** on the street wall to increase pedestrian safety and interest.

- Development of **activities and uses interesting to pedestrians**, including retail shops, restaurants, building lobbies, plazas, and urban gardens. Required use of clear, untinted glass on the first floor to allow pedestrians to see activity inside buildings and provide a sense of security. Building forms that provide shelter for pedestrians from harsh summer sun and winter winds through devices such as awnings, canopies, and porticos.

- Incorporation of **publicly visible art** in new private development and public spaces.

- Landscaping, lighting, and other **beautification measures** for surface parking lots.

- On designated Great Streets, require investment in the addition of street trees of a minimum size of 2½″ caliper where street and sidewalk conditions allow adequately sized planter boxes.

- New developments for both public and private areas are to include fountains, the symbol of Kansas City.

- On designated Great Streets, require enhanced lighting systems to provide both pedestrian safety and architectural beauty.

Recommendations for Changes in City Regulations and Ordinances

The following section identifies specific recommended additions and changes to the City's existing Regulations and Ordinances. To the extent possible, details of the proposed changes are defined. In other instances, recommendations are proposed that will require further refinement and agreement as part of the overall City's Regulations and Ordinances update process. The standards should be changed in appropriate chapters of the City's ordinances and codes, including but not limited to, Chapter 64: Streets, Sidewalks and Public Places; Chapter 66: Subdivision; Chapter 70: Traffic and Vehicles; and Chapter 80: Zoning.

Pedestrian Traffic Impact Study and Pedestrian Level of Service Requirements

Significant proposed developments within Kansas City are currently required to conduct a traffic impact study. The intent of this traffic impact study is to identify the number of trips that the proposed projects will produce, where they will go, and what impacts would occur when the development is built. The traffic impact study must also identify proposed mitigations that would offset impacts to an acceptable level of service. Currently, the traffic impact study guidelines provided by the Department of Public Works do not include any requirements for addressing pedestrian travel; nor are there any requirements for conducting a pedestrian impact analysis in any of the City's ordinances and codes.

It should further be noted that the current traffic impact study guidelines specify level of service as the method to measure traffic impacts. The guidelines further define Level of Service "D" as the threshold of acceptability. There does not exist a similar methodology for evaluating pedestrian levels of service nor what standards are appropriate for the City of Kansas City.

Therefore, the Walkability Plan recommends that the traffic impact study requirements be modified to include the assessment of pedestrian impacts and that pedestrian level of service standards be established in order to define what is and what is not acceptable. The Pedestrian Traffic Impact Analysis will generally be required with a Traffic Impact Study or when the proposed development is requesting City incentives. City Development staff, in consultation with Public Works staff, shall make the final decision on whether to require a Pedestrian Traffic Impact Analysis in those circumstances or to waive the

requirement. Guidelines for recommending a Pedestrian Traffic Impact Analysis at the time of a Traffic Impact Study or when City incentives are requested, are as follows:

- When the proposed development contains or is within a quarter mile of one or more potential pedestrian origins or destinations such as large residential concentrations, transit stops, schools, parks, a community center or library, commercial, institutional or mixed use area, or FOCUS designated pedestrian-oriented zone or street.

The Pedestrian Impact Study shall be completed by the time the Traffic Impact Study is completed and the preparation of the study shall not delay the development approval process. City staff may use Pedestrian LOS standards to evaluate and make recommendations on any proposed development or redevelopment, consistent with recommendations of the ***Kansas City Walkability Plan***.

Contained in Appendix C - Pedestrian Level of Service Analysis Methodology and Procedures for Development Proposals, is the methodology for measuring pedestrian level of service and for determining acceptable level of service standards. **The pedestrian level of service requirements defines five specific measurements for assessing directness, continuity, street crossings, visual interest and amenity, and security.** The methodology also establishes minimum level of service standards by measurement and area type. As an example, the pedestrian standards are higher in pedestrian districts and around activity centers than they are in lower-density suburban developments.

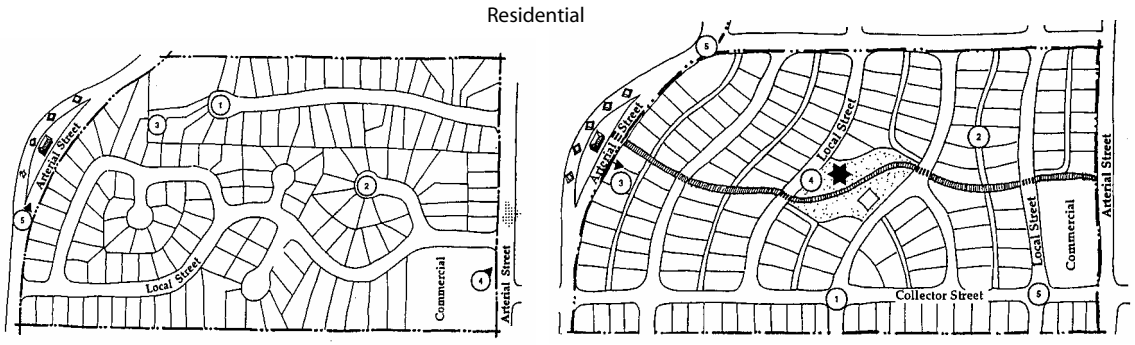
The intent of the pedestrian element of the traffic impact study and level of service analysis **is twofold**. **First** it is to ensure that as plans are prepared for submittal to the City, they be developed with consideration for how the pedestrian will move about the development and connect with adjacent uses and activities. The objective is to provide for pedestrian mobility in the design plans and to self-mitigate pedestrian impacts before the plans are submitted to the City. The **second** aspect of the recommendations is to provide the City with the legal authority to require pedestrian improvements to serve the development.

Site Designs General Connectivity Requirements

The current ordinances and codes lack specificity as to general connectivity standards to promote a pedestrian-friendly environment. The following sections identify general connectivity standards, features, and accommodations for pedestrians. These general connectivity requirements should be included in the City's ordinances and codes, including but not limited to Chapter 64: Streets, Sidewalks and Public Places; Chapter 66: Subdivision; Chapter 70: Traffic and Vehicles; and Chapter 80: Zoning.

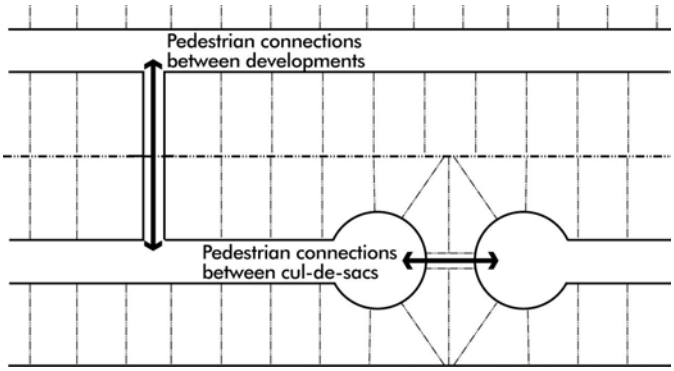
- Safe and convenient pedestrian access from the development site should be required to existing designated trails or greenways located on or adjacent to the development site.

- On-site connections should be made at points necessary to provide direct pedestrian travel from the development to major pedestrian destinations located within the adjacent neighborhood(s), including but not limited to parks, schools, commercial districts, and transit stops.



- In order to provide direct pedestrian connections to these adjacent destinations, the City may require additional sidewalks, walkways, or bike paths not associated with a street, or the extension of a sidewalk from the end of a cul-de-sac to another street or walkway and connections between developments.

- Recent City of Kansas City commercial office and retail developments, residential apartment developments, and office/industrial parks do not incorporate basic pedestrian elements for a walkable environment. These developments often:



    - Have large setbacks with parking in the front that create separation and distance from the building activity to the street;
    - Lack sidewalks;

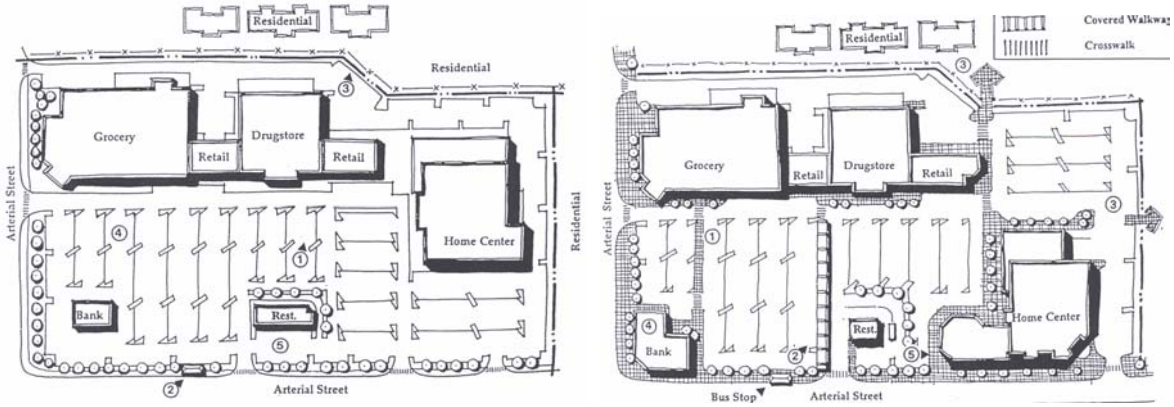
  - Provide unsafe pedestrian access to transit stops; and
  - Create barriers to adjacent neighborhoods.

- All commercial retail, office, industrial and residential apartment developments should provide for the following design elements:

  - Wide safe front sidewalk;
  - Direct pedestrian sidewalks to surrounding properties, transit stops, and sidewalks along the surrounding street;
  - Transit shelters adjacent to main entrance walkway;
  - Transit shelters designed to fit local architecture;
  - Major entry driveways away from front of stores where pedestrians must cross;
  - Canopies in front of stores to offer weather protection; and
  - Pedestrian plazas.

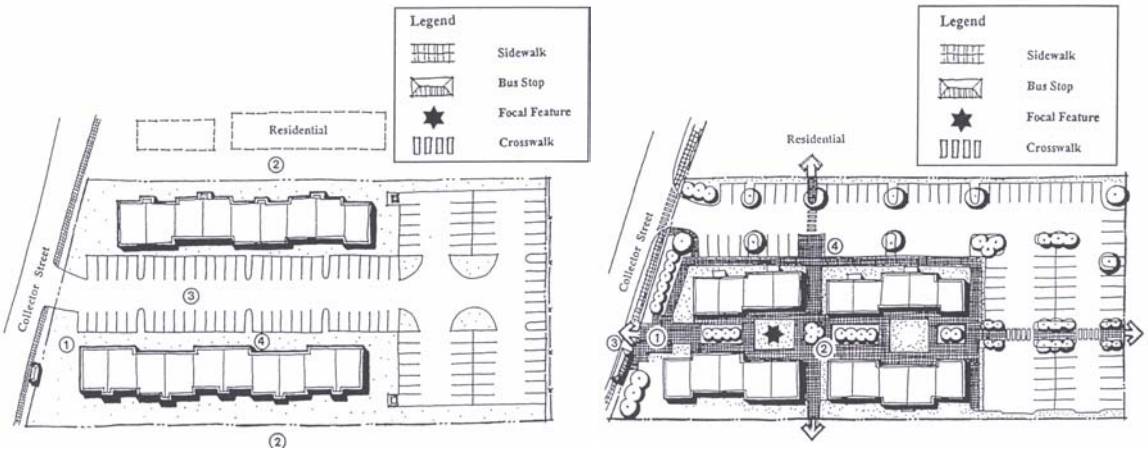
  The following exhibits provide examples of typical developments as compared to developments with pedestrian compatible improvements. These examples illustrate the same development yield for the site, illustrating that good pedestrian connection and development opportunities are compatible and efficient.

Commercial Retail Shopping Center



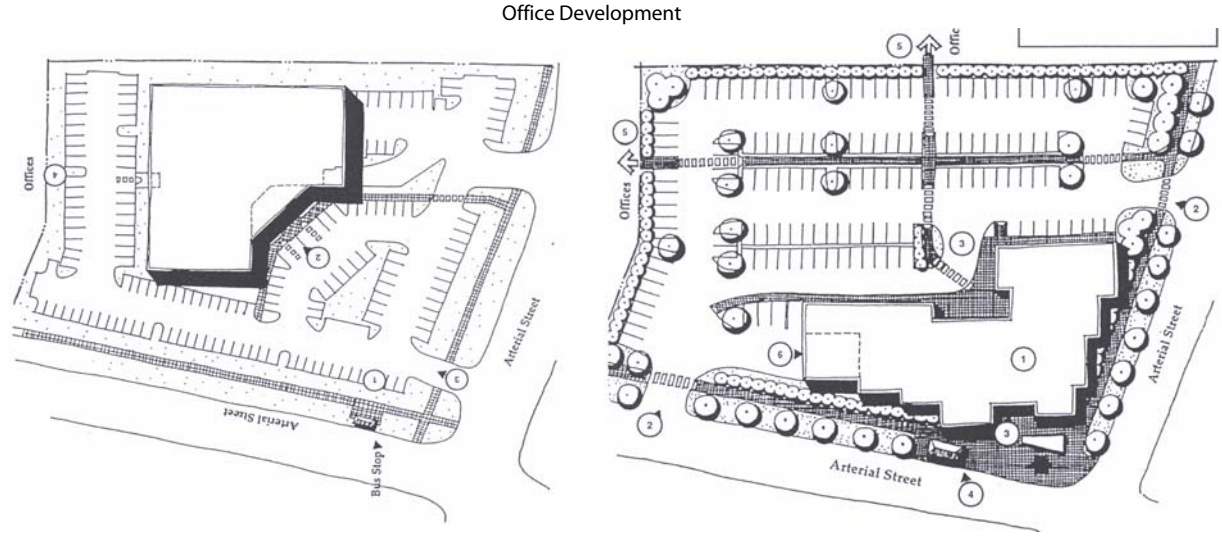
Typical | Pedestrian Compatible

Residential Apartment



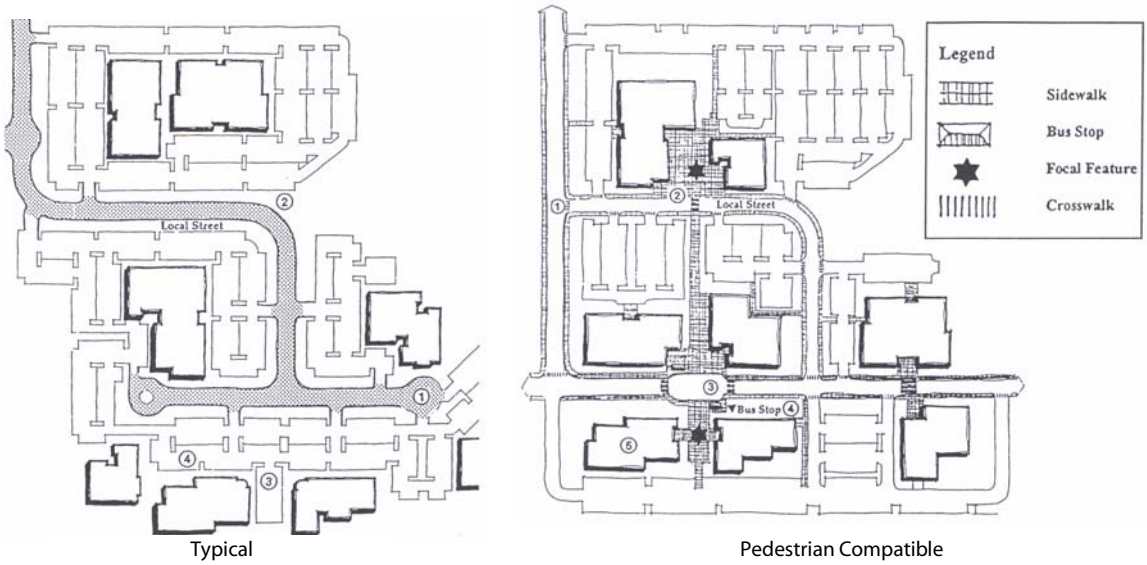
Typical | Pedestrian Compatible

Office Development



Typical | Pedestrian Compatible

Office/Industrial Park



Typical

Pedestrian Compatible

- When necessary to assure the public's safety in using on-site or connecting pedestrian sidewalks, the City may require the developer to provide on-site or off-site pedestrian overpasses, underpasses, or traffic signalization. These connections are particularly important for providing pedestrian connections to transit stops, schools and parks.

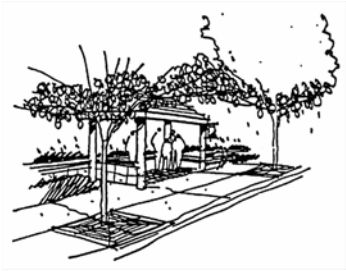
- Each development should provide and contribute to an on-site system of pedestrian walkways. To the maximum extent feasible, on-site walkways should provide the most direct access route between the intended points of travel. Specifically, pedestrian connections should be provided to and between the following points:
    - The primary project entrance or entrances to each building housing a principal use;
    - Any sidewalk or walkway on adjacent properties that extends to the boundaries shared with the development;
    - Any public sidewalk system along the perimeter streets adjacent to the development site, existing or planned transit stations, shelters, stops and park-n-ride locations; and
    - On-site amenities such as landscape/hardscape, benches, pedestrian lighting.

- Current City standards require a minimum of 4 feet wide sidewalks on residential street designs. All on-site and public sidewalks, pedestrian walkways, or trails should have and maintain a minimum unobstructed pathway width of 4 feet with 5 feet recommended minimal vibration surface, except that ways included for joint pedestrian and bike use should be provided a minimum pathway width of 10 feet.

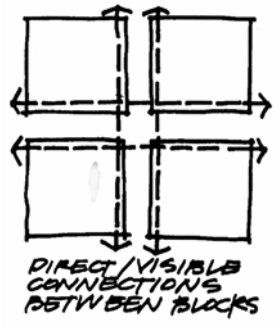
Design Features and Accommodations for Pedestrians

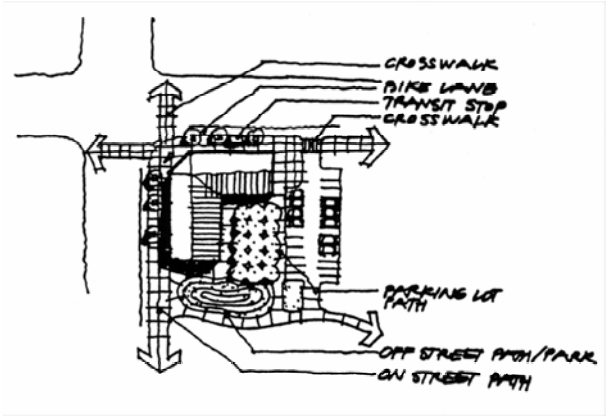
To the maximum extent feasible, the following guidelines should be incorporated in the design of all new developments to ensure safe and convenient pedestrian access into and within the site, with minimum potential for conflict with motor vehicles. These design elements complement the five measures of pedestrian level of service: directness, continuity, street crossings, visual interest and amenity and security.

Directness (Follow ADA Guidelines)

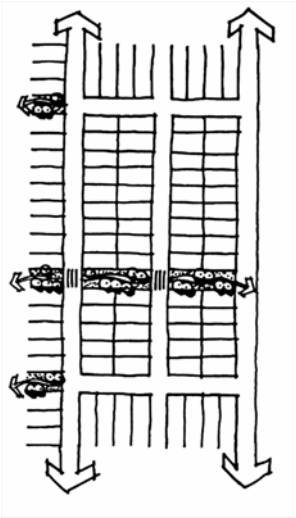


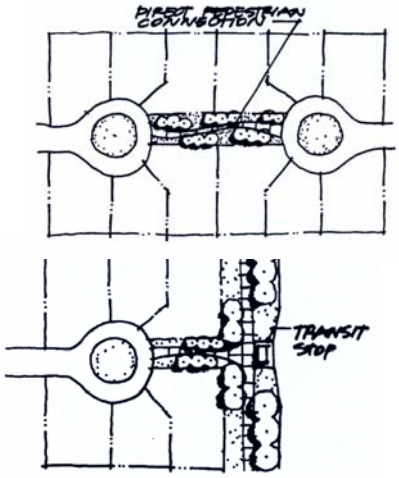
- Provide and encourage direct pedestrian connections.
    - Provide **direct pedestrian connections** to transit, schools, activity areas, and public facilities.
    - Provide **visible connections** to key pedestrian destinations. Align and locate buildings, roadways, and open space so that pedestrians can see their destinations before arriving there.
    - Provide clearly marked building entries as viewed from the street. Entries from parking lots should be subordinate to those related to the street. Buildings should be sited in ways to make their entries or intended uses clear to pedestrians.
    - The location and pattern of streets, buildings, and open space must facilitate direct pedestrian access.
    - Use **light fixtures** to provide direct indication for pedestrian traffic.
    - **Ensure** that sidewalk uses, such as outdoor cafes, in high use retail pedestrian settings, are **compatible** with **direct pedestrian access** to buildings and other destinations.
    - **Avoid barriers that separate** commercial developments from residential development and transit.
    - **Locate buildings near street corners** to improve access to bus stop and provide pedestrian connections to neighboring activities.
    - Establish appropriate lot patterns that provide direct and visible connection of sidewalks between blocks.
    - Provide direct and visible connection of sidewalks between blocks.
    - Provide **direct connection between cul-de-sacs**.
    - Ensure appropriate **width** of sidewalks and street crossings to facilitate continuous movement of **two people** comfortable walking **side by side and one to pass**.

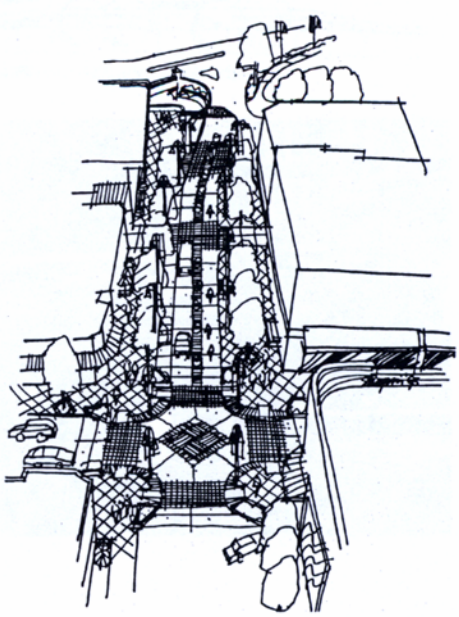




- Provide clear and direct pedestrian **entries from the street**, not just from parking areas.
- **Minimize and remove** physical obstructions/barriers that impede direct pedestrian access. Provide access through walls, fences, and other obstructing features and elements.

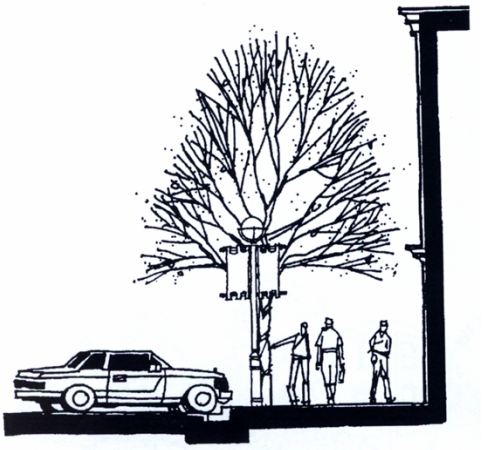






Continuity (Follow ADA Guidelines for protruding objects and obstructions)

- **Link** schools, neighborhoods, parks, activity centers, and other destinations **with a continuous pedestrian network**.
  - Provide a continuous and understandable pedestrian network by incorporating the following facilities, features, and elements:
    - Continuous sidewalks on both sides of the street.
    - A continuous alignment of building facades near the sidewalk.
    - A consistent park strip between the curb and the sidewalk.
    - Consistent street trees.
  - Use pedestrian-scaled furnishings, signs, landscaping, and facilities that appear as unified and themed entities in pedestrian networks, areas, and corridors.

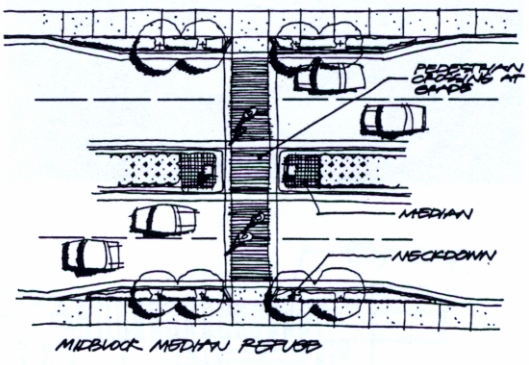


- Ensure that sidewalk cafes and other uses/features of the sidewalk area support rather than obstruct a continuous pedestrian network.

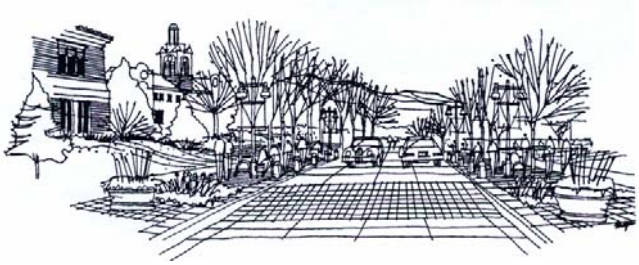
- Provide bridges and crossings over railroads, rivers, drainages, and other features that are major barriers to a continuous pedestrian network. Design these crossings to minimize out of direction travel.

Street Crossings (Follow ADA Guidelines for protruding objects and obstructions)

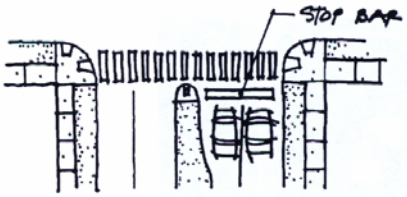
- Develop safe, comfortable, and attractive street crossings.
  - Develop median refuges to improve the safety and comfort of arterial street crossings.
  - Establish standardized street crossing improvements that include crosswalks, lighting, median refuges, corner sidewalk widenings, sign, signals, and landscaping.
  - Develop and design crosswalks that:
    - Are well-marked and visible to vehicles;
    - Fit and enhance the local urban design context and character; and
    - Provide for safety for all age/ability groups.
  - Develop civic improvements including pedestrian scale elements, landscaping, and sidewalk widenings, which improve the visibility and suggestion of pedestrians at street crossings.

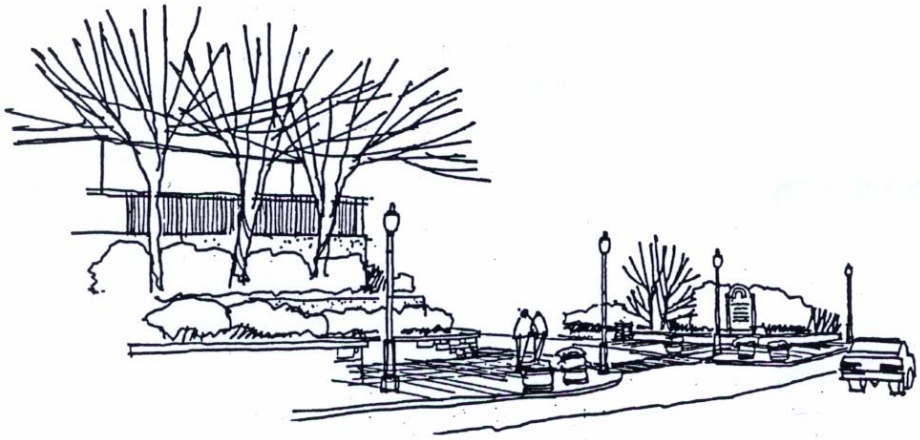


  - Consider street calming improvements to enhance the safety of street crossings.
  - Ensure that signals, signs, and street markings have clear vehicular and pedestrian indications for street crossings.
  - Ensure that street crossings are lit to reflect the patterns of use.
  - Provide automatic pedestrian phases at high demand intersections and pedestrian buttons at low demand areas.



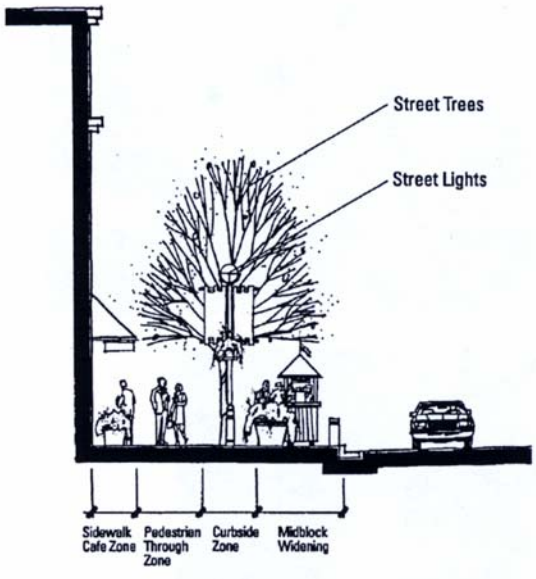
- Consider an exclusive pedestrian signal phase to improve safety.
- Install stop bars on all approach legs at signalized intersections.
- Minimize curb radius to:
  - Reduce the speed of right turning vehicles.
  - Reduce the distance for the pedestrian to cross the street.
- Locate lighting, signal and signage poles so that they not conflict with safe pedestrian circulation and allow access for people of different abilities.





Visual Interest and Amenity (Follow ADA Guidelines for protruding objects and obstructions)

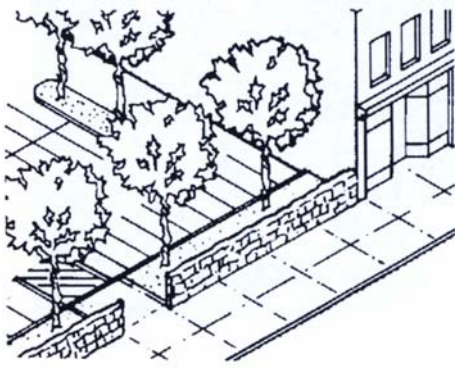
- Develop comfortable and attractive pedestrian facilities and settings to make an interesting pedestrian network.
- Pedestrian facilities and elements:
  - Provide pedestrian scale improvements that fit the urban context of the area. The color, materials, and form of pedestrian facilities and features should be appropriate to the area where it is located, as well as to the functional unity of the pedestrian network.
  - Develop attractive improvements including landscaping, vertical treatments, sidewalk widenings, and furnishing which improve the character and pedestrian scale of the urban environment.



  - Incorporate special design features, public art, and site details that can enhance the pedestrian scale of streets and become an urban amenity.

- Develop standardized lighting improvements, which enhance the character of the pedestrian environment. Consider the following criteria:
  - Varied light spacing and heights to be compatible with site specific issues.
  - Poles to incorporate pedestrian scale features such as banners, potted plants, etc.
  - Attractive luminaries to provide an organized and unified appearance throughout the pedestrian network.
- Use quality materials and design, which will minimize maintenance needs.
- Pedestrian facilities must be maintained.
- To enhance the character of the pedestrian environment and to encourage pedestrian activities along the sidewalks on key streets and corners, prohibit large surface parking lots in these locations.

- Landscaping:
  - Develop a continuous edge of deciduous canopy street trees on both sides of the street. Select species that provide shade, shelter, and scale for the sidewalk/pedestrian environment, and the continuity for the pedestrian/ sidewalk environment.
  - Develop attractive landscaping by considering the following criteria:
    - Reduce clutter of little plants and disorganized planting.
    - Establish patterns/spacing of street trees to provide a formal visual rhythm, linear edge, and organization of the sidewalk area.
    - Use a limited range of trees species to provide a unified image and cohesive character for feature corridors and districts.
    - Use specialty-landscaping themes to help distinguish districts.
    - **Use landscaping selectively** to soften harsh appearance of some buildings and parking lots at sidewalk edge.
  - Retaining walls should be of materials, which reduce their apparent scale, like brick or stone, or treated architecturally to create an appropriate scale and rhythm. Hanging or climbing vegetation can soften the appearance of retaining walls. High retaining walls should be terraced down and include landscaped setbacks.
  - Design attractive urban open spaces to have a distinctive and definite shape, enclosed by buildings on 2-3 sides so it feels like an "outdoor room," which is favored by



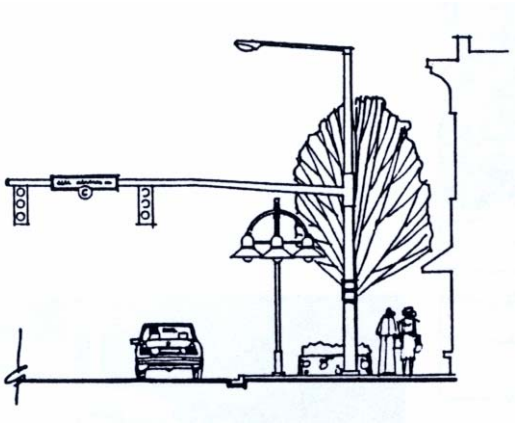
pedestrians. These must be located in the right places to be useful. Locate at intersections of 2 or more pedestrian routes.

- Screen blank building walls and retaining walls with landscaping, architectural features, or art to enrich the pedestrian environment.

- Buildings:
  - Encourage outdoor cafes and activity areas that provide pedestrian character and human scale to the sidewalk environment.
  - Windows and other openings should relieve blank walls, adding visual interest, improving pedestrians' sense of security, and introducing a human scale to building frontages.
  - Provide human scale character to the street with appropriate building design and details.
  - Incorporate building entry details like porches and recesses, occupied spaces like bay windows and balconies.

Security

- Develop secure pedestrian settings by developing a well-lit inhabited pedestrian network and by mitigating the impacts of vehicles.
  - Streets should appear inhabited to the greatest extent possible. New development should accommodate human activity by providing balconies, terraces, and yards for residents' use and interaction. In mixed-use buildings, retail elements like large windows, canopies, and integrated signage add activity by enhancing the shopping experience. Entrances, porches, balconies, decks, and seating should be located to promote pedestrian use of the street edge by providing weather protection, security, and safety.
  - Provide clear and direct lines of sight in pedestrian settings to increase feelings of security. Achieve this by minimizing use of shrubs, walls, berms, and other vertical features, which screen lines of sight to pedestrian facilities.
  - Provide general illumination for security and visual safety of pedestrian areas and corridors.



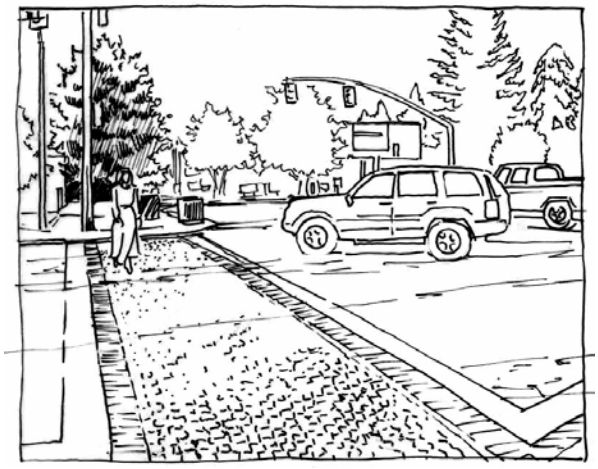
- Use lighting fixtures to identify and highlight key pedestrian facilities and elements such as pedestrian intersections, paths, sidewalks, and entrances, while enhancing safety, and security. Provide a desirable and safe pedestrian environment by decreasing glare associated with tall, high intensity street fixtures. Provide indirect light to the sidewalk by lighting elements in the street environment such as trees, walkways, canopies, and entryways.
- Develop physical buffers/edges between sidewalks and streets/parking lots.
- Avoid over-illumination of pedestrian areas, since these create, by contrast, shadowy areas nearby which may be threatening to pedestrians.

Considerations for Changes in Street Design Standards

The following section presents a series of treatments that should be considered to accommodate pedestrians These treatments include:

- Pedestrian Assessment Requirement for Arterial and Street Improvements
- Reduced Lane Widths
- Traffic Calming to Reduce Travel Speed
- Parking Lanes on Collector Streets
- Criteria for Crosswalk Locations and Design
- Crosswalk Treatment at High Use Pedestrian Areas
- Pedestrian Ramp Design
- Curb Radii
- Corner Ramps and Crosswalks
- Mid-Block Crossing Locations and Design
- Elevated Crosswalk to Refuge Island
- Bulbouts/Curb Extensions
- Advanced Stop Bars
- Pedestrian Improvement Installation in Existing Neighborhoods

Require Pedestrian Assessment for New Streets and Proposed Turn Lane and Widening Improvements



The number of travel lanes to cross is a significant safety factor for a pedestrian crossing the street. When the number of travel lanes increase, it is generally in response to higher traffic volumes. Therefore, the improvement generally results in the pedestrian being exposed for a longer amount of time to cross the wider street and that the pedestrian is exposed to a higher volume of traffic. If it is determined that the roadway improvement is necessary to accommodate existing or forecast automobile

traffic volumes, then enhancements to the pedestrian crossing should be considered wherever possible to accommodate pedestrian mobility and safety as defined in the Pedestrian Level of Service guidelines established for Street Crossings. These improvements or design considerations should be taken into account. In most cases, these topics are described in greater detail later in this chapter, but are summarized as follows:

- Type of Traffic Control
    - Signal with pedestrian signal heads.
    - Automatic walk signal phases (typically within pedestrian districts versus pedestrian activated push buttons).
    - Unsignalized intersection warning signs or pedestrian activated pedestrian warning crossing light.
- Cut through median pedestrian refuge island of six feet.
- Crosswalk treatment.
- Adequacy of street lighting levels.
- Pedestrian and intersection amenities to notify drivers that there is a pedestrian crossing present.
- Line-of-sight design triangles from pedestrian to automobile and automobile to pedestrian.
- Bulbouts.
- Stop Bars.

Institute Traffic Calming to Reduce Travel Speed

Speed is a significant safety factor for pedestrians trying to cross a street. Factors that might affect travel speed include traffic, number of access points, and geometric design. As mentioned previously, lane widths also contribute to travel speed. Whereas speed limits could be reduced in areas with pedestrian activity, they are seldom observed unless they are accompanied with traffic calming improvements such as narrower travel lanes, on-street parking, bulbouts, and crosswalk treatment. Other traffic calming techniques include signal timing and signal progression. As part of any future street or corridor improvement, particularly if the area is in a residential area or an activity area and already experiences high travel speeds that would potentially impact pedestrian safety, consideration should be given to incorporating traffic-calming techniques in the improvements design.

Parking Lanes on Collector Streets

The City of Kansas City typical cross sections does not include parking lanes on primary arterials, secondary arterials, and collector streets.

- Parking lanes along a collector road provides a positive element for a pedestrian friendly environment in that a person can park in front of his/her destination and walk to the building front;

- Parking lanes provide a separation between automobile and pedestrian and improves safety; and

- Parking lanes may have a calming effect on traffic speeds.

It is recommended that parallel parking lanes be considered in activity areas where there are close design elements between the building front and the street.

Criteria for Crosswalk Locations and Design

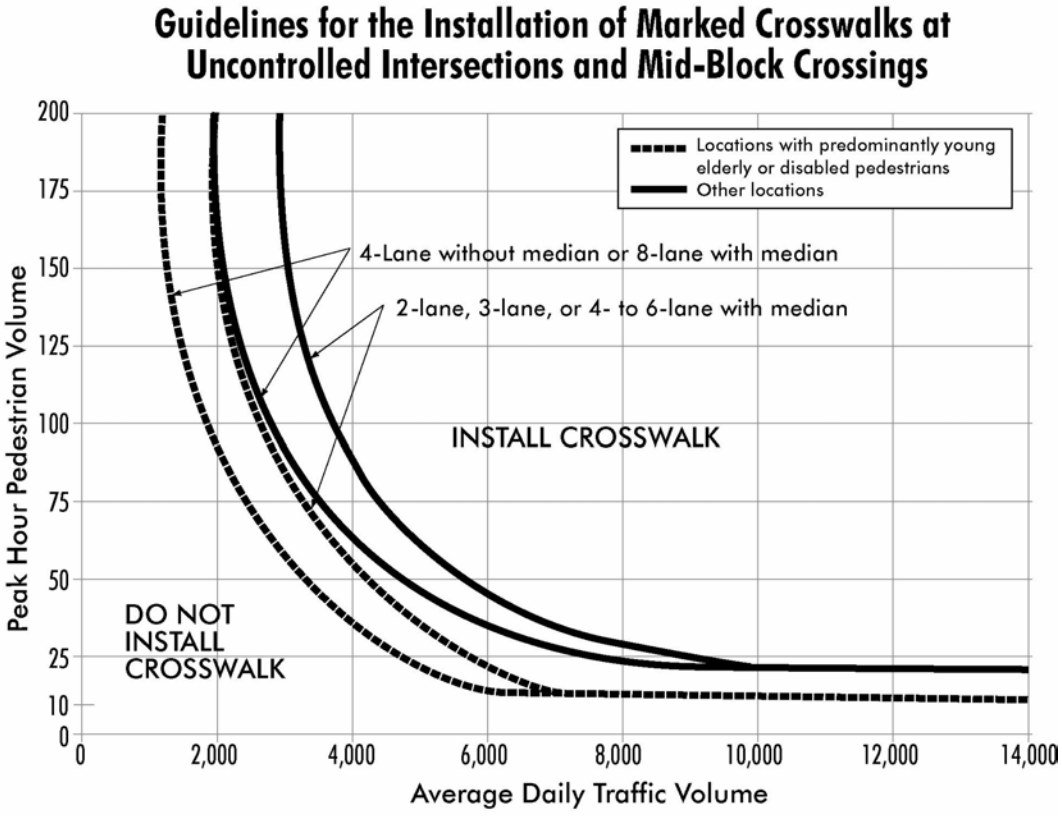
Current Kansas City ordinances, standards, and codes do not discuss the frequency of intersecting streets. From a pedestrian network perspective, extended distances between intersecting streets make it difficult for the pedestrian to cross the facility. Ideally, it would be desirable to have a system of grid streets that are around 400 feet in separation. This distance would be appropriate for local streets within residential neighborhoods and activity centers. Spacing between intersections on primary arterials and secondary arterials might need to be longer to accommodate the higher volumes of traffic, storage for signals, and signal progression.

The location and frequency of crosswalks along primary arterials, secondary arterials, and collector streets need to be balanced between need, traffic flow, and cost. Whereas an optimum pedestrian environment would have crosswalks at all major activity areas and spaced at 400-foot increments, too great a frequency of crosswalks can create a situation where the typical driver becomes immune to the crosswalk, which might create a safety factor. There is also the cost factor, both the initial installation costs and the long-term maintenance costs. Given limited funds and the competition for these funds, general guidelines should be considered when determining locations for crosswalks as follows:

- All signalized intersections with Americans with Disabilities Act (ADA)-accessible pedestrian activated push buttons, notification, and accessible approach.

- Locations that will attract high volumes of pedestrian volumes that conflict with high volumes of automobile traffic. The following is a chart that provides guidelines for the installation of marked crosswalks at uncontrolled intersections and mid-block crossings. This chart is from the ITE Manual, “Design and Safety of Pedestrian Facilities” where the actual or estimated volume of pedestrian’s crossings during the peak hour are compared to the streets traffic volume. This chart provides volume warrants for various width roadways with and without medians or refuge islands. Pedestrian volumes should be present for at least six months of the year. Vehicle volumes are based on Annual Average Daily Traffic.

Locations for safety, such as crosswalks to school sites (must be on an established route to school plan), transit stops, or activity areas.



Source: Smith and Knoblauch, AAA Transporation Research Record 1141 as reprinted in the ITE manual, Design and Safety of Pedestrian Facilities

- There exists adequate stopping sight distance as defined by Tables III-1 and III-2 in the AASHTO green book.
- All crosswalks shall be provided with ADA compatible ramps.
- If a median or refuge island is proposed, it shall be in compliance with ADA requirements.
- Bulbouts should be considered to reduce crossing time.
- Minimum spacing to the closest nearby crossing opportunity shall be 600 feet in rural settings and 300 feet in urban settings.
- For added visibility, the City should consider longitudinal (parallel) lines (often referred to as continental or piano key type crosswalk) rather than the standard two traverse (perpendicular) lines.

- All crosswalks that are located at controlled intersections, either signalized or stop controlled, should continue to include a stop bar at a minimum of four feet prior to the crosswalk.

Crosswalk Treatments for Pedestrian Use

In pedestrian areas or areas where it is the City's objective to improve pedestrian connections and use, the following recommendations are identified for the site layout or design:

- **Crosswalks**: Enhancements to crosswalks, including color, stenciling, and pavement treatment should be considered for all major intersection entryways to mixed-use centers.

- **Signal Indication**: Pedestrian signal heads should be included for all signalized intersections with crosswalks. The heads should be easily visible to the pedestrian and the motorist.

- **Lighting Levels**: The intersection should be well lit so that the pedestrian is visible at night.

- **Pedestrian Signal Indication and Pedestrian Buttons**: It would be desirable for all activity areas to have designated pedestrian phases. Pedestrian push buttons should be required for all other intersections. The location of the push button should be easily accessed and not require pedestrians to divert from their travel route. Signals without dedicated walk phases or push buttons are not acceptable since the only way a pedestrian may ever get a green light is when an automobile on the side street activates the cycle.

- **Countdown Signal Heads:** At signal locations that experience a high number of pedestrians such as at transit stops or universities, have experienced a large number of pedestrian accidents, or any other area where pedestrians often cross during the "Do Not Walk" phase, countdown signal heads should be considered to provide additional information about how much time is remaining for being able to cross the street.

Countdown signal head

- **Median Refuge Areas**: Painted medians offer little refuge other than getting out of a lane of traffic. Substantive raised medians of significant width with a cut through provide some increase in security for the crossing pedestrian. For arterials with four or greater lanes, a raised median refuge island should be designed for all intersections and mid-block crossings.

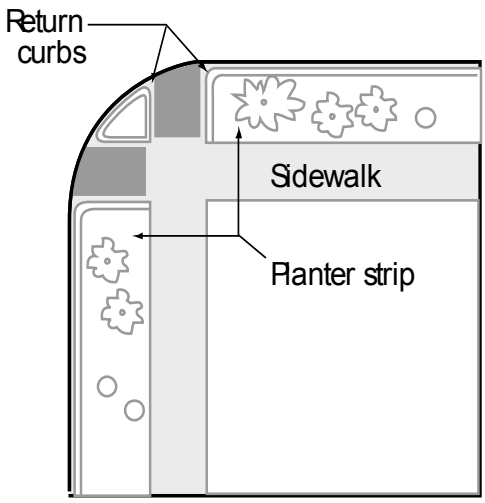
- **MUTCD/ADA**: Continue implementation of MUTCD and ADA pedestrian requirements for signalized intersections.

- **Amenity**: In pedestrian districts, amenities should include such elements as signing and design features that strongly suggest the presence of a pedestrian crossing.

- **Line-of-Sight Distance**: Sight distance measures the unobstructed view between the motorist and the pedestrian. This can be a problem particularly when a motorist intends to make a left turn under the permissive left turn phase and it is difficult to see pedestrians around the opposing left turn vehicle. Sight distance should be analyzed as a part of all intersection designs.

- **Right Turn on Red (Left Turn on Red on One-Way Streets)**: One of the greatest increases in pedestrian accidents has been associated with right turns on red lights. Research has determined that an extremely high number of drivers do not stop at the crosswalk before making their turn and instead continue on while looking to the left for approaching conflicting vehicles, not pedestrians in the crosswalk. Some jurisdictions have installed signs that do not permit right turns on red. As part of the traffic study, locations that would experience high pedestrian volumes should be identified. Restricting right turns on red shall be at the discretion of the Department of Public Works.

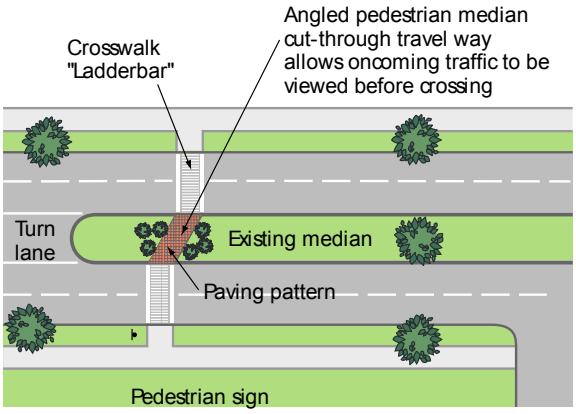
- **All Walk Phase**: This signal phasing treatment stops all automobile traffic and issues a walk phase for all directions, including diagonal crossing of the intersection. Signal phasing shall be at the discretion of the Department of Public Works.



Pedestrian Ramp Design

All pedestrian ramps located in pedestrian zones, activity areas, and at signalized-intersections should meet ADA Design requirements. It is recommended that directional design ramps be used whenever possible. These directional pedestrian ramps notify the driver as to which street the pedestrian is crossing. Single directional ramps are not recommended as they do not let the driver know the intent of the pedestrian as to which street will be crossed.

Mid-Block Crossing Locations and Design

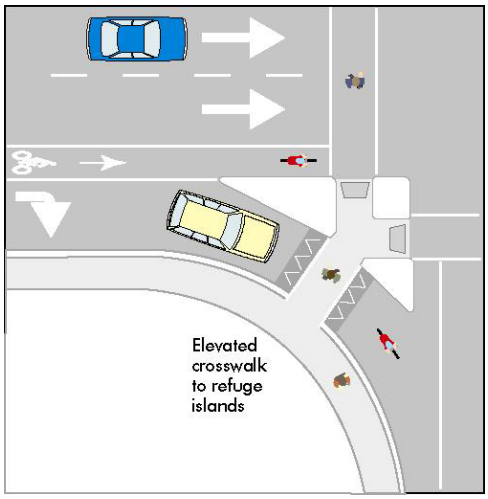


Mid-block crossings should be considered where there is an existing or potential pedestrian demand to cross at higher volume roadways or streets where crossings are greater than 600 feet. Ideally, these crossings should be accommodated with a refuge island. Center crossing islands allow the pedestrian to deal with only one direction of traffic at a time and they enable them to stop partway across the street and wait for an adequate gap in traffic before crossing the second half of the street. Where mid-block crosswalks are installed at uncontrolled locations (i.e., where no traffic signals or stop signs exist), crossing islands should be considered as a supplement to the

crosswalk so that the pedestrian will only have to cross one lane at a time. Providing an angled pedestrian travel way across the median allows oncoming traffic to be better viewed before crossing, further improving safety.

Elevated Crosswalk to Refuge Island

In locations where a dedicated right turn lane is proposed, the design may include a raised crosswalk at the height of the curb and a ramp for the vehicles to cross the crosswalk. This resulting design is similar to that of a 10-foot speed table with a six-inch up-ramp, table, and down-ramp. In addition, the crosswalks should be of a different color to differentiate use.

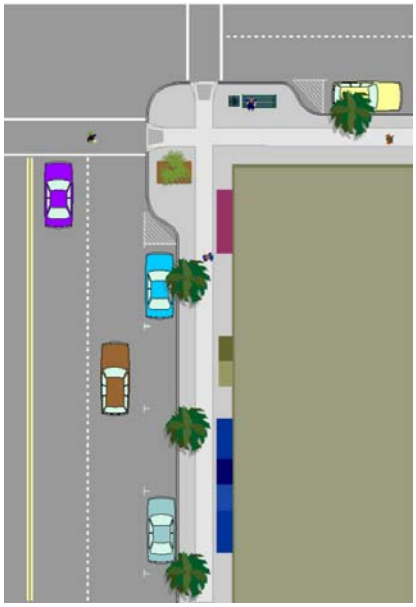


Bulbouts/Curb Extensions

One such area for consideration is the use of bulbouts or curb extensions. These types of devices are becoming very popular in many cities to improve the pedestrian environment. Bulbouts are simply intersection curb extensions, which extend past the parking lanes, but not into the bicycle or through lanes. The advantages of bulbouts are as follows:

- Bulbouts provide an entry or gateway statement into activity areas or where high volumes of pedestrians are present. Entering an area where a bulbout is present provides a clear difference between the arterial function and a local pedestrian activity area.

- Bulbouts enhance the visibility of the pedestrian because they physically permit the pedestrian to be located closer to the travel lanes, especially where parking is permitted, and allow the pedestrian to be seen more easily by the driver.



- The bulbout changes the turning radius at the intersection, which reduces turning speed and vehicle and pedestrian conflicts.

- The extension of the bulbout reduces the time it takes pedestrians to cross from curb to curb. This reduction in pedestrian crossing time consequently reduces the time the pedestrian is exposed to moving vehicles.

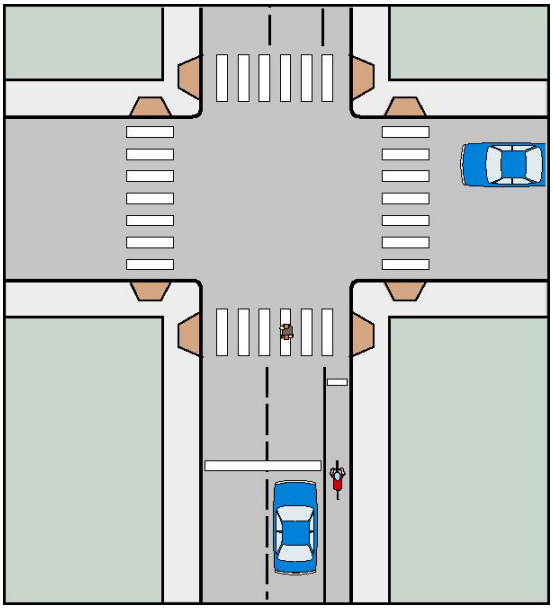
- Bulbouts change the character of the intersection from automobile-dominant to pedestrian-friendly and multimodal-shared.

- Bulbouts can be an extremely positive visual and aesthetic enhancement. Features such as pedestrian lighting, planters, and benches create a focal point for pedestrian activity and

change the character of the intersection from automobile to pedestrian. It should be noted that care must be taken when aesthetically enhancing bulbouts as such enhancements can block sight distances and create accident problems.

Stop Bars

Current industry standards require a stop bar be a minimum distance of four feet prior to the crosswalk. This stop bar is crucial for having vehicles stop prior to entering the crosswalk. At signalized intersections and mid-block crossings, the vehicle stop line may be moved farther back from the pedestrian crosswalk for an improved factor of safety, improved visibility of pedestrians by motorists, and of motorists by pedestrians. One study identified a 90-percent reduction in conflicts between automobiles and pedestrians through the addition of an advanced stop line. The advanced stop line allows pedestrians and drivers to have a clearer view of each other and more time in which to assess each other's intentions. Stop bar location shall be at the discretion of the Department of Public Works.



Modern Roundabouts

The use of modern roundabouts as an alternative to conventional stop and signal control intersections is becoming increasingly popular in the United States. Studies conducted by the insurance industry have determined that these types of intersections result not only in a significant decrease in automobile traffic at an intersection, but also a reduction in pedestrian accidents as well.

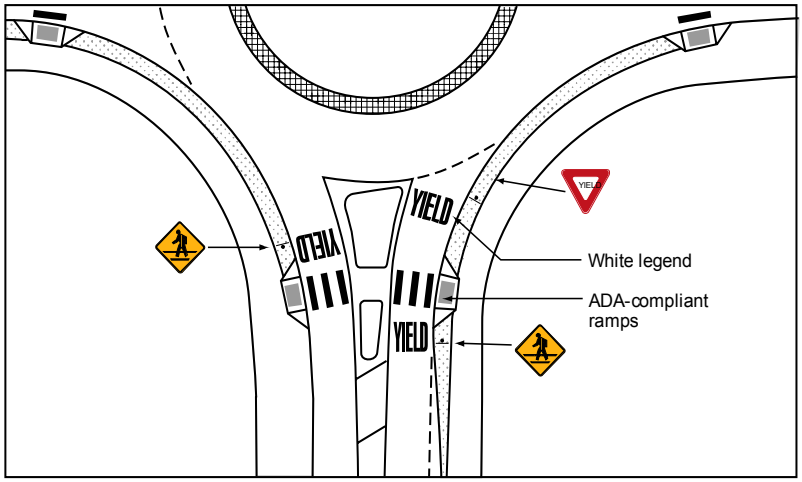
At a conventional intersection, the pedestrian faces four potential vehicle conflicts:

- Crossing movements on red (typically high-speed, illegal)
- Right turns on green (legal)
- Left turns on green (legal for protected-permitted or permitted left turn phasing)
- Right turns on red (typically legal)

Pedestrians at roundabouts, on the other hand, face two conflicting movements on each approach:

- Conflict with entering vehicle
- Conflict with exiting vehicle

Modern Roundabout Pedestrian Crosswalk Treatment



The crossing of the roundabout is relatively simple. The pedestrian waits for a gap in traffic and crosses from the curb to the splitter island that provides protection, and then crosses from the splitter island to the far curb when a gap in traffic occurs. Crossing in two steps reduces the vehicle exposure in half for each segment. In addition, safety is improved because the vehicles are forced to go slower through the roundabout than at a conventional intersection. The modern roundabout pedestrian crosswalk treatment consists of:

- ADA compliant ramps
- Visual impairment issues should be considered.
- Conventional crosswalk striping
- Raised splitter island pedestrian pass through and refuge
- Pedestrian crossing sign
- Yield street markings
- Yield signs

Typically, the crosswalk is placed approximately one car length from the yield bar to permit the pedestrian to safety walk behind a vehicle that is awaiting a merge into the roundabout when traffic permits.

Red Light Camera

In order to address increased aggressive driver behavior from running red lights, which create extreme hazards for pedestrians, more and more cities are installing red light cameras.

Drivers running red lights are detected by loops in the street. Once the camera detects a violation, it takes a color photograph of the car just before it crosses the stop bar. A short time later a second color photo is taken, showing the car in the intersection. These photographs show the traffic signal heads, violating car and its physical position relative to the stop bar. These photos are of sufficient resolution to allow the contract red light camera provider or police to zoom in and read the license plate.

There are a number of vendors that provide the cameras and installation and process tickets. These vendors are typically paid on a cost per ticket issued basis, in which there are no costs to the City and often the City will receive revenue from fines collected. This provides an attractive opportunity for City's to address red light running.

Pedestrian Improvement Installation in Existing Neighborhoods

A large number of Kansas City's residential streets do not have sidewalks. In some cases, these residential neighborhoods were built outside the City limits and later annexed. In other cases, they were built during a time where sidewalks were not required. Often these streets were designed and built without other standards, such as curbs, gutters, and setbacks.

The ability to retrofit these streets is a function of need, design, and cost issues. As discussed previously in this report, this Kansas City Walkability Plan does not propose installation of sidewalks throughout the City within all neighborhoods as the pedestrian demand is not warranted and the cost for such installation is not in the best interest of the City. Rather, it proposed that neighborhood self-evaluations be proposed where specific connections between residential areas and important destinations, such as schools, parks, and commercial centers might warrant pedestrian improvements.

When sidewalks are needed, the City should consider variances to its current street standards. This is due to the fact that many existing streets do not have adequate right-of-ways and setbacks and would result in a negative impact to the community through the loss of landscaping, right-of-way acquisition, and a general change in character for the community. A variance might include an asphalt strip on only one side of the facility, with a reduction of through travel lane widths to accommodate the pedestrian path. A high visible, tactile pavement with contrasting paving material and color should be considered. A three to five-foot strip or wide shoulder on local roads with lower traffic volumes (less than 400 ADT) and lower speeds (less than 40 mph) may provide sufficient walking space. A wider walkway or shoulder would be recommended when traffic volumes and speeds exceed the above values.

Pedestrian Plan Implementation and Responsibilities

The responsibility for implementing the plan's recommended ordinances and codes lies primarily with the City Planning and Development, Public Works, and Codes Administration Departments. Whereas the majority of the recommendations are refinements or expansions of existing policies and codes, administrating the requirement for conducting a pedestrian impact assessment and the review of the pedestrian study is new. The Pedestrian Traffic Impact Analysis would be required in any of the following circumstances:

- When a Traffic Impact Study is required;
- Where the proposed development is requesting City incentives;
- When the proposed development includes commercial or institutional uses of at least 15,000 square feet;
- When the proposed development includes mixed uses (commercial/residential/institutional uses in any combination);
- When a proposed development includes an arterial or larger street.

City staff shall use Pedestrian LOS standards to evaluate and make recommendations on proposed residential development consisting of at least 20 dwelling units, which may reasonably regarded as a contiguous neighborhood or which are part of a single subdivision, when such development is to be located within ¼ mile of Pedestrian-Oriented Zones, Great Street and Boulevards, Mixed Use and Multimodal Transportation Centers, Transit Impact Zones, Schools/Parks/Community Centers/Libraries/Hospital/ Health Care facilities, transit stops or commercial uses of 15,000 square feet or larger, or the land use plan or zoning calls for them;

The City Planning and Development Department shall make the final decision as to whether an applicant meets one of the above criteria and will be required to prepare a pedestrian impact study. As part of the Pedestrian Impact Study, applicants shall provide a design or acceptable mitigations to increase pedestrian level of service to City standards and shall not degrade the pre-development level of service internal to or within ¼ mile of the edge of the proposed development.

As presented previously, the pedestrian impact assessment should be required for not just proposed private developments, but also public improvements. To this end, the Departments of Planning and Development and Public Works should conduct traffic impact assessments of all major public improvements. Specific emphasis shall be for made for street improvements that propose additional travel lanes and right or left turn lanes regarding pedestrian level of service street crossing impacts. If said improvements are proposed, they should be mitigated with additional amenities as prescribed under the Pedestrian Level of Service criteria. Areas to consider in these improvements, as adapted from the Washington DOT, Pedestrian Facilities Guidebook, and the Mid America Regional Council's "Creating Walkable Communities" are as follows:

- Streets that are interconnected and small block patterns that provide good opportunities for pedestrian and mobility.
- Narrower streets, scaled down for pedestrians and less conducive to high motor vehicle speeds.
- Traffic calming treatments to help ensure that motor vehicles are operated at or below compatible speeds.

- Wide and continuous sidewalks that are fully accessible, that are fairly level (avoid driveway slope impacts) and are well maintained.
- Well-designed intersections to ensure easy, safe crossings by pedestrians of all ages and abilities.
- Well-designed and marked crosswalks, both at intersections and where needed, at mid block locations.
- Appropriate use of signs and signals for both pedestrians and motorists, with equitable treatment of pedestrians.
- Cut through median islands on wider streets to provide a refuge for crossing pedestrians.
- Street lighting designed to pedestrian scale (i.e., shorter light poles and/or lower fixtures that are designed to be effective in illuminating the pedestrian travel way).
- Planting buffers, with landscaping and street trees that provide shelter and shade without obstructing sight distance.
- Street furnishings and public art intended to enhance the pedestrian experience, such as benches, trash receptacles, drinking fountains, and newspaper stands, placed so as not to interfere with pedestrian travel.

The ultimate objective though this process is for the Departments of Planning and Development, and Public Works to think about the pedestrian and the walkability of the City in all projects undertaken. Over time, this philosophy and thinking of the details will help grow and mature the City of Kansas City into a great pedestrian place to be – the Connected City.

Kansas City and Missouri Department of Transportation Pedestrian Coordination

Another issue that affects Kansas City as well as other communities is the fact that portions of the roadways within Kansas City are not City streets, but State facilities. The City cannot require proposed developments to make improvements on State facilities. It is therefore, recommended that the City of Kansas City work cooperatively with the Missouri Department of Transportation (MoDOT) to encourage a more pedestrian friendly MoDOT infrastructure where studies indicate pedestrian activity.

Pedestrian Improvements Capital Improvement Program

Currently, the City of Kansas City is funding between $4 and $5 million annually for ongoing and dedicated sidewalk and pedestrian improvements. The current 2002-2007 Five Year Capital Improvement Program (CIP) includes a number of funding programs to improve sidewalks within the City. In total nine CIP categories address pedestrian sidewalk improvements. A summary of these programs and expenditures are presented in the following table.

Program	Budget	Projected				
	2002-03	2003-04	2004-5	2005-6	2006-7	Total
Curbs & Sidewalks – RPI	$935,000	$1,000,000	$1,000,000	$1,000,000	$1,000,000	$4,935,000
Supplemental RPI	374,000	400,000	400,000	500,000	500,000	2,174,000
Citywide Sidewalks – Non Assessable	841,500	900,000	900,000	900,000	900,000	4,441,500
ADA Curb Cuts	607,750	650,000	850,000	1,100,000	1,100,000	4,307,750
City Owned Sidewalks and Curbs	280,500	400,000	400,000	400,000	400,000	1,880,500
Boulevard Curbs & Sidewalks	998,380	1,414,000	1,530,000	1,530,000	2,500,000	7,972,380
Streetscape Maintenance	187,000	300,000	300,000	300,000	300,000	1,387,000
Downtown Streetscape	0	0	0	0	500,000	500,000
Independence Corridor	0	200,000	200,000	0	0	400,000
Total	**$4,226,129**	**$5,264,000**	**$5,580,000**	**$5,730,000**	**$7,200,000**	**$27,998,130**

Curbs and Sidewalks – Revolving Public Improvement Fund

The purpose of the *Curbs and Sidewalk Revolving Public Improvement Fund* is to provide a funding source for the maintenance of curbs, sidewalks, and drive approaches. Because the maintenance for curbs, sidewalks, and driveway entrances is the responsibility of the abutting property owner, the *Curb and Sidewalk Revolving Public Improvement Fund* offers property owners a method of financing the improvements over a period of years. Because these funds are paid back, the fund is revolving and payments are reauthorized for new improvements.

In order to increase the efforts in addressing the deterioration of sidewalks in the older sections of the City through a systematic inspection and replacement program, the current CIP allocates $1,000,000 annually from the General Fund.

Supplemental Revolving Public Improvement (RPI) Fund

The current CIP provides for $375,000 to $500,000 per year of additional funding for the revolving fund, which finances repairs to sidewalks assessed to property owners. This will allow for the continuation and expansion of the program to address deterioration of sidewalks throughout the City. The City Charter requires property owners to maintain sidewalks, curbs, and drive approaches abutting their properties. The RPI fund allows assessments for repairs to be financed over a period of six years. Given the extent of pedestrian improvements identified for the City, it is recognized that this fund is inadequate. At the same time, however, it demonstrates recognition on behalf of the City the importance of the sidewalk infrastructure.

Citywide Sidewalks – Non-Assessable

On a continual basis, the Public Works Department receives petitions for complete sidewalk/ curb replacements for a block face or for large areas with single property owners requesting to improve/replace existing curbs and sidewalks. These types of projects involve costs that are the City's financial responsibility, such as curbs/sidewalks within an intersection to meet ADA requirements and storm water inlets that must be rebuilt/replaced as part of the total reconstruction. The funding reflects the departments estimate to meet its yearly needs to fund its share of anticipated project costs and leverages approximately $1,000,000 annually in construction and project costs financed through the Special Assessment Revolving Fund. The individual property owners pay the special assessments.

ADA Curb Cuts and Emergency Corner Replacements

The ADA requires that cities provide safe and accessible public sidewalks for all citizens, including those with disabilities. This program is required by the Philadelphia decision regarding ADA access at intersections. The emergency ADA corner replacement is for people with disabilities needing access to curbs for home, work, and access for all City programs and services. The CIP funding for this category proposes a systematic annual increase from approximately $600,000 for year one of the CIP to $1,100,000 for year five.

This program is an ADA companion to the street resurfacing program and addresses accessibility at intersections where streets are resurfaced. The emergency component of this program addresses accessibility at corners where needed in response to citizens request, complaint, or prioritized observed deficiency. The program is administered separately through the Public Works Engineering Division and the City's ADA specialist, in cooperation with the Streets and Traffic Division and the Parks and Recreation Department.

City Owned Sidewalks and Curbs

The Public Works Department is charged with maintaining all City properties purchased and maintained with General Fund revenues. Many of these properties have either abutting curbs or sidewalks with the dedicated street rights-of-way or need on-site improvements. This funding finances the continuing repair to these facilities. A majority of the work is associated with work performed via the special assessment process, and moneys from this fund are used to pay the project costs assessed to City properties. The fund also serves as a reserve account

to finance any emergency curb/sidewalk repairs required on-site at City-supported facilities. The CIP allocates $400,000 annually for this fund.

Boulevard Curbs and Sidewalks

One of Kansas City's most noted features is its 186-mile system of boulevards and parkways. Pavement, curbs, sidewalks, driveways, and drainage structures need to be rehabilitated or replaced at many locations along the system, despite its overall high quality. As is the case with every other item in the preservation and restoration portion of the capital budget, the recommended level of funding for these reconstruction efforts is inadequate. Whereas the current CIP allocates between $1,000,000 and $2,500,000 per year for Boulevard Curbs and Sidewalks, the annual maintenance required in merely maintaining the current system is $3,500,000 dollars. By consistently under funding these improvements, the backlog for reconstruction grows yearly. These are some of the most heavily traveled roads in the City. They are designed and constructed to the highest of standards with the intent of providing users with a comfortable ride along scenic corridors and pedestrian walkways that serve as connecting links to the City's parks, commercial centers, and residential neighborhoods. Persistent under funding of necessary maintenance will continue to detract from their character and utility and increase the amounts needed for reconstruction. The Kansas City Walkability Plan encourages increased funding of the CIP to maintain the current system and to target Boulevards with the greatest pedestrian demand and usage.

Streetscape Maintenance

This annual CIP program provides capital maintenance for the streetscape projects that have been completed within the City. Streetscape projects help to define and improve both commercial and residential areas in the City. Public investment in new sidewalks, curbs, landscaping, decorative lighting, and site amenities such as benches and markers provide incentives for private investment to redevelop our neighborhoods and commercial areas. These projects include Broadway Streetscape, Southwest Boulevard Streetscape, and Independence Corridor. Streetscape projects typically involve new sidewalks, curbs, landscaping, decorative lighting, and ornamental trees. The current CIP funding is targeted for continued replacement of sidewalk pavers on Broadway, and landscape planter and decorative lighting repairs on Independence and Broadway Boulevards.

Downtown Streetscape - Broadway - 6th to 12th

The purpose of the Broadway Corridor Enhancement Plan is to begin a process for revitalizing the physical appearance of the Broadway Corridor. This plan should serve as a guide for the design and implementation of future improvements along the corridor. Proposed improvements will include construction of the proposed streetscape design concept in phases along the corridor, street-level pedestrian green spaces, and screening of existing surface parking lots.

Independence Corridor

Included in the current CIP are special dedicated funds to create a more pleasing shopping and residential district, capturing the historic nature of the area in keeping with a study developed for the Independence Corridor. This funding would be combined with

neighborhood conservation funds to continue construction of the streetscape features. Improvements include the segments from Olive to Wabash, Park to Highland, and the Paseo. As a result of the efforts of the Northeast Alliance Together (NEAT), a planning process was instituted that investigated various public improvement needs along the Independence Avenue corridor between The Paseo and Benton Boulevard. The resulting plan envisions Independence Avenue as serving the primary gateway to downtown from the eastern portion of the City.

Capital Improvement Program Recommendations

Based on the Citywide Pedestrian Needs Assessment and the Pedestrian Zone Case studies analysis, the City would require $20 to $100 million to address the high and moderate pedestrian needs for the City of Kansas City. This would equate to $1 to $5 million annually over a 20-year horizon.

As mentioned previously, the City's current annual budget for pedestrian improvements is between $4 and $5 million annually. This equates to about one-half going to maintenance with the other half going to sidewalk improvements, ADA curb cuts, targeted corridors, and district pedestrian improvements. Whereas the $2 to $2.5 million annually will not be sufficient to address all of the moderate pedestrian needs identified in the Citywide Pedestrian Assessment, the annual budget can go a long way in addressing the City's most major pedestrian needs.

The key to the Pedestrian Capital Improvement Program is consistency in maintaining the City's pedestrian system and not letting the system fall into further disrepair. Being good stewards with what budget is available for addressing the City's long-term major and moderate pedestrian needs is key to the CIP.

Although the current pedestrian capital improvement programs for addressing major pedestrian improvements is sound, the Kansas City Walkability Plan, including citywide assessments and evaluation tools, should be used to further prioritize these improvements. These prioritizations would include:

- Continue ADA curb cuts and corner replacements;
- Make improvements to Pedestrian Zones, Great Pedestrian Streets and Boulevards, Mixed Use and Multimodal Transportation Centers and Transit Impact Zones to raise the pedestrian level of service to standards recommended in the Kansas City Walkability Plan;
- Make improvements in High and Medium Demand Areas of the city as determined by citywide walking facility needs assessment; and
- At the neighborhood level, make improvements to the highest priority pedestrian mobility items as identified by a neighborhood through use of a Kansas City Walkability Plan Neighborhood Walking Survey.

VI. Implementation

The primary objective of the Kansas City Walkability Plan is to provide the City's visitors, residents, and employees with a pedestrian system that allows walking to be a valid and valued choice of travel regardless of age or ability. As indicated through past trends where walking has become less and less a mode of travel, achieving a meaningful increase in walking will be a challenging goal, and will require changes in ordinances and standards as well as making capital investments in the City's pedestrian infrastructure.

Contained in Chapter V of this report are a number of recommendations for changes in ordinances, standards, codes, policies, and the Capital Improvement Program. Implementing these recommendations is probably the most important thing the City can do to improve long term walking for the City. These changes are fiscally neutral, will require moderate effort in the course of current development review and will result in a positive change to the environment and avoiding further barriers to pedestrian mobility.

Summary of Recommended Changes to Ordinances, Codes and Design Standards

Pedestrian Action 1: Pedestrian Traffic Impact Analysis and Pedestrian Level of Service Requirements

Require applicants for certain types of development approvals to conduct a pedestrian traffic impact analysis that addresses directness, continuity, street crossings, visual interest and amenities, and security for pedestrians, in accordance with Appendix C of the Walkability Plan. The Pedestrian Traffic Impact Analysis will generally be required with a Traffic Impact Study or when the proposed development is requesting City incentives. City Development staff, in consultation with Public Works staff, shall make the final decision on whether to require a Pedestrian Traffic Impact Analysis in those circumstances or to waive the requirement. Guidelines for recommending a Pedestrian Traffic Impact Analysis at the time of a Traffic Impact Study or when City incentives are requested, are as follows:

- When the proposed development contains or is within a quarter mile of one or more potential pedestrian origins or destinations such as large residential concentrations, transit stops, schools, parks, a community center or library, commercial, institutional or mixed use area, or FOCUS designated pedestrian-oriented zone or street.

The Pedestrian Impact Study shall be completed by the time the Traffic Impact Study is completed and the preparation of the study shall not delay the development approval process.

City staff may use Pedestrian LOS standards to evaluate and make recommendations on any proposed development or redevelopment, consistent with recommendations of the ***Kansas City Walkability Plan***.

Pedestrian Action 2: Pedestrian Assessment for New Streets

The City of Kansas City, City Planning and Development and Public Works Departments shall conduct a pedestrian crossing level of service assessment for all proposed major roadway improvements that add additional through lanes and/or additional turn lanes to determine the impact of the proposed roadway improvement on pedestrian mobility, and identify and construct mitigation to offset the pedestrian impact.

Pedestrian Action 3: Pedestrian Connectivity Requirements

The City should update the City's Subdivision Code and Site Design Standards to improve pedestrian connectivity for new developments. These pedestrian connectivity recommendations as identified in Chapter V include:

- Provide pedestrian connections between subdivisions.
- Provide pedestrian connections between cul-de-sacs where directness between a residential lot and a local shopping, school or park site are negatively impacted to unacceptable levels of service.
- Provide direct and non-circuitous pedestrian connections between residential developments and destinations including, but not limited to schools, parks, retail, employment and public uses.
- Commercial office and retail projects shall provide an onsite system of pedestrian walkways that provide direct pedestrian access from the front door to perimeter streets, adjacent developments and existing or planned transit stops.

Pedestrian Action 4: Site Design Features and Accommodations for Pedestrians

The City should update the City's Subdivision Code and Site Design Standards to improve and promote pedestrian mobility within the development and to destinations outside the development. These design features and recommendations as identified in Chapter V complement the five measures of pedestrian level of service:

- Provide direct, visible and clearly marked connections from building entries to transit, adjacent streets and adjacent developments.
- Provide a continuous and understandable pedestrian network, which is pedestrian-scaled and promotes a unified theme for pedestrian activity.
- Develop safe, comfortable and attractive street crossings, which include traffic-calming elements and promote a pedestrian presence.

- Provide pedestrian scale improvements, which are comfortable, attractive and interesting for pedestrian activity.

- Develop a secure pedestrian setting by developing a well-lit and inhabited pedestrian network and by mitigating the impacts of traffic.

The Walkability Plan recommends a policy of mandating completion of sidewalks in new subdivisions by the original subdivision developers or lot owners by a date certain or after a certain percentage of the subdivision has been sold. City staff should develop a mechanism to implement this policy.

Pedestrian Action 5: Considerations for Street Design Criteria

The Walkability Plan identifies a number of recommended guidelines and street design standards that would improve pedestrian mobility and help promote and construct pedestrian improvements. These guidelines and standards should be incorporated into appropriate Kansas City codes, standards, policies, and guidelines. Some of these improvements are not currently practiced in Kansas City and will require modification of some existing contradictory street standards. The plan recommends both permitting and encouraging these modifications. Some of these pedestrian safety improvements include but are not limited to:

- Criteria for Crosswalk Locations and Design
- Crosswalk Treatment at High Use Pedestrian Areas
- Pedestrian Ramp Design
- Curb Radii
- Corner Ramps and Crosswalks
- Mid-Block Crossing Locations and Design
- Elevated Crosswalk to Refuge Island
- Bulbouts/Curb Extensions
- Advanced Stop Bars
- Pedestrian Improvement Installation in Existing Neighborhoods
- Reduced Lane Widths
- Traffic Calming to Reduce Travel Speed
- Parking Lanes on Collector Streets

Pedestrian Action 6: Neighborhood Pedestrian Assessment and Engineering Standards Variance

The City should continue to assist citizens and neighborhood organizations in conducting neighborhood pedestrian assessments. Because retrofitting existing neighborhoods with pedestrian improvements that meet current City Engineering Standards is often both impractical and not affordable, Public Works should be given flexibility in the design of pedestrian improvements that while not at current City standards, would improve overall safety for the neighborhood as compared to not making the improvements. An example might be construction of sidewalks without curb and gutters.

Pedestrian Action 7: Funding and Prioritization of Pedestrian System Improvements

The City's non-discretionary (excludes maintenance and replacement programs) current annual budget for pedestrian improvements is between $2 and $2.5 million. This budget will not be sufficient to address all of the moderate pedestrian needs identified in the Citywide Pedestrian Assessment but will be adequate in addressing most of the City's major pedestrian needs. Being good stewards of what budget is available for addressing the City's long-term major and moderate pedestrian needs is key to the Capital Improvements Program. Because there are pedestrian improvements needs that greatly exceed the available City funds, City funds should be targeted to those areas where there are high walking facility needs with low pedestrian system improvements.

Although the current pedestrian capital improvement programs for addressing pedestrian improvements is sound, the Kansas City Walkability Plan, including citywide assessments and evaluation tools should be used to further prioritize these improvements. Prioritizations to consider would include:

- Continue ADA curb cuts and corner replacements;
- Make improvements to Pedestrian Zones, Great Pedestrian Streets, Mixed Use and Multimodal Transportation Centers and Transit Impact Zones to raise the pedestrian level of service to standards recommended in the Kansas City Walkability Plan;
- Make improvements in High and Medium Demand Areas of the city as determined by citywide walking facility needs assessment; and
- At the neighborhood level, make improvements to the highest priority pedestrian mobility items as identified by a neighborhood through use of a *Kansas City Walkability Plan Neighborhood Walking Survey*.

Because Capital Improvements funding is limited, the City should provide neighborhoods with planning assistance in forming a Community or Neighborhood Improvement Districts to help finance walkability improvements as identified through Neighborhood Walking Surveys or Pedestrian Level of Service surveys.

Pedestrian Action 8: Coordinate Pedestrian Planning Issues

Develop an organizational focus to coordinate pedestrian planning activities within the city. This focus should include representatives from the Departments of City Planning and Development, Public Works and Parks, the City's Transportation and Development Committee, Mid-America Regional Council (MARC), and the Kansas City Area Transit Authority. The organizational focus should be toward internal and external pedestrian education, coordination and overall implementation of the City's pedestrian network.

Pedestrian Action 9: Pedestrian Education and Enforcement

Develop a pedestrian education program as part of City's overall communication and education program. Coordinate police resources and manpower to enforce pedestrian and vehicular traffic laws.

Pedestrian Action 10: City of Kansas City and Missouri Department of Transportation Pedestrian Requirements

State roads in Kansas City are under the jurisdiction for construction, improvement, and/or maintenance by the Missouri Department of Transportation. Therefore, the City cannot require of proposed developments improvements, including those that would accommodate pedestrians that are within the State facilities right-of-way. The City of Kansas City should work cooperatively with the Missouri Department of Transportation to encourage a more pedestrian friendly MoDOT infrastructure where studies indicate pedestrian activity.

Appendix A – Best Practices Pedestrian Plan Literature Review

This appendix discusses the many aspects of pedestrian planning and improvements based on research that was conducted on national efforts to evaluate and plan for pedestrians. Text has been modified and enhanced from various sources. The majority of the text has been adapted from www.walkinginfo.org, a website with a wealth of information about pedestrian issues, maintained by the University of North Carolina Highway Safety Research Center under a contract with the United States Department of Transportation (USDOT).

Pedestrian Planning, Improvement Selection and Prioritization

The walking mode has experienced decades of neglect in mainstream transportation planning practices and roadway design. The results are seen in nearly every city and town across the country - communities were built without sidewalks and roadways have no additional space for bicycling. As cities and towns begin the work of redeveloping their transportation systems to support bicycling and walking, the list of needed improvements far outstrips available dollars. So planners have begun to look for ways to set priorities - one of which is predicting demand.

The question that planners have begun to ask is this, “if we build this walkway, how many people can we expect to use it?”

Finding the answer to this question is the fundamental aspect of predicting demand. Transportation planners have been asking, and answering, this question for motor vehicular travel since the late 1960's when the first travel demand models were developed. By contrast, bicycle and pedestrian researchers are only just beginning to scratch the surface on these topics.

For pedestrians to have a seat around the transportation table, it is important to acknowledge that some level of analysis must also be done for these modes. Transportation planners have a responsibility to ensure that public funds are being spent wisely - in locations where a larger

number of people will benefit from new facilities. There is a growing trend to quantify the air quality benefits and congestion relief that can be expected because of Congestion Mitigation and Air Quality (CMAQ) projects. For bike and pedestrian facilities, this means coming up with a solution to determine how many auto trips will be diverted.

While the science of predicting bicycle and pedestrian travel demand has not yet developed to the same level as motor vehicle planning, there are a number of methods that planners have developed over the years to help quantify which locations have higher levels of demand. When planning bicycle and/or pedestrian facilities, it is important to remember that current volumes usually do not reflect demand for two reasons:

1. Existing conditions and gaps in the network result in fewer users - potential users are deterred by dangerous conditions.

2. Dispersed land uses create trip distances that are perceived as being too far to make on foot or by bicycle.

There are two methods of determining demand for bicycle facilities: 1) the intuitive approach and 2) the use of demand forecasting models. The intuitive approach is less time consuming, however it does not yield precise results. This type of planning analysis is also called a "sketch plan." A sketch plan typically focuses on proximity between origins and destinations, since distance is a primary factor in the initial decision to take a walking or bicycling trip. According to the Nationwide Personal Transportation Survey (NPTS), the majority of pedestrian trips are 0.25 miles or less, with 1 mile generally being the limit that most people are willing to travel on foot. In other words, most people are willing to take a five to ten minute walk at a comfortable pace to reach a destination. The majority of bicycle trips are 3 miles or less - or about a 15-minute bike ride.

NPTS data also shows that land use patterns and population density have a big impact on trip distance. Higher density communities with mixed land use patterns will have higher levels of walking because destinations are more likely to be located within walking distance of homes and businesses.

For an intuitive (sketch plan) approach, destinations throughout the study area that would attract bicyclists and pedestrians are shown on a base map. Routes are selected that serve higher concentrations of destination points, or that serve destinations that typically yield high numbers of bicyclists and pedestrians, such as universities, downtown areas, shopping centers, major employment centers (hospitals, business parks, major industries and corporations, etc.), schools, and parks. Route selection and prioritization can be done via graphical representation; the intent is to identify locations that serve multiple destinations and higher population densities (population densities can be obtained from census data). This methodology can be accomplished using a GIS system or it can be done by hand.

Public involvement is important to the success of the intuitive (sketch plan) method. It is particularly important to gain input from a wide variety of local citizens representing different geographic areas who represent all ages and abilities.

The other method of estimating latent bicycle and pedestrian travel demand is to adjust conventional motor vehicle travel demand theory so that it applies to bicycle and pedestrian travel. By using a gravity model to measure latent bicycle and pedestrian travel demand, the planner can achieve results that are more precise than the intuitive approach. The other advantage to this approach is that it compliments the type of analysis that is typically done for motor vehicle and transit travel simulation. This can be particularly important in cases where bicycle improvements are competing for similar funding mechanisms as other modes, since most transportation improvement programs make funding decisions based upon quantifiable results.

Bicycle and pedestrian travel demand modeling can be done on a system-wide basis, or at the corridor level. Further information on more precise bicycle and pedestrian travel demand methods are provided in FHWA Publication No. FHWA-RD-98-166, Guidebook on Methods to Estimate Non-Motorized Travel, 1999.

Pedestrian Safety

The Federal Highway Administration (FHWA), in cooperation with the National Highway Traffic Safety Administration (NHTSA), has developed a Pedestrian and Bicycle Crash Analysis Tool (PBCAT) through the University of North Carolina Highway Safety Research Center (HSRC).

In 1998, 5,220 pedestrians and 761 bicyclists were killed, accounting for 14 percent of all traffic fatalities. An additional 69,000 pedestrians and 53,000 bicyclists have been reported injured because of collisions with motor vehicles. PBCAT is a software product intended to assist state and local bicycle coordinators, planners, and engineers with this problem.

PBCAT accomplishes this goal through the development and analysis of a database containing details associated with crashes between motor vehicles and pedestrians or bicyclists. One detail is the crash type, which describes the pre-crash actions of the parties involved. With the database developed, the software can then be used to produce reports and select countermeasures to address the problems identified.

Traffic Calming

Traffic calming is a way to design streets using engineering principles to encourage people to drive more slowly. It creates physical and visual cues that induce drivers to travel at appropriate speeds. Traffic calming is self-enforcing. The design of the roadway results in the desired effect without reliance on enforcement or voluntary compliance. Traffic control devices such as signals and signs rely on compliance. While elements such as landscaping and lighting do not force a change in driver behavior, they do provide the visual cues that encourage people to drive more slowly.

The reason traffic calming is such a powerful and compelling tool is that it has proven to be so effective. Some goals of traffic calming are clearly measurable such as increasing safety through fewer and less severe crashes. Others, such as supporting community and livability, are less tangible but equally important.

Numerous studies throughout Europe, Australia, and North America have shown that traffic calming reduces traffic speeds, the number and severity of crashes, and noise levels. In the Netherlands, an evaluation of 44 redesigned roads found a 72 percent reduction in the frequency of crashes. Extensive studies in Germany, France and Britain show speed and/or crash reductions of 30 percent to 53 percent. In Vancouver, BC, an analysis of traffic calming in four neighborhoods quantified the substantial economic benefits arising from fewer crashes. These included reductions in police, fire, hospital, and insurance costs. Conversely, higher speeds have a negative effect with an increase in the average speed of motor vehicle traffic by 1 km/hour, which increases the number of injury crashes by approximately 3 percent and increases crash related costs by approximately 6 percent.

There are certain overall considerations that are applicable to both traffic management and traffic calming:

- In terms of safety, speed is more critical than volume and should be addressed first where there are monetary constraints.
- Neighborhood involvement is important to successful implementation of any plan.
- Traffic calming and management measures should fit into, and preferably enhance, the street environment.
- Traffic calming and management measures should make sense.
- Traffic calming designs should be predictable rather than random and easy to understand by drivers and other users.
- Devices that meet multiple goals are usually more acceptable. For example, a raised crosswalk is more understandable to motorists than a speed hump. The former has a clear goal whereas the latter may be perceived as a nuisance.
- Devices need to be well designed and be based on current available information on their applications and effects. Information on U.S. experiences with various traffic calming measures are found in ITE's "Traffic Calming: State of the Practice."
- Traffic calming areas or devices should be adequately signed, marked, and lit to be visible to motorists.
- Devices need to be spaced appropriately to have the desired effect on speed. If they are too far apart they will have a limited effect and if they are too close, they will be an unnecessary cost and annoyance. Devices should be spaced approximately 300-500 feet

apart. If they are spaced too far apart, motorists may speed up between them. This is predominantly the case where the devices are added onto the street (speed humps). Whole street designs are usually able to create an environment that supports slower speeds for the entire length.

- Devices should not be under–designed or they will not work. Keeping the slopes too gradual for a speed table or curves too gentle for a chicane will not solve the problem and will appear as a waste of money and may ruin chances for future projects.

- If a measure is likely to divert traffic, the area-wide street system should be considered so as not to shift the problem from one place to another.

Traffic calming measures include, but are not limited to the following ideas:

- Roadway narrowing (curb extensions, chokers, and crossing islands),

- Lateral and horizontal shifts (chicanes, and mini-circles),

- Raised devices (speed humps, speed tables, raised intersections, and raised pedestrian crossings),

- Complementary tools (gateways, landscaping, and specific paving treatments), and

- Whole street designs (serpentine designs, woonerf – living streets).

Improvements To Pedestrian Infrastructure

In designing pedestrian facilities, architects and engineers must balance a wide-ranging set of concerns to accommodate the three major categories of disabilities: 1) sensory, 2) mobility, and 3) cognitive. What works for one group in one situation may present a problem for another group. For instance, a sloping curb may accommodate persons in wheelchairs but may not be easily detected by a visually impaired person.

Several driveway designs may cause safety problems for pedestrians, including excessively wide and/or sloped driveways, driveways with wide turning radii, multiple adjacent driveways, driveways that are not well defined, and driveways where motorist attention is focused on finding a gap in congested traffic. Examples of driveway improvements include narrowing or closing driveways, tightening turning radii, converting driveways to right-in/out only movements, and providing median dividers on wide driveways. When driveways cross sidewalks, it is preferable to maintain the sidewalk level across the driveway. This is safere for all users and makes it clear to motorists that they must watch for pedestrians. It is important to minimize large signs and bushes at driveways to improve the visibility between motorists and pedestrians. The sidewalk material should be maintained across the driveway as well.

Good quality and placement of lighting can enhance an environment as well as increase comfort and safety. Pedestrians often assume that motorists can see them at night and are deceived by their own ability to see the oncoming headlights, not realizing that they cannot be seen well at night. Without sufficient overhead lighting, motorists may not be able to see pedestrians in time to stop. In commercial areas with nighttime pedestrian activity, streetlights and building lights can enhance the ambiance of the area and the visibility of pedestrians by motorists. It is best to place street lighting along both sides of arterial streets and to provide a consistent level of lighting along a roadway. Nighttime pedestrian crossing areas may be supplemented with brighter or additional lighting. In commercial areas or in downtown areas, specialty pedestrian level lighting may be placed over the sidewalks to improve pedestrian comfort, security, and safety. Mercury vapor or incandescent lighting is often preferred as pedestrian level lighting. Low-pressure sodium lights are energy efficient, however they have a high level of color distortion.

A variety of roadway improvements may be used to enhance the safety or mobility of children in school zones. The use of well-trained adult crossing guards has been found to be one of the most effective measures for assisting children to cross streets safely. Sidewalks or separated walkways and paths are essential for a safe trip from home to school on foot or by bike. Adult crossing guards require training and monitoring and should be equipped with a bright orange safety vest and a STOP paddle. Police enforcement in school zones may be needed in situations where drivers are speeding or not yielding to children in crosswalks.

Other helpful measures include parking prohibitions near intersections and crosswalks near schools, increased child supervision, and the use of signs and markings, such as the school advance warning sign and SPEED LIMIT 25 MPH WHEN FLASHING. Schools should develop “safe route to school” plans and work with local agencies to identify and correct problem areas. Marked crosswalks can help guide children to the best route to school. School administrators and parent-teacher organizations need to educate students and parents about school safety and access to and from the school. Education, enforcement, and well-designed roads must all be in place to encourage motorists to drive appropriately.

One of the biggest safety hazards around schools is parents or caretakers dropping off and picking up their children. There are two immediate solutions: 1) there needs to be a clearly marked area where parents are permitted to drop off and pick up their children; and 2) drop off/pick up regulations must be provided to parents on the first day of school. Drop off areas must be located away from where children on foot cross streets or access the school. If parents or caretakers can be trained to do it right from the start of the school year, they are likely to continue good behavior throughout the year.

For a longer-term solution, it is preferable to create an environment where children can walk or bicycle safely to school, provided they live within a suitable distance. One concept that has been successful in some communities is the concept of a “walking bus,” where an adult accompanies children to school, starting at one location and picking children up along the way. Soon a fairly sizeable group of children is walking in a regular formation, two by two, under the supervision of a responsible adult, who is mindful of street crossings. The presence of such groups affects driver behavior and they tend to be more watchful of children walking.

Parents can take turns accompanying the "walking school bus" at times that fit their schedules.

Enforcement

Education and enforcement are powerful tools for changing peoples behavior. Walkers need to be made aware of the risk of injury and death and to use strategies that improve their safety. Motorists need to understand how they contribute to pedestrian deaths and injuries and how they can reduce the risks to people traveling on foot or bicycle. For many, the role of education helps people understand the problem and what they can do about it. For the others, enforcement programs are needed to drive home the message. Some people are simply inattentive or indifferent to others and they need a reminder to obey the rules. A few people are criminally reckless and need to be arrested and dealt with according to the law.

When people talk about pedestrian violations, they immediately think of "jaywalking." This popular term usually describes a fit and fast person dashing across a street in the "wrong" place. Jaywalking is disorderly in appearance and can disrupt traffic, but it is not a big factor in pedestrian death and injury. The Seattle Police Department vigorously enforced the anti-jaywalking laws in that city for 50 years, issuing more than 500,000 citations. Seattle's pedestrian crash experience was little different from the rest of the USA where little or no attention was paid to this problem. Jaywalking enforcement may have a place in eliminating disorder in a city such as New York City that is working on jaywalking as a public order issue. This is not considered an effective safety strategy. Jaywalking enforcement is often episodic and inconsistent, but is usually seen as a waste of police manpower. Many police administrators start jaywalking enforcement programs only to later regret this decision.

There are reasonable enforcement targets out there and enforcement actions can be either a verbal warning or a citation. Targets include the following:

- Pedestrians who push through a crowd waiting for a "walk" light and cross illegally;
- Pedestrians who enter a stream of traffic and disrupt the flow;
- Pedestrians who "dash out" into the path of oncoming cars; and
- Pedestrians who are drunk (take to a place of safety).

The foundation of a good traffic safety program is a strong and continuous program to rid the streets of alcohol and drug impaired drivers. This will protect pedestrians along with everyone else. The inattentive or indifferent driver creates a real danger. Many are going too fast and fail to look out for pedestrians or bicyclists. Danger to children comes from drivers going too fast near schools or in neighborhoods where children live and play. Many of our streets are designed to a "high" standard that allows for cars to move fast. Sadly, one consequence of this is that children near the street are in danger of being hurt or killed. It is impossible to police speeding on all of the residential streets in our cities. There are too few police and too many speeding drivers. The real solution here is traffic calming. Police should be vigorously patrolling for speeding cars around any areas where adults and children are concentrated (i.e., schools, shopping centers, and entertainment zones).

Motorists understanding and compliance with crosswalk right-of-way laws is often poor. Officers should watch for these violations and should also be alert for crosswalk violations by drivers making turns. The pedestrian "sting" tactic is an effective way to combat these violations. A deadly threat to pedestrians is created when a driver overtakes and passes a car stopped at a crosswalk to let a pedestrian cross. Officers who observe these violations should issue a citation in every case.

The pedestrian "sting" tactic is a method for making an impact upon drivers who fail to respect pedestrian rights. Well done, it takes advantage of the news media's interests, reaching drivers through news broadcasts. The news media is not interested in a story about someone getting a ticket for failing to stop for a crossing pedestrian. However, use a large number of police decoy pedestrians and do it aggressively, and that's news (at least for a while!). Lieutenant John Miner and Officer Betsy Cable of the City of Redmond, Washington, Police Department developed the modern tactic. The tragic death of three city employees crossing a Redmond street in a crosswalk led the Mayor of Redmond to ask the RPD to "do something" about right-of-way violations in the city. Currently, a vigorous program is in operation in Oregon, organized by the Oregon Department of Transportation. A very effective program is in operation in Reno, Nevada and Florida and Wisconsin cities are exploring this tactic.

Pedestrian Operations and Maintenance

Inadequate maintenance can result in conditions that hamper pedestrian safety and limit use and access of pedestrian facilities. Typical problems include uneven pavement, standing water, overgrown shrubs and trees, sidewalk clutter, and snow-covered walkways that aren't cleared promptly in winter. Damaged street furniture, damaged or missing signs, improperly functioning signals, and worn pavement markings can create hazardous conditions for pedestrians.

Effective inspection and maintenance management policies that address specific problems should be developed and enforced. Some will be directed at the private sector and others written for government agencies. The following items are a few of the specific areas needing maintenance.

- Uneven pavement and pavement with missing pieces.
- Snow and ice buildup on walkways.
- Expansion and construction joints that have separated.
- Loose sand and debris on the surface of the walkway.
- Newspaper stands, portable signs, and other devices are creating barriers in a walkway.
- Tree roots that crack and heave walkways.
- Overgrown trees, shrubs, grass, or weeds are encroaching on walkways.
- Transition problems resulting from previous repairs.
- Worn or slippery steps or ramp surfaces.
- Worn paint on stop bars and crosswalks.

- Missing or damaged signs.
- Improperly functioning pedestrian signals.

Capital Improvement Investment Strategies and Incentive Programs

Prior to the 1990's, only a few million dollars a year of federal funds were being invested in bicycle or pedestrian facilities. While the energy crisis of the early 1970's had spawned new interest and some modest government initiatives to make improvements for bicycling, very little money from the government at any level was invested in bicycle and pedestrian facilities. Likewise, the outdoor recreation industry and business community in general provided very little funding for facilities, planning, programs, or organizational development. Throughout the late 1970's and 1980's the largest amounts of funds for bicycling and walking were invested by state and local parks agencies building multi-use trails, however even these levels of investment were very small compared to what is happening today.

Leading the way in government funding sources is federal funding through the Transportation Equity Act for the 21st Century or "TEA-21." This six-year funding bill (FY 1998 - FY 2003) authorizes $217 billion in federal gas-tax revenue and other federal funds for all modes of surface transportation, including highways, bus and rail transit, bicycling, and walking. More than half of these funds are made available through programs for which bicycling and walking activities are eligible expenditures. However, none of these funds are dedicated solely for bicycle or pedestrian facilities or programs. Outside of the federal transportation programs there are a wide range of other federal funds that can be used for bicycling and walking facilities. Some of the most common include funds through the federal land agencies such as the National Forest Service, National Park Service or Bureau of Land Management, however these funds are primarily for trails and must be on federal lands. Community Development Block Grants through HUD, the Department of Housing and Urban Development are a likely source of funds for community-based projects. Projects include commercial district streetscape improvements, sidewalk improvements, safe routes to school, or other neighborhood-based bicycling and walking facilities that improve local transportation options or help revitalize neighborhoods. The National Transportation Enhancements Clearinghouse has prepared a useful Technical Brief, "Financing and Funding for Trails," that sites over thirty federal and national funding sources that could be used to help fund bicycling and walking facilities and/or programs.

Every state raises revenue for highway and transportation infrastructure through a state motor-vehicle fuel tax. Some states also raise funds through vehicle licensing fees. In many states, the laws governing how these funds can be spent would make most bicycle and pedestrian projects and programs eligible for these funds. However, in other states use of the funds may be limited to providing paved highway shoulders on state owned and operated roads. The following are some examples of dedicated funding for bicycle and pedestrian projects from state transportation revenues.

By constitutional amendment, Oregon dedicates 1 percent of state gas-tax revenue to providing improvements for bicycling and walking on state-managed highways. Michigan also has a 1 percent law.

Illinois has a long-standing, annual dedication of $1.50 out of the car title transfer tax, for trail and bicycle pedestrian improvements in local communities; raising up to $5 million annually.

California dedicates $1 million from the State Highway Account (gas tax-based), for bicycle transportation improvements, and the amount is scheduled to grow to $2 million in 2002, to $3 million in 2003, and to $5 million in 2004. Maximum grants are $250,000.

The California state legislature also created the Transportation Development Act, which dedicates .25% from the statewide 7.75% sales tax to public transit support. The funds are returned to the county of origin where the regional transportation planning agency (often the MPO) may set-aside 2% of the funds for bicycle and pedestrian projects. In San Diego County, where this set-aside has been established, funding levels amount to about $1.7 million per year.

New Jersey has created a bicycle and pedestrian facility set-aside in its local-aid program by Gubernatorial directive. Municipalities and counties can apply for these funds for local projects. The money comes from the NJ Transportation Trust Fund (mostly state gas taxes and highway toll revenue). Because actual spending of the funds has lagged, and local requests exceed actual awards for projects by several times, advocates are currently pushing for a provision in the Trust Fund reauthorization bill that would require the NJ Department of Transportation to implement 200 miles of bikeways per year during the 4-year life of the new Trust Fund.

California passed a new state law in 1999 that allocated 1/3 of the federal Hazard Elimination monies (a portion of the 10 percent Safety Set-Aside of Surface Transportation Program funds) to projects that encourage kids to walk and bicycle to school. This amounts to about $20 million annually for the next two years. While this example does not primarily involve use of state revenue, it is a notable state action to further dedicate federal funds.

Likewise, New York State DOT is in the process of creating a grant program for traffic calming projects on Long Island. Towns and villages will apply for the money with specific traffic calming project proposals. The first year of the program will use $3 million of the same federal Hazard Elimination funds.

In Indiana, drivers are paying extra for special license plates that benefit greenways, open space, parks, and trails. In 1995 about $1.9 million was netted from the sale of 75,740 plates. The plates cost an additional $35, of which $25 goes to the Indiana Heritage Trust. Maine and Florida use similar license plate fee add-ons for conservation, parks, and bicycle and pedestrian program funding.

A growing number of states are providing funds from non-transportation related revenue streams. However, these funds are not always eligible for the full range of bicycle and pedestrian activities. Some examples include the following:

- By referendum, Colorado dedicates a portion of its lottery proceeds to trail building.
- Maryland uses a real estate transfer tax (tax on the sale of residential and commercial property) to raise money for open space acquisition and trail building.
- The Pennsylvania and Florida state legislatures were among the first to create state funding programs for trail building and open space preservation, and make much of the funding available for local community-sponsored projects, in addition to projects of statewide interest. Many other states have and are following suit.
- The Massachusetts Department of Environmental Management (DEM) runs a Greenways and Trails Small Grants Program to award small amounts of funding to local communities with innovative greenway and trail protection projects.

Examples of local communities taking action on their own to create revenue streams for improving conditions for bicycling and walking are not hard to come by. Three common approaches include 1) special bond issues, 2) dedications of a portion of local sales taxes or a voter-approved sales tax increase, and 3) use of the annual capital improvement budgets of Public Works and/or Parks agencies. The following are some examples:

- San Diego County residents voted to impose a 1/2-cent sales tax for transportation purposes. Out of those funds ($171 million in year 2000), $1 million is set aside for bicycle projects. The tax is administered by the San Diego Association of Governments and is scheduled to expire in 2008.
- The City of Albuquerque, New Mexico, and Bernalillo County, both have a 5% set-aside of street bond funds that go to trails and bikeways. For the City, this has amounted to approximately $1.2 million every two years for these facilities. The City voters last year passed a 1/4 cent gross receipts tax for transportation which includes approximately $1 million per year for the next ten years for trail development. In addition, many of the on-street facilities are being developed as a part of other road projects and are incorporating the bike facilities in the roadway budget for new roads, or when a resurfacing project is planned.
- Pinellas County, Florida built much of the Pinellas Trail system with a portion of a one cent sales tax increase voted for by county residents.
- Seattle, Washington, and King County voters approved a $100 million bond issue to protect open space in the urban area; $33 million was set-aside for trail development. The Seattle Department of Public Works used about $6 million per annum for the City's bike program.

- Denver, Colorado also invested $5 million in its emerging trail network with a bond issue, which also funded the city's bike planner for a number of years.

- Eagle County, Colorado (which includes Vail) voters passed a transportation tax that earmarks 10% for trails, about $300,000 a year.

- In Colorado Springs, Colorado, 20 percent of the new open space sales tax is designated for trail acquisition and development; about $5-6 million per year.

"Piggybacking" pedestrian improvements on capital projects is one of the best ways to make major improvements in a community. Sidewalks, pedestrian ramps, landscaping, lighting, and other amenities can be included in road projects, utility projects, and private construction in public rights-of-way (i.e. cable television, high-speed fiber optics etc.). To accomplish this, several things can be done such as:

Contact all state and regional agencies, local public and private utilities that do work in public rights-of-way. Secure their five-year project lists as well as their long-range plans. Then, work with them to make sure that the streets are restored in the way that works for your city;

- Look internally at all capital projects. Make sure that every opportunity to make improvements is taken advantage of at the time of construction; and

- Consider combining small projects with larger capital projects as a way of saving money. Generally, bid prices drop as quantities increase.

City Experiences

This section provides a quick insight into the different programs being implemented in American cities. These comments were extracted and edited from each organization's website.

City of Austin, Texas

The City of Austin has created the Bicycle and Pedestrian Program to integrate bicycles and walking into the transportation system of the city. The program works will all City departments, the metropolitan planning organization, the department of transportation, and other governmental agencies to create more bicycle lanes, wide curb lanes, trails, sidewalks, and crosswalks. Their purpose in creating a Pedestrian Plan is to encourage walking as a viable mode of transportation, improve pedestrian safety, and enable people to walk to and from transit stops.

- The City of Austin has integrated a program with four elements.

- Engineering of safe sidewalks and comfortable pedestrian environments.

- Enforcement of traffic laws for all roadway users and crime prevention to increase personal safety for people who choose to walk. This includes enforcement of jaywalking laws.

- Encouragement for people to walk instead of, or in addition to, driving.

- Education of all roadway users on safe and proper behaviors in traffic. Educate school-age children in safe pedestrian behavior.

City of Portland, Oregon

The City of Portland implemented a Pedestrian Transportation Program in 1992 to increase the number of people who choose walking as a mode of transportation and to make pedestrian travel an equal partner in Portland's intermodal transportation system. While Portland has many great places to walk, other parts of the city have inadequate or non-existent walkways that restrict the mobility of residents who don't drive. In addition, the city needs to reduce congestion, improve air quality, and meet the state's requirements to reduce vehicle miles traveled by increasing the percentage of trips made on foot. The Pedestrian Transportation Program plans and builds a safe, accessible, and convenient network of walkways throughout the city, promotes walking as a viable transportation mode, and educates people about pedestrian safety. The program works with citizen groups, business associations, and other public agencies to improve and promote pedestrian travel.

- **Building Pedestrian Improvements**. The program requests funding for and manages projects that add walkways, curb ramps, crossings, and other improvements to the pedestrian system. The goal of these projects is to connect destinations such as schools, transit stops, community services, and neighborhood business districts. Projects also focus on developing the city's pedestrian districts into safe and attractive settings where residents can walk to local businesses or for pleasure.

- **Planning and Policy Development**. The Pedestrian Transportation Program staff works with other programs and bureaus to ensure that city codes and policies promote pedestrian travel, improve pedestrian safety and eliminate barriers to walking. The program helps identify and prioritize places that need walkways, curb ramps, and links to transit, identifies funding sources, and recommends strategies to build improvements.

- **Education and Outreach Programs**. Staff members visit neighborhood groups and participate in community events to promote the benefits of walking and educate people about pedestrian safety. The program sponsors workshops and seminars to share information with engineers, planners, and citizens on ways to plan and design pedestrian-friendly, accessible communities. The program also serves as a resource to residents who need assistance or have questions about pedestrian issues and services within the city.

- **Involve Residents in Pedestrian Issues**. The program provides several ways for city residents to help shape Portland's pedestrian environment. Program staff members meet with residents at neighborhood meetings and community events to solicit citizen suggestions for pedestrian improvements. These suggestions are incorporated into the pedestrian plan and funding requests.

New York City, New York

The Pedestrian Projects group of the department of transportation develops initiatives to reconfigure streets with widened sidewalks, enhanced streetscapes and a safer interface with other modes, including better access to public transit. The Safety Engineering office collects crash data and identifies high-crash locations. Improvement measures are developed to improve safety at the critical locations. The Traffic Calming unit develops policies and techniques to reduce negative impacts created by vehicular travel. Recently, New York state law was passed to allow the City to reduce the citywide 30 miles an hour speed limit to as low as 15 on neighborhood streets where traffic calming measures are in place. Traffic calming includes medians, neckdowns, speed humps, and bicycle lanes. As part of a Mayoral initiative to increase safety around elementary schools, the department's School Safety unit has gathered data on hundreds of schools around the city and will be making traffic calming and safety improvements to each location. The Sidewalk Management unit issues a notice of violation to property owners whose sidewalks do not meet City standards. They also fulfill the Federal mandate to make street corners compliant with the Americans With Disabilities Act (ADA) by being accessible to the disabled with appropriately designed ramps.

Pedestrian improvements are incorporated in all roadway construction projects. Pedestrian walkways on all bridges are maintained. Construction projects are planned to ensure that pedestrian access is maintained during constructions. The department ensures that markings and curbline geometry functions effectively and safely for motor vehicles and accommodates the needs of other road users, making sure that crosswalk markings are always in a state of good repair in the appropriate type. The department issues revocable consents to individuals and groups wishing to put street furniture, such as planters or benches, on the sidewalk. While the City welcomes community efforts to spruce up and landscape neighborhoods, care must be taken to ensure continued maintenance and avoid eyesores. Traffic islands are landscaped and maintained.

Tallahassee-Leon County, Florida

Tallahassee-Leon County, Florida provides services to improve the bicycle and pedestrian facilities in their community. To address the engineering of pedestrian services, the county provides training courses on bicycle and pedestrian facility design and current nationally accepted bicycle and pedestrian facility design standards for use by the development community and local governments. The county provides traffic education, safety presentations, brochures, and videos for all age groups, technical assistance to the Leon County elementary school Traffic Education Program, and traffic education training programs for teachers and community educators. Training programs for area law enforcement personnel on bicycle and pedestrian issues and an analysis of area accidents and counter-measure programs for the programs for the prevention of further accidents help to enforce pedestrian safety. To encourage pedestrian use, the county provides assistance with bicycle and pedestrian related special events, public service announcements on pedestrian issues for radio and TV and the promotion of "Share the Road" concept.

City of Atlanta, Georgia

In 1999, the Centers for Disease Control and Prevention (CDC) identified the Atlanta metropolitan area as the nation's second most dangerous large metropolitan area for pedestrians. Between 1994 and 1998, Atlanta's pedestrian fatality rate increased 13 percent, while the national pedestrian fatality rate decreased by 9.6 percent. A total of 309 pedestrian fatalities occurred in the Atlanta area between 1994 and 1998. The city's pedestrian fatality rate (per 100,000) increased from 2.53 in 1994 to 2.85 in 1998. During the same period, the national pedestrian fatality rate decreased from 2.19 to 1.98.

Georgia's state health agency identified 11 one-mile corridors and ten intersections that are most dangerous for pedestrians. Researchers attribute Atlanta's unfriendly pedestrian environment on a number of factors, including lack of sidewalks and reckless behavior by both motorists and pedestrians. To address these pedestrian safety concerns, NHTSA and the Federal Highway Administration (FHWA) formed a OneDOT team to develop the Atlanta Area Community Building Forum on Pedestrian Safety.

The goal of the Atlanta Area Community Building Forum on Pedestrian Safety, initiated in 1999, is to save lives and reduce the number of pedestrian injuries by:

- Encouraging partnerships between Federal, state, county and city governments, and incorporating other partners;
- Heightening public awareness and education about pedestrian safety issues;
- Addressing pedestrian accommodations in the planning and engineering processes of land development; and
- Enforcing pedestrian and driver laws, including training all city judges that hear traffic cases.

City of El Cerrito, California

The El Cerrito Police Department, in an effort to educate the driving public and increase pedestrian safety has stepped up enforcement of pedestrian right-of-way violations. In April, a decoy officer was deployed as a pedestrian using a crosswalk between 6:00 PM and 11:00 PM, during which time patrol officers issued approximately 50 citations for failure to yield the right-of-way to a pedestrian.

City of San Diego, California

The City of San Diego is installing audible pedestrian traffic signals at intersections throughout the City to assist pedestrians to cross streets safely. The audible signals are of particular value to seniors and persons who are visually impaired.

City of Alexandria, Virginia

To enhance pedestrian safety, the City of Alexandria is installing brick paved crosswalks in several areas Citywide, and adding new pedestrian signals that display a countdown clock

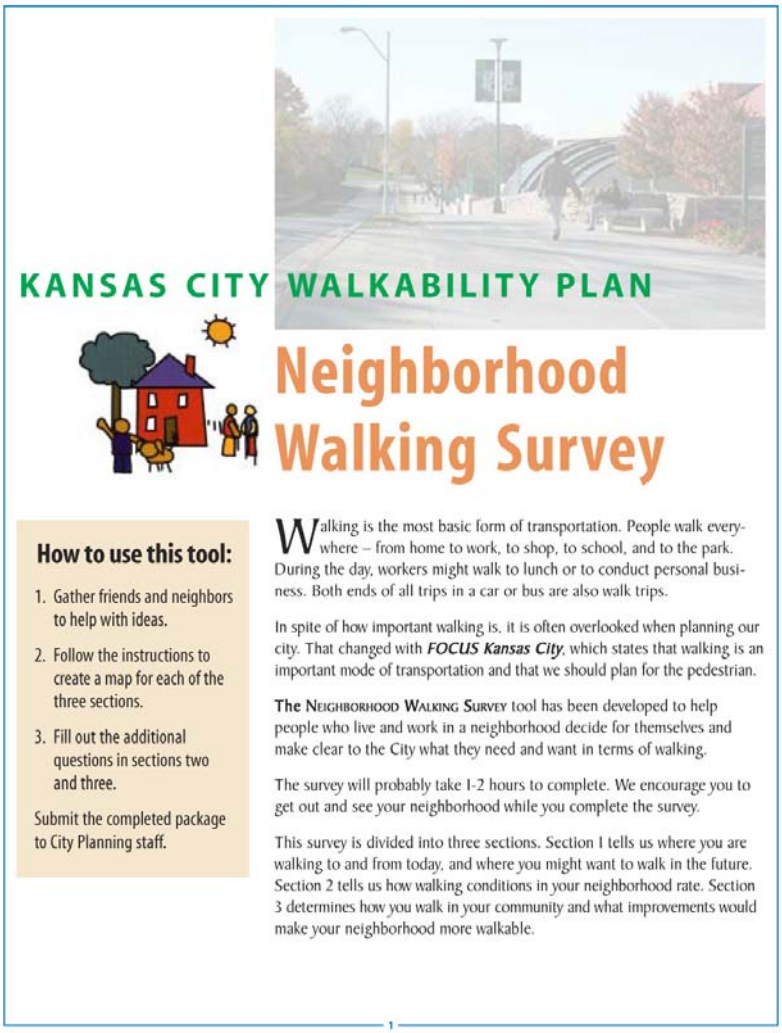
showing remaining time for pedestrians to cross the roadway in high-volume pedestrian areas. Other improvements being undertaken are new signs, sidewalks and pedestrian safety enhancements.

Resources

The following is a brief list of useful websites and other resources:

- Pedestrian and Bicycle Information Center, produced and maintained by the University of North Carolina Highway Safety Research Center: www.walkinginfo.org, www.pedbikeinfo.org
- Alternative Treatments for At-Grade Pedestrian Crossings, An Informational Report by Nazir Lalani & the ITE Pedestrian and Bicycle Task Force, 2001.
- Association of Pedestrian and Bicycle Professionals: www.apbp.org
- Dan Burden's Walkable Communities, Inc website: www.walkable.org
- The National Transportation Enhancements Clearinghouse website: www.enhancements.org
- Perils for Pedestrians television series website: www.pedestrians.org
- City of Austin, Texas website: www.ci.austin.tx.us/bicycle/
- City of Portland, Oregon website: www.trans.ci.portland.or.us/engineering_and_development/pedestrian_program/
- New York City, New York website: www.ci.nyc.ny.us/html/dot/html/get_around/ped/pedest.html
- Tallahassee-Leon County, Florida website: www.myflorida.com/citytlh/planning/trans/bikeped/bikesvcs.html
- City of Atlanta, Georgia website: www.nhtsa.dot.gov/people/outreach/safedige/fall1999/fall-1399.html
- City of El Cerrito, California website: www.el-cerrito.org/police/pedestriansafety.html
- City of San Diego, California website: www.sannet.gov/disability-services/audible.shtml
- City of Alexandria, Virginia website: ci.alexandria.va.us/city/annual_reports/report2000/ar2000_traffic_and_transportation.html

Appendix B – Neighborhood Walking Survey



KANSAS CITY WALKABILITY PLAN

Neighborhood Walking Survey

How to use this tool:

1. Gather friends and neighbors to help with ideas.
2. Follow the instructions to create a map for each of the three sections.
3. Fill out the additional questions in sections two and three.

Submit the completed package to City Planning staff.

Walking is the most basic form of transportation. People walk everywhere – from home to work, to shop, to school, and to the park. During the day, workers might walk to lunch or to conduct personal business. Both ends of all trips in a car or bus are also walk trips.

In spite of how important walking is, it is often overlooked when planning our city. That changed with ***FOCUS Kansas City***, which states that walking is an important mode of transportation and that we should plan for the pedestrian.

The Neighborhood Walking Survey tool has been developed to help people who live and work in a neighborhood decide for themselves and make clear to the City what they need and want in terms of walking.

The survey will probably take 1-2 hours to complete. We encourage you to get out and see your neighborhood while you complete the survey.

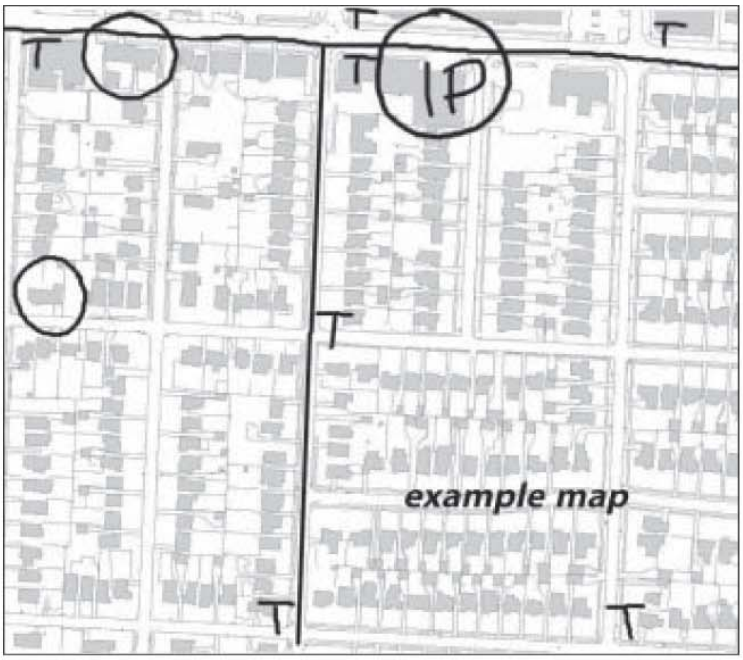
This survey is divided into three sections. Section 1 tells us where you are walking to and from today, and where you might want to walk in the future. Section 2 tells us how walking conditions in your neighborhood rate. Section 3 determines how you walk in your community and what improvements would make your neighborhood more walkable.

1

1

Where do you want to go?

What are the places in your neighborhood that you get to by walking? Accompanying this assessment are 3 maps and 4 colored pens. On the map marked "Where do you walk/want to get to by walking?", please do the following:



Circle Places You Go

Circle **all** major places you go in the following colors:
RED – shopping locations
BLUE – workplaces
GREEN – schools, parks, places of worship

Draw Bus Routes

Using a black pen, draw the bus routes within your neighborhood and place a "T" where there are bus or other transit stops.

Add Important Places You Go

Please place an "IP" for "important places" you go most often, or have a need to go. Choose the 1 or 2 most important places.

2

2a

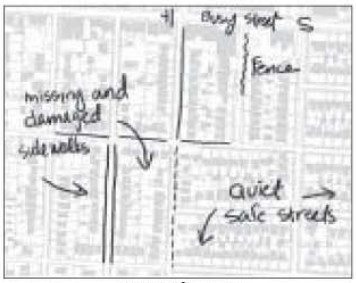
How do walking conditions in your area rate?

The next step of the neighborhood walkability survey is to identify the strengths and weaknesses of your neighborhood for walking. On the map called "Rating Walking Conditions" there are five categories of information.

COMPLETENESS: It is important to know how complete your sidewalk system is. Are there whole parts missing? Are there major parts that are broken and where you can't walk?

Draw Sidewalks in Blue

1. Use the blue pen to draw a dashed line to identify all locations of major problem areas, such as cracked sidewalks.
2. Draw a solid line for any sidewalks not shown on the map.



example map

STREET CROSSINGS: The ability to safely cross streets is an important part of the walking system. It might be relatively easy to cross a local two lane street, but it is harder to cross a street with 3-4 lanes and lots of traffic. How safe are your street crossings?

Draw Street Crossings in Red

1. Circle the most important places to cross in red.
2. Draw a red "S" for each traffic signal.
3. Draw in crosswalks in red.

DIRECTNESS: The distance the walker must go affects whether they choose to walk. If they have to go a long way to get around barriers, they might decide to drive instead. How direct are walking paths in your neighborhood?

Draw Barriers in Black

1. Draw a jagged black line to show barriers to walking.
2. Write a short explanation on the map. (These barriers might be physical – such as a freeway, deep ditch, or fence – or they might be barriers like a wide, busy street which is unsafe to cross.)

PHYSICAL INTEREST AND AMENITY: Walkers like places that are pleasant, visually interesting and well maintained. Do you enjoy walking in your neighborhood?

Draw the Best and Worst Places in Green

1. Highlight the best places to walk with a solid green circle.
2. Highlight the worst places to walk with a dashed green circle.
3. Write a short explanation for your choices. Explain why each of these places are either good or bad.

SECURITY: If people feel unsafe walking in an area, they will typically choose not to walk there. In general, how safe do you feel walking in your neighborhood?

Draw Security Issues in Red

1. Circle and label any areas where you think you are unsafe walking.
2. Write the 2 or 3 reasons you feel an area is unsafe on the edge of the map.

3

2b

Take a walk and decide for yourself.

Walking needs to be safe, easy and pleasant. Grab this checklist, take a walk, and use it to decide if your neighborhood is a friendly place to walk. Take heart if you find problems; there are ways you can make things better.

GETTING STARTED: Take a walk through your neighborhood and think about the five categories in section 2a. Read over this checklist before you go and as you walk, note the locations of things you would like to change. At the end of your walk, give an overall rating to each question and then add up the numbers to see how you rated your walk.

Rating Scale

1	2	3	4	5	6
EXCELLENT	VERY GOOD	GOOD	SOME PROBLEMS	MANY PROBLEMS	AWFUL

LOCATION OF YOUR WALK:

From _____

To _____

1. Did you have room to walk?

There were sidewalks, paths, or shoulders	Yes ○	No ○
Sidewalk started and stopped	Yes ○	No ○
Sidewalks were broken or cracked	Yes ○	No ○
Sidewalks were blocked with poles, signs, shrubbery, dumpsters, etc.	Yes ○	No ○
Too much traffic	Yes ○	No ○

Something else?_____

Locations of Problems: _____

_____

_____

_____

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

2. Was it easy to cross streets?

There were crosswalks and walk/don't walk signals	Yes ○	No ○
Road was too wide	Yes ○	No ○
Timing on walk signal was long enough	Yes ○	No ○
Parked cars blocked our view of traffic	Yes ○	No ○
Trees or plants blocked our view of traffic	Yes ○	No ○
There were curb ramps in good repair	Yes ○	No ○

Something else?_____

Locations of Problems: _____

_____

_____

_____

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

3. Did drivers behave well?

Looked before backing out	Yes ○	No ○
Yielded to people crossing the street	Yes ○	No ○
Turned into crosswalk when people were crossing	Yes ○	No ○
Drove Slowly	Yes ○	No ○
Sped up to make it through traffic lights or drove through red lights	Yes ○	No ○

Something else?_____

Locations of Problems: _____

_____

_____

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

4. Was it easy to follow safety rules? Could you...

Cross at crosswalks where you could see and be seen by drivers?	Yes ○	No ○
Easily see both directions before crossing streets?	Yes ○	No ○
Walk on sidewalks or shoulders facing traffic where there were no sidewalks?	Yes ○	No ○
Cross with the light?	Yes ○	No ○

Something else?_____

_____

Locations of Problems: _____

_____

_____

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

5. Was your walk pleasant?

Some unpleasant things	Yes ○	No ○
Needed more grass, flowers, trees, or interesting sights	Yes ○	No ○
Scary dogs	Yes ○	No ○
There was good lighting	Yes ○	No ○
Clean, little litter	Yes ○	No ○

Something else?_____

Locations of Problems: _____

_____

_____

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

4

3

Where do you walk/want to walk?

Look back at the maps you prepared in Section 1 and Section 2. Think about how these maps describe both where you would like to go in your neighborhood and how you feel when walking to and from these places.

Create a Summary Map

1. Draw the most important destinations and walking routes on your summary map in **BLUE**.
2. Pick the most important positive and negative things about where you walk, and add them to your summary map in **GREEN**.

Walking Wishes

Now that you have reviewed and summarized your work, think about the five most important changes you would like to see in your neighborhood. Write down five specific "walking wishes" in the space provided below.

1. _____
2. _____
3. _____
4. _____
5. _____

Name of Neighborhood: _____

Boundaries: _____

Contact Person: _____

Mailing Address: _____

Daytime Phone: _____

E-mail _____

Thank you for letting the City know what you think about improving walkability in Kansas City! You can use survey results to help justify requests for resources needed for important improvements in your neighborhood.

Return Survey & Maps to:

City Planning and Development Department
15th Floor, City Hall
414 E. 12th Street
Kansas City, MO 64106-2705
(816) 513-2855
planning@kcmo.org

KANSAS CITY WALKABILITY PLAN
Neighborhood Walking Survey

Appendix C – Pedestrian Level of Service Analysis Methodology and Procedures for Development Proposals

Purpose

The *FOCUS Kansas City Strategic and Comprehensive Plan* promotes choice in transportation, including the automobile, public transit, bicycles, and walking. It suggests that all modes of transportation should be considered when planning for any mode and any land use. The purpose of the Pedestrian LOS Impact Analysis Manual is to ensure that the impact of development on walkability be considered in conjunction with other traffic impacts during development reviews.

Policy

- The City of Kansas City requires that all major land development projects, as defined by the City Planning and Development Department, conduct a transportation impact analysis to disclose the project's potential impacts and what mitigations are necessary to offset those impacts.
    - As part of this transportation impact analysis, the study must include a pedestrian level-of-service analysis to assure future pedestrian mobility opportunities for the proposed development.
    - Five pedestrian level-of-service (LOS) measurements are defined as part of the City's Walkability Plan:
        - **Directness:** Does the pedestrian network provide the shortest possible route?
        - **Continuity:** Is the network free from gaps and barriers?
        - **Street Crossings:** Can the pedestrian safely cross streets?

- **Visual Interest and Amenity:** Is the environment attractive and comfortable, offering protection from harsh conditions?
- **Security**: Is the environment secure, well lighted with good line of sight to see the pedestrian, and far away enough from vehicular traffic to provide a feeling of safety?

- To achieve development approval:
  - Development projects shall not degrade any current pedestrian level of service measurements internal to or external to the site
  - At the time of issuance of building permit the applicant must meet the five minimum level-of-service requirements, based on the type of pedestrian area in which it is located, for all internal locations to and including property edge and boundary streets and street crossings.

- If applicable, developers may meet pedestrian LOS standards by providing off-site improvements within ¼ mile of any edge of the development project. However, it should be understood that such improvements are not exactions imposed by the City but rather are voluntary efforts to accelerate the achievement of adequate public facilities for the project site. The costs of each off-site improvement shall not be credited by the City against any financial obligations in which the developer may otherwise be responsible.

- The City expects all developments to adhere to this policy. The Director of City Development, however, may approve minor deviations from the policy, based on the following criteria:
  - City has approved Capital Improvements Projects that will affect the project's proposed pedestrian LOS, which are scheduled to begin within 5 years of the initiation of the development project.
  - City believes that it is physically impossible to make the required improvements to meet required LOS standards.
  - The applicant proposes mitigation that will improve the pedestrian system, but not to level of service requirements based on the type of pedestrian area in which it is located. These improvements would need to be agreed to by the City Planning and Development Department.

Overview of Process

This is a five-step process. *Applicant can complete Steps 1 – 3 in an initial scoping meeting with City Planning and Development and Public Works staff.*

- **Step 1:** Determine the type of pedestrian area in which the development is located.

- **Step 2:** Determine the applicable LOS minimum standards for the project based on its location relative to the pedestrian area type.

- **Step 3:** Identify on a vicinity map all "destination areas" for pedestrians located in Impact Study Area (internal to and generally within ¼ mile of outside edges of the project site).

- **Step 4:** Prepare a Development Proposal Pedestrian Level of Service Worksheet based on maps and field surveys, in order to show:
    - Required minimum pedestrian LOS standards for the project, and
    - Current and proposed pedestrian level of service to pedestrian destinations located in Impact Study Area (internal to and generally within ¼ mile of the edge of the project).

- **Step 5:** Prepare and submit a Pedestrian Impact LOS Analysis for the development project to City Planning and Development and Public Works Departments that would include the Development Proposal Pedestrian LOS Worksheet with text and any illustrative maps, graphics and photographs necessary to support the findings.

Step-By-Step Processes

Step 1: Determine the type of Pedestrian Area in which the development is located

Using the map and data provided by the City Planning and Development Department, determine which of the pedestrian area types listed below are in the Impact Study Area (either internal to the development or generally within ¼ mile of any edge of the development). The identification of location area type forms the basis for determining minimum LOS standards. All of the areas listed below with the exception of "Other Areas Within the City" are designated as *Pedestrian Areas*, which are "potential high pedestrian use areas." The definitions of these pedestrian area types are as follows:

- **Pedestrian-Oriented Zones, Great Streets and Boulevards:** The *FOCUS Kansas City Plan*, which is the city's comprehensive and strategic plan, identified 11 Pedestrian-Oriented Zones and a significant number of Great Streets and Boulevards within the city. These areas reflect locations within the city where the community desires the highest pedestrian environment.

- **Mixed Use and Multimodal Transportation Centers, Transit Impact Zones:** The *FOCUS Plan* identified a number of existing and potential mixed-use and transit regional and community centers and zones, which are different from the Pedestrian-Oriented Zones.
    - **Mixed-Use Centers:** These centers are high-density activity nodes with a mixture of residential and non-residential uses that are designed to accommodate the pedestrian, transit, bicycle and automobile.
    - **Multimodal Transportation Centers:** These are locations which support the coming together and linking of multiple transportation modes, such as air travel, automobile, pedestrian, rail, commuter rail, light rail and/or major bus routes.

  - **Transit Impact Zones:** These are areas within 600 feet (primary impact zone) or ¼ mile (secondary impact zone) surrounding transit stations, particularly high intensity transit such as light rail or Bus Rapid Transit.

- **Neighborhood Activity Centers and Corridors:** These include the numerous smaller commercial and service activity centers and corridors located throughout the city. The applicant and the City will identify these areas at the initial scoping meeting, based on local knowledge and on Commercial designation in City's Real Estate File.

  Many of these centers and corridors serve local neighborhoods and often include transit service. By providing pedestrian connections between retail uses and adjacent residential areas, a developer or the City could significantly improve pedestrian activity along this corridor. Areas with higher density residential within one-quarter mile from activity centers and corridors have a higher probability of capturing walk trips if a higher pedestrian level of service is provided, particularly in the areas of directness, continuity, and street crossings.

- **Schools/Parks/Community Centers/Libraries/Hospital/Health Care Facilities:** Pedestrian connections to these types of facilities require higher levels of service in the categories of continuity, street crossings, and security, whereas visual interest and amenity is less important for this pedestrian trip type. These would be facilities located internal to or within ¼ mile of the project boundaries, with the exception of junior high school and high school destinations, which have a 1-mile and a 1½-mile walking distance, respectively, and should be included in the Impact Study Area.

- **Transit Corridors:** All ends of the transit trip are walk trips. Therefore, areas that are within one-quarter mile from transit stops, which is the typical rule of thumb for walking to/from transit, should provide for a high level of service in the categories of directness, continuity, and street crossings.

- **Other Areas Within the City:** In order to promote pedestrian mobility throughout the city, all areas within the city should provide for adequate levels of service. In the case of areas outside the zones, corridors, districts, and special destinations such as schools and parks, these minimum standards should reflect reasonable directness, a continuous set of sidewalks, safe street crossings, a relatively pleasing environment, and a secure route.

Step 2: Determine the applicable LOS minimum standards for the project based on its location relative to the pedestrian area type.

Using the following table (Pedestrian Level of Service Requirements by Pedestrian Area Type), determine the applicable LOS minimum standards for the project based on its location relative to the pedestrian area type. Enter the project location classification type as defined in Step 1 and the minimum LOS standards into the "City of Kansas City Development Proposal Pedestrian Level of Service Worksheet" (see page 7). **If the site is located in more than one area type, the type with the higher LOS standards shall be used**. If the proposed development is not located within a pedestrian zone, a mixed-use or transportation center, a neighborhood activity center or corridor, or within close proximity to schools, parks, and

transit the proposed development must still comply with the minimum pedestrian LOS standards for "Other Areas Within City."

Pedestrian Level of Service Requirements by Pedestrian Area Type

	Directness	Continuity	Street Crossings	Visual Interest & Amenity	Security
Pedestrian Zones, Great Pedestrian Streets	A	A	B	B	B
Mixed Use & Multimodal Transportation Centers, Transit Impact Zones	A	B	B	B	B
Neighborhood Activity Centers & Corridors	B	B	C	B	B
Schools/Parks/Community Centers/Libraries	C	B	B	C	B
Walking To/From Transit Stops	B	C	C	C	B
Other Areas Within City	C	C	C	C	C

Step 3: Identify on a vicinity map all "destination areas" for pedestrians located in Impact Study Area (internal to and generally within ¼ mile of outside edges of the project site)

Identify all "destination areas" located in the Impact Study Area on a vicinity map. The Impact Study Area is defined as the project itself and a ¼ mile (1,320') radius from the outside edge of the project. All measurements should be made within this area, with the exception of junior high school and high school destinations, which have a 1-mile and a 1½-mile walking distance, respectively, and should be included in the Impact Study Area.

- In general, one or two trip origin locations in a smaller development and up to five or six representative trip origin locations in a larger development will be required. The map would identify the logical pedestrian route of the trip, where the pedestrian trip intersects with the public edge, and where they would walk to reach the outside destinations. Use the initial scoping meeting between the city and the applicant to reach agreement concerning which destination areas should be included in the worksheet. Identify each of the following six types of destinations located in the Impact Study Area:

- **Recreational Sites**: These include public parks, sports facilities, public tennis courts, and other sites where the public would be expected to go to participate in physical recreation and sports activities.

- **Residential Areas**: These include any concentration of at least ten dwelling units that may reasonably be regarded as a contiguous neighborhood or which are part of a single subdivision.

- **Institutional Sites**: These include all churches, public schools, libraries, community centers and public buildings, which regularly receive the public for public business.

- **Office Buildings**: These include all commercial office buildings, office parks, and office type employment campuses with a building area of at least 25,000 square feet.

- **Commercial Sites**: These include any retail space of at least 15,000 square feet, including shopping centers, strip shopping areas, and shopping malls.

- **Industrial Sites**: These include all other non-residential sites of at least 50,000 square feet of building space utilized for manufacturing, assembly, shipping, or warehousing activities.

Step 4: Prepare a Development Proposal Pedestrian Level of Service Worksheet based on maps and field surveys

The "City of Kansas City Development Proposal Pedestrian Level of Service Worksheet" will form the basis for City review of the development proposal regarding compliance with Pedestrian Level of Service Standards. Detailed methodologies for conducting individual level-of-service measurements for Directness, Continuity, Street Crossings, Visual Interest and Amenity, and Security are contained in Attachment 1.

The applicant shall use the Worksheet to summarize the current pedestrian level of service, based on actual documented map, aerial or field measurement, and the proposed pedestrian LOS, based on proposed development and any changes that the developer is making either on site or off site. In general for project approval, proposed after-development measurements should never degrade current pedestrian LOS measurements (see Policy section). The general categories of measurements for the worksheet are as follows:

- **Current On-Site to Internal Destination**: This is a measurement of current conditions on-site. Specifically, it shows the current LOS between multiple internal locations and any internal destinations. For vacant development sites, there would be no internal destinations.

- **Proposed On-Site to Internal Destination**: This measurement documents any changes to current conditions that the developer proposes to make by adding internal destinations and/or reconfiguring the site to make existing or proposed destinations more or less accessible to pedestrians.

- **Current On-Site to Edge**: This is the current measured LOS condition between multiple internal locations and the nearest publicly accessible edge.

- **Proposed On-Site to Edge**: This measurement is based on the effects of the proposed development and measures the LOS condition that would result between multiple internal locations and the nearest publicly accessible edge from the proposed development.

- **Current Edge to Destination**: This measurement defines the current pedestrian level-of-service measurements for all connections between the project's edges to the key pedestrian destinations described in Step 3 that were agreed upon in the initial scoping meeting. Applicant should measure all street crossings needed to reach key destinations by "best" (as determined by applicant) walking route. Applicant should show, on a supplementary worksheet, ratings for individual intersections selected.

- **Proposed Edge to Destination**: This measurement documents any changes to current LOS conditions between project edge and key pedestrian destinations that would result from any pedestrian improvements proposed as part of the project development.

Note: The Worksheet is available as a Microsoft Excel file and may be expanded as needed to cover multiple destinations.

Step 5: Prepare and submit a Pedestrian Impact LOS Analysis for the development project

The Pedestrian Impact Level-of-Service Analysis should include the Development Proposal Pedestrian Level of Service Worksheet along with sufficient details, calculations, assumptions, illustrations, plan descriptions, and proposed solutions for the City to review and concur with the preparer's analysis conclusion.

City of Kansas City, MO Development Proposal

Pedestrian Level of Service Worksheet: [Date]

Project Name:

Project Location Classification (see text):

Contact Person & Title: | ***Phone:*** | ***e-mail:***

	Description of applicable destination area within 1,320 feet of proposed development edge	***Destination Area Classification (see text) --Internal or External to Site***	***Minimum level of service based on project location classification***					
			Minimum LOS →	***Directness***	***Continuity***	***Street Crossings***	***Visual Interest & Amenity***	***Security***
	Development Site		Current On Site to Internal Destination					
			Proposed On Site to Internal Destination					
			Current On Site to Edge					
			Proposed On Site to Edge					
1			Current Edge to Destination					
			Proposed Edge to Destination					
2			Current Edge to Destination					
			Proposed Edge to Destination					
3			Current Edge to Destination					
			Proposed Edge to Destination					
4			Current Edge to Destination					
			Proposed Edge to Destination					
5			Current Edge to Destination					
			Proposed Edge to Destination					
6			Current Edge to Destination					
			Proposed Edge to Destination					
	Summary		Current On Site to Edge					
			Current Edge to Destination					
			Proposed Edge to Destination					

Attachment 1 - City of Kansas City's Pedestrian Level of Service Methodology

The *Kansas City Walkability Plan* bases the overall evaluation of Kansas City's neighborhood and activity center pedestrian system on both measures of pedestrian mobility as well as the pedestrian demands within each neighborhood and center. Chapter 2 of the *Walkability Plan* provides user groups with measurement tools for determining pedestrian mobility, all based on the level of service methodology covered in this attachment. Chapter 3 of the *Walkability Plan* looks broadly at pedestrian demand, particularly at a citywide level. The pedestrian needs in high pedestrian activity areas will be more complex than in outlying areas, where pedestrian traffic is at a minimum.

This attachment concentrates on measures of pedestrian mobility that developers are to use in evaluating the current situation, referred to as pedestrian **level of service** (LOS), internal to the development site and within ¼ mile of any boundary, and how the development will affect access to key pedestrian destinations. It provides detailed directions on how to determine the current and proposed pedestrian level of service for each of five specific measures:

- **Directness**: Does the pedestrian network provide the shortest possible route?
- **Continuity**: Is the network free from gaps and barriers?
- **Street Crossings**: Can the pedestrian safely cross streets?
- **Visual Interest and Amenity**: Is the environment attractive and comfortable, offering protection from harsh conditions?
- **Security**: Is the environment secure, well lighted with good line of sight to see the pedestrian, and far away enough from vehicular traffic to provide a feeling of safety?

Impact Analysis Resources

- **Impact Study Area***:* The Impact Study Area is defined as the project itself and a ¼ mile radius from the outside edge of the project. All measurements should be made within this area, with the exception of junior high school and high school destinations, which have a 1-mile and a 1½-mile walking distance, respectively, and should be included in the Impact Study Area. Applicant must include maps, aerial photos and site designs as appropriate for the Impact Study Area in the final report.
- **Key Destinations and Proposed Routes***:* The applicant and the City should jointly review and finalize the applicant's proposed list of key destinations and proposed routes to key destinations internal to and external to the project area at a scoping session early in the study process. **The Pedestrian Level of Service Impact Analysis** shall identify on a map internal trip origin locations and logical pedestrian routes to key internal destinations as

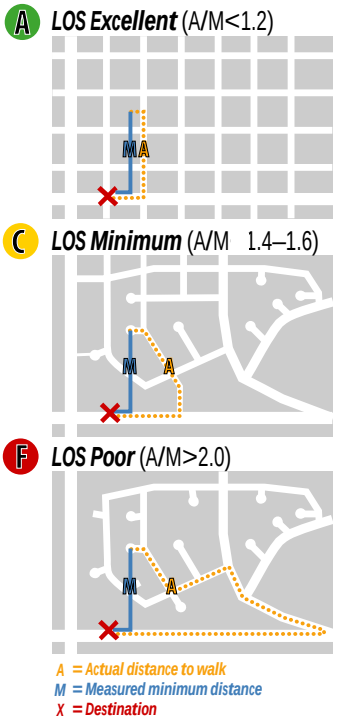
proposed by the project, as well as routes to the project's edge, and from the project's edge to key destinations within the Impact Study Area.

- In general, one or two trip origin locations in a smaller development and up to five or six representative trip origin locations in a larger development will be required. The map would identify the logical pedestrian route of the trip, where the pedestrian trip intersects with the public edge, and where they would walk to reach the outside destinations.
- The destinations selected should be from those defined on the list on page 3 of this manual (Recreational Sites, Residential Areas, Institutional Sites, Office Buildings, Commercial Sites, and Industrial Sites) and located within the Impact Study Area.
- Determining the Level of Service for each of the 5 measures for the pedestrian routes to key destinations within the Impact Study Area will require a field survey. The surveyor will need to keep field data sheets, notes, photographs that can be aggregated to complete the Pedestrian Level of Service Worksheet for individual destinations and overall, which shall be included in the Pedestrian Impact Analysis.

- **Measurement Procedures***:* The 11" x 17" table, found on page 16, entitled "Kansas City Pedestrian Levels of Service," encapsulates the measurement system for the five pedestrian level-of-service measures listed above and is a comprehensive reference for determining Level of Service. The Level of Service Table provides for a grade of A (the best level) to F (non-existence or total breakdown of pedestrian service) on each measure. The text of that follows entitled *LOS Measurement Procedures* supplements and further clarifies the measurements shown in the table.

LOS Measurement Procedures

- **Directness**: The measure of directness is simply how well the project provides direct public pedestrian connections within the project's boundaries and from the project's edge to destinations such as transit stops, schools, parks, commercial centers, or activity areas.
  - The directness LOS is based on a ratio of the actual distance from trip origin to trip destination divided by the minimum distance between those two points. To determine the Directness Ratio, measure the actual distance from a representative trip origin to the key destination selected in the scoping session and divide it by the minimum distance between those two points. The measurement can be done using a map or aerial photo supplemented by field check. The minimum distance is defined by the grid street pattern using standard sized city blocks (no greater than 660 feet in length), measuring from a representative trip origin to destination by a north-south measurement plus an east-west measurement. An actual/minimum (A/M) ratio of



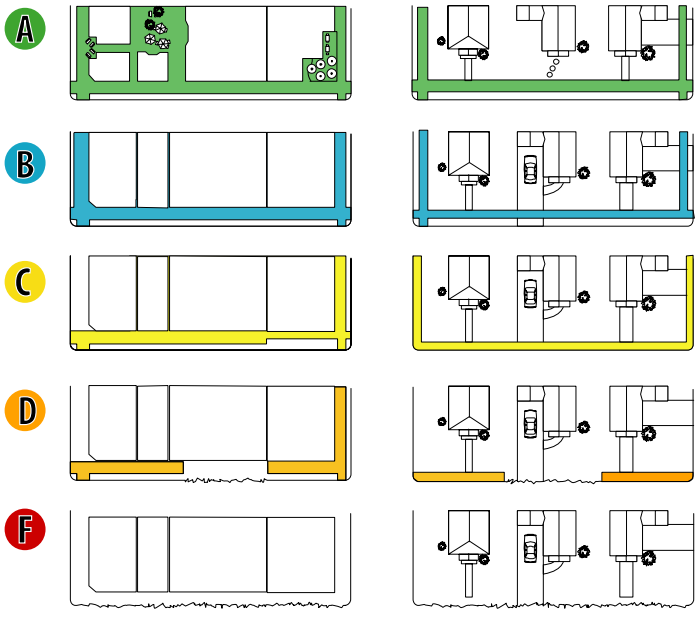
between 1.0 and 1.2 would be considered an LOS A, whereas an A/M ratio of 2.0+ would be considered a failure. In reality, an A/M ratio of below 1.0 could be achieved with the introduction of a diagonal street.

- For each on-site origin and each of three types of destinations (project edge and key internal and external destinations), measure the actual (A) distance a pedestrian would be required to walk to the nearest destination. The minimum distance, defined by a right angle grid overlay, between the same trip origins to the same three types of destinations, should also be measured. The pedestrian directness level of service is based on the following Actual/Minimum Ratio per the following table. The project's directness LOS shall equal or exceed the minimum standards as defined for the project's pedestrian area type.

Level of Service	*Actual Distance/ Measured Distance Ratio*
A	< 1.2
B	1.2–1.4
C	1.4–1.6
D	1.6–1.8
E	1.8–2.0
F	> 2.0

- In the event that the LOS is not being achieved, the applicant shall identify and document reasons why the minimum standard could not be achieved. If off-site restrictions are impacting the directness of the pedestrian system, the applicant shall identify methods for alleviating those restrictions. If there are no pedestrian destinations within the immediate study area, the directness LOS is not applicable. The applicant should still evaluate any connections to arterials that could eventually support transit. Final determination of whether the project achieves the minimum standards lies with the Kansas City Planning and Development Department.

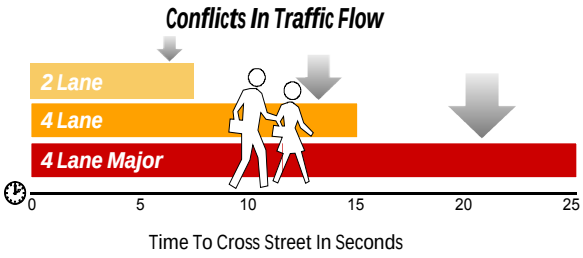
- **Continuity**: Continuity is the measurement of the completeness of the sidewalk system with avoidance of gaps and barriers.
  - The measure considers not only the presence of Americans With Disabilities Act (ADA) accessible sidewalks for the same routes used to evaluate Directness, but also the condition of the pedestrian pathways and whether there are barriers in the pathway (i.e. light poles in sidewalk, newspaper vending machines, etc.).



- This measure requires a field survey of the most logical routes to the project edge and to key destinations internal to and within ¼ mile of the project boundary.
- In the highest level of service, LOS A, the public pedestrian sidewalk not only provides access to areas, but also connects to continuous sidewalks within major projects, and areas, such as shopping centers and parks.
- LOS B and C have continuous sidewalks but without direct interior project connections and as the level fall, with increasing maintenance problems and non-standard widths or configurations.
- LOS F, the lowest level of service, is a complete breakdown in the pedestrian flow, where each pedestrian selects a different route because no pedestrian network exists.

- **Street Crossings**: This is the measurement that predicts how easy and safe it will be for a pedestrian to cross various types of streets with various street crossing and intersection designs.

  - The Kansas City Pedestrian Level of Service table at the end of this appendix defines street crossing level of service. The LOS is dependent on the type of crossing, the number of lanes to cross, lane widths, parking lanes, travel speed and the presence or lack of attributes listed above. For each street crossing type, the table defines the ideal condition with a minimum number of lanes for the highest levels of service. As design elements and features are reduced, parking lanes exists, higher speeds are estimated, and/or additional lanes to cross are increased, the LOS is reduced. If parking lanes do not exist and the pedestrian does not need to be exposed to additional travel time, or if traffic speeds are lower than what is typical for the roadway type, or if the traffic lanes are narrower, resulting in less exposure time for the pedestrian, the LOS is increased.



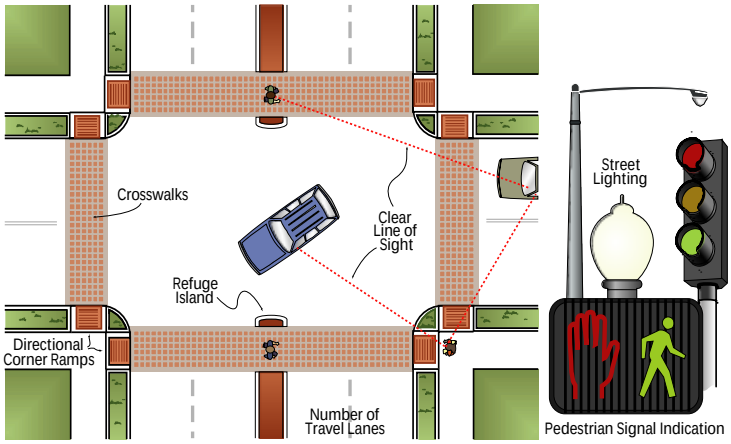
  - The minimum pedestrian level of service is defined by the pedestrian area type. If this minimum LOS is not met, the applicant shall recommend pedestrian street-crossing enhancements to improve the LOS to acceptable levels of service. The applicant should explain these recommendations in sufficient detail so that the City can understand the recommendation and support the proposal. It should further be noted that these improvements would be applied to both on- and off-site arterial street crossings needed to reach vicinity destinations.

- The Level of Service should be determined through a field survey of the routes to project edge and key destinations that the applicant and City selected at the scoping meeting. Applicant shall evaluate all primary and secondary arterial and collector street crossings for intersections internal to the project and intersections adjacent to the site used to access the defined destinations and existing and future transit stops. If there are no primary arterial, secondary arterial or collector streets to cross, enter "n.a." (not applicable) on the field sheets and pedestrian LOS worksheet.

- **Street Crossings Types**: There are four types of street crossings under the Street Crossings Level-of-Service Measure. Each has its own inherent issues and needs.
  - **Signalized Intersections**: Signalized intersections pose major pedestrian crossing problems due to high traffic volumes, turning vehicles, vehicles that stop in the crosswalk, a significant number of lanes to cross, signal indication that is difficult to read or understand, lack of visual connection with the automobile, lack of vehicle driver respect, lack of raised median protection, no corner ramps, and no or inconvenient pedestrian buttons.
  - **Unsignalized Intersection Crossing the Major Street**: Problems are similar to signalized intersections with even greater concern for the number of lanes to cross since pedestrians do not have the protection of the signal. Problems may also include speed of vehicles and lack of adequately marked crosswalks with good lighting, raised median, visibility, and corner ramps.
  - **Unsignalized Intersection Crossing the Minor Street**: The problem at these locations is the vehicle traveling along the arterial turning right or left onto the minor street, while being urged along by a following vehicle.
  - **Mid-Block Crossing**: Problems are similar to the unsignalized major street crossing, including number of lanes to cross and lack of crosswalk presence, lighting, raised median, and corner ramps.

- **Key Street Crossing Elements**: The following are key street-crossing elements that the field surveyors need to record on field sheets for each street crossing in order to determine its LOS (see attached sample "Street Crossing Worksheet.")
  - **Number of Lanes**: Identify the number of travel lanes the pedestrian must cross to reach their destination.
  - **Lane Widths**: Identify whether the travel lanes are 12 foot typical or whether they are less than typical.
  - **Parking Lanes**: Identify whether the street has on street parking that would increase the walk time necessary to cross the street, or if the parking lanes are protected by curb neckings or bump-outs.
  - **Travel Speed**: Does the street that needs to be crossed have higher travel speeds than typical for the roadway type under investigation? Factors that might affect speed would include minimum cross street traffic, low number of access points, and geometric design.
  - **Crosswalks**: Are there crosswalks, and are they well marked?

- **Signal Indication**: Are the signal heads easily visible to the pedestrian and the motorist?
- **Lighting Levels**: Is the intersection and crosswalk well lit so that the pedestrian is visible at night?
- **Pedestrian Signal Activation**: Some signals have the walk automatically set for each phase. This is desirable for all pedestrian areas, as it states the importance of the pedestrian. An alternative is the pedestrian button, where the pedestrian presses the button, waits for the cycle to repeat, and gets the walk phase. The third type of signal does not have any walk phase. This type of signal is unacceptable, as the only way a pedestrian may ever get a green light is when an automobile on the side street activates the cycle.



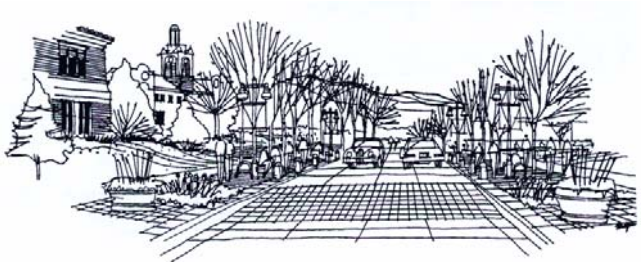
- **Median Refuge Areas**: Painted medians offer little refuge other than getting out of a lane of traffic. Substantive raised medians of significant width provide some increase in security for the crossing pedestrian and are required to meet LOS B and C standards for Street Crossings.
- **Amenity**: Amenity includes such elements as signing and design features that strongly suggest the presence of a pedestrian crossing.
- **Sight Distance**: Sight distance measures the unobstructed view between the motorist and the pedestrian. This can be a problem particularly when a vehicle driver intends to make a left turn under the permissive left-turn phase and it is difficult to see around the opposing left-turn vehicle. Sight distances can also pose a problem when parked cars are allowed too close to pedestrian crosswalks.
- **Corner Ramps & Radii**: Corner ramps may be either ADA standard or non-standard. The maximum curb radii allowed in Pedestrian Areas for an LOS A through C standard is 20 feet. Pedestrian Areas are defined as high pedestrian use areas based on the Kansas City Walkability Plan and identified on page 18 of this manual.

Visual Interest and Amenity

This is a measure of comfort and aesthetic appeal for the pedestrian. To promote pedestrian activity and use of transit, the pedestrian system needs to be aesthetically appealing and at least marginally comfortable, offering occasional places to rest and some protection from harsh environmental conditions like the intense summer sun.

Defining the "Visual Interest and Amenity" level of service is subjective. In general, if the environment has many of the features listed below, the applicant should give it a high level of service grade, whereas if it has few positive features, has poor lighting, and is not well maintained, it rates a poor level of service. The analysis of Visual Interest and Amenity should include a field survey of the key pedestrian routes as defined in the scoping session. As part of the preparation of the transportation impact study and the pedestrian section of the study, the applicant shall provide sufficient descriptions, graphics, and visuals to convey the character and quality of the pedestrian network.

The attractiveness of the pedestrian network can range from visually attractive with environmental enhancements, such as street trees or awnings, pedestrian street lighting, fountains, and benches, to an experience of discomfort and intimidation, associated with absence of amenities. Areas to examine regarding visual interest and amenity include the following:



- **Adjacent Uses**: Are the land uses along the pedestrian network attractive and inviting such that they encourage pedestrian activities or are they unappealing like non-maintained buildings and parking lots and auto-oriented uses?

- **Scale**: Does the urban environment reflect a pedestrian scale of improvements? Are the colors, materials, and form of the pedestrian facilities and features appropriate to the area and do they functionally unite the pedestrian network?

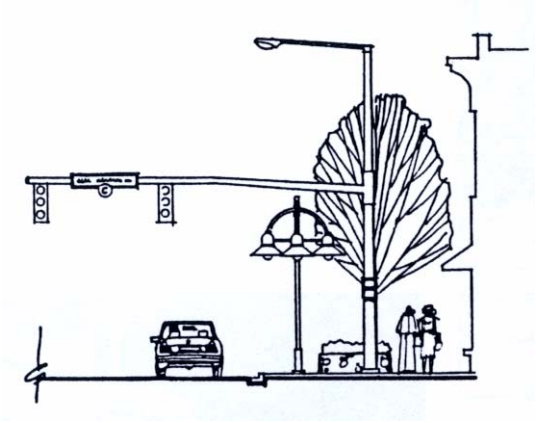
- **Comfort**: Does the walking route provide good protection from the harsh summer sun with street trees, building configuration or awnings; are there places to sit or rest along the way?

- **Attractiveness**: Does the area include landscaping, vertical treatment, and sidewalk furnishings and lighting that improve the character and pedestrian scale of the urban environment?

- **Design**: Does the study area include site details, such as public art, that enhance the pedestrian scale of the street and become urban amenities?

- **Maintenance**: Is the study area well maintained and clean?

Security



This is the measure of how secure a pedestrian feel along the walking route in terms of lighting, sight lines, and protection from vehicular traffic.

Pedestrians require a sense of security, both through visual line of sight with others and separation from vehicles. Major portions of the city's sidewalks along arterials are narrow and adjacent to high-volume, high-speed travel lanes. Other sidewalks are intimidating because they are not visible from the motorist and surrounding activities. The applicant should examine through a field survey agreed upon Pedestrian routes within the Impact Study Area based on lighting levels, sight distance, and separation from vehicular traffic. The final pedestrian traffic impact study shall have sufficient mapping, graphics/photographs, and text descriptions to confirm to the City's satisfaction that the applicant is meeting minimum-security pedestrian level-of-service standards.

KANSAS CITY PEDESTRIAN LEVELS OF SERVICE

Measurement	A	B	C	D	F
Directness	Pedestrian has a direct, clear, understandable linear public path to destination, generally with more than one alternative route. (A/M Ratio <1.2)*	Pedestrian has at least one direct, clear, understandable linear public path to destination with only minor deviations. (A/M Ratio 1.2 to 1.4)*	Minimum acceptable directness and connectivity standard; path to destination lacks linearity, and is less clear and understandable. (A/M Ratio 1.4 to 1.6)*	Increasing lack of directness, connectivity and linearity with incoherent and confusing direction and visual connection to pedestrian destinations. (A/M Ratio 1.6 to 2}*	No directness or connectivity. Total pedestrian disorientation, no linearity and confusing. (A/M Ratio >2.0)*
Continuity	ADA accessible Pedestrian sidewalk in good condition with landscaped parkway appears as a single entity connected to and within a major activity area or public open space.	Continuous stretches of ADA accessible sidewalks in generally good condition (10% or less need maintenance) that are physically separated by a landscaped parkway.	Continuous stretches of sidewalks that may have variable widths, with and without landscaped parkways; maintenance problems occur in less than 20% of sidewalk.	Pedestrian corridors are not well connected with several breaches or barriers in the pedestrian network; maintenance needed over 50% of sidewalk.	Complete breakdown in pedestrian traffic flow as each pedestrian selects a different route, as no pedestrian network exists.
Street Crossings: Signalized**	3 or fewer lanes to cross or 4 or 5 lanes to cross with raised pedestrian refuge median and/or reduced lane widths or slower traffic speeds; total crossing width no greater than 72 feet. signal has clear vehicular and pedestrian indications; well marked crosswalks; good lighting levels; standard curb ramps; maximum curb radii in Pedestrian Areas ***of 20 feet. automatic pedestrian signal phase; amenities, signing, sidewalk, and roadway character strongly suggest the presence of a pedestrian crossing; drivers and pedestrians have unobstructed views of each other.	4 or 5 lanes to cross or 6 or more lanes to cross with raised pedestrian refuge median and/or reduced lane widths or slower traffic speeds; total crossing width no greater than 84 feet. signal has clear vehicular and pedestrian indications; well marked crosswalks; good lighting levels; pedestrian refuge area: raised medians at least 6' wide with low plantings or features; standard curb ramps; maximum curb radii in Pedestrian Areas*** of 20 feet. automatic pedestrian signal phase; amenities, signing sidewalk, and roadway character strongly suggest the presence of a pedestrian crossing; drivers and pedestrians have unobstructed views of each other. Missing 2 elements of A	6 or more lanes to cross; total crossing width no greater than 96 feet. signal has clear vehicular and pedestrian indications; well-marked crosswalks; good lighting levels; pedestrian refuge area: raised median at least 6' wide with low plantings or features; standard curb ramps; maximum curb radii in Pedestrian Areas*** of 20 feet. automatic pedestrian signal phase; amenities, signing, sidewalk, and roadway character strongly suggest the presence of a pedestrian crossing; drivers and pedestrians have unobstructed views of each other. Missing 4 elements of A Missing 2 elements of B	Missing 5-6 elements of A Missing 4-5 elements of B Missing 2-3 elements of C	Missing 7 elements of A Missing 6 elements of B Missing 5 elements of C
Street Crossings: Unsignalized, Crossing the Major Street****	3 or fewer lanes to cross or 4 or 5 lanes to cross with raised pedestrian refuge median and/or reduced lane widths or slower traffic speeds; total crossing width no greater than 72 feet. Well-marked crosswalks; good lighting levels; standard curb ramps; maximum curb radii in Pedestrian Areas ***of 20 feet. amenities, signing, sidewalk, and roadway character strongly suggest the presence of a pedestrian crossing; drivers and pedestrians have unobstructed views of each other.	4 or 5 lanes to cross or 6 or more lanes to cross with raised pedestrian refuge median and/or reduced lane widths or slower traffic speeds; total crossing width no greater than 84 feet. Well-marked crosswalks; good lighting levels; pedestrian refuge area: raised median at least 6' wide with low plantings or features; standard curb ramps; maximum curb radii in Pedestrian Areas ***of 20 feet. amenities, signing, sidewalk, and roadway character strongly suggest the presence of a pedestrian crossing; drivers and pedestrians have unobstructed views of each other. Missing 1 element of A	6 or more lanes to cross; Well-marked crosswalks; good lighting levels; pedestrian refuge area: raised median at least 6' wide with low plantings or features; standard curb ramps; maximum curb radii in Pedestrian Areas ***of 20 feet. amenities, signing, sidewalk, and roadway character strongly suggest the presence of a pedestrian crossing; drivers and pedestrians have unobstructed views of each other. Missing 2 elements of A Missing 1 element of B	Missing 3-4 elements of A Missing 2-3 elements of B Missing 1-2 elements of C	Missing 5 elements of A Missing 4 elements of B Missing 3 elements of C
Street Crossings: Unsignalized, Crossing the Minor Street****	Well-marked crosswalks; good lighting levels; standard curb ramps; maximum curb radii in Pedestrian Areas ***of 20 feet. amenities, signing, sidewalk, and roadway character strongly suggest the presence of a pedestrian crossing; drivers and pedestrians have unobstructed views of each other.	Missing 1 element of A	Missing 2 elements of A	Missing 3-4 elements of A	Missing 5 elements of A
Street Crossings: Mid-Block Major Street Crossing****	3 or fewer lanes to cross or 4 or 5 lanes to cross with raised pedestrian refuge median, and reduced lane widths and/or slower traffic speeds; total crossing width no greater than 72 feet. amenities, signing and sidewalk and roadway character strongly suggest the presence of a pedestrian crossing; drivers and pedestrians have unobstructed views of each other; well marked crosswalks; good lighting levels; standard curb ramps.	4 or 5 lanes to cross or 6 or more lanes to cross with raised pedestrian median, and reduced lane widths and/or slower traffic speeds; total crossing width no greater than 84 feet. Raised median at least 10' wide with low plantings or features; amenities, signing and sidewalk and roadway character strongly suggest the presence of a pedestrian crossing; drivers and pedestrians have unobstructed views of each other; well marked crosswalks; good lighting levels; standard curb ramps. Missing 1 element of A	6 or more lanes to cross; Raised median at least 10' wide with low plantings or features; amenities, signing and sidewalk and roadway character strongly suggest the presence of a pedestrian crossing; drivers and pedestrians have unobstructed views of each other; well marked crosswalks; good lighting levels; standard curb ramps. Missing 2 elements of A Missing 1 element of B	Missing 3-4 elements of A Missing 2-3 elements of B Missing 1-2 element of C	Missing 5 elements of A Missing 4 elements of B Missing 3 elements of C
Visual Interest and Amenity	Visually appealing and compatible with local architecture. Generous sidewalk width, active building frontages. Good protection from elements by street trees or awnings; quality street furniture including frequent seating.	Generous sidewalks, visual clarity, some street furniture and landscaping, no blank street walls. Protection from elements available over 50% of block on average. Seating or resting places average once every 2 blocks.	Functionally operational with less importance to visual interest or amenity. Protection from elements available over 25% of block on average. Seating or resting places averages once every 3 to 4 blocks.	Design ignores pedestrian with negative mental image. Protection from elements averages less than 10% of block. No seating or resting places within ¼ mile.	Total discomfort and intimidation. No protection from elements in multi-block area. No seating or resting places.
Security	Sense of security enhanced by presence of other people using sidewalks and being overlooking from adjacent buildings. Good pedestrian lighting on pedestrian routes and clear sight lines. Good separation from vehicular traffic by parkway with trees/planters.	Good, if uneven, lighting levels on pedestrian routes and unobstructed lines of sight. Street edge of sidewalk separated from the street by at least 5 feet.	Generally good lighting levels on pedestrian routes with occasional short intervals of lower lighting; generally unobstructed lines of sight. Potential for separation from traffic of at least 5 feet.	Sidewalk configuration and parked cars may inhibit vigilance from the street. Separation from vehicular traffic available only at multi-block intervals.	Streetscape is pedestrian intolerant due to uses, building configurations, no protection from heavy traffic, no eyes on the street.

* A/M Ratio: Actual distance between pedestrian origin/destination divided by minimum distance defined by a right angle grid street system.
** A signalized intersection LOS will go up one level of service with a dedicated pedestrian signal phase and/or a colored or textured crosswalk.
*** Pedestrian Areas are potential high pedestrian use areas based on the Kansas City Walkability Plan and as defined in the ***Pedestrian LOS Impact Analysis Manual for Development Proposals***.
****Unsignalized crossing at intersection of major street (minor arterial to major arterial) and minor street (local, connector and collector).

KANSAS CITY STREET CROSSING PEDESTRIAN LEVEL OF SERVICE WORKSHEET

Project Name _____

Key Intersection # ___ Name: _____	***# Lanes***	***Crosswalks (Y/N)***	***Signal (Y/N)***	***Signal Type***	***Lighting***	***Refuge***	***Amenity***	***Sight Distance***	***Corner Ramps (ADA or Standard)***	***Grade***
North										
East										
South										
West										
Notes										
Key Intersection # ___ Name: _____	***# Lanes***	***Crosswalks (Y/N)***	***Signal (Y/N)***	***Signal Type***	***Lighting***	***Refuge***	***Amenity***	***Sight Distance***	***Corner Ramps (ADA or Standard)***	***Grade***
North										
East										
South										
West										
Notes										
Key Intersection # ___ Name: _____	***# Lanes***	***Crosswalks (Y/N)***	***Signal (Y/N)***	***Signal Type***	***Lighting***	***Refuge***	***Amenity***	***Sight Distance***	***Corner Ramps (ADA or Standard)***	***Grade***
North										
East										
South										
West										
Notes										
COMPOSITE STREET CROSSING GRADE										

Appendix D – Maple Park Case Study

A number of neighborhoods have elected to prepare their own neighborhood assessments to determine potential pedestrian improvement needs. As specified in the Neighborhood Walkability Self-Assessment instructions, the neighborhood assessment consisted of four steps:

1. Where Do You Want to Walk?
2. How Does Your Walking Environment Rate?
3. Take a Walk and Decide for Yourself.
4. Where Do You Want to Walk?

This Neighborhood Walkability Self-Assessment has proved to be beneficial in that it enabled the neighborhood to examine their area from a pedestrian focus. This information is also beneficial to the City for developing pedestrian improvements for the neighborhood. It is also useful to glean what basic priority improvements might be needed within an area that does not have sidewalks and extrapolating this information to address the overall needs of the City for all neighborhoods that have pedestrian demand but do not have pedestrian facilities.

The following section provides an example of one neighborhoods case study, Maple Park, located in the Northland east of I-435.

Maple Park Destinations

When the question was posed to the Maple Park neighborhood, what are the destinations within your area that you might want to walk, the neighborhood identified the following:

- Maple Park Elementary School
- Maple Park Middle School
- A Linear Park along the west side of the neighborhood
- A Church


1 mile
GROCERY STORE
SHOPPING CENTER
1 MILE
MAPLE PARK MIDDLE School
MAPLEWOOD Elementary
PARK
PARKWAY
PARKWAY
NE 54TH ST
NE 52ND ST
NE 51ST ST
NE 49TH TER
NE 49TH ST
NE 48TH TER
NE 48TH ST
NE 46TH TER
NE 46TH ST
N BELMONT AVE
N BEACON AVE
N FREMONT AVE
N BENNINGTON AVE
N CAMBRIDGE AVE
N BRISTOL AVE
N RANDOLPH RD
N WINCHESTER
N NEWTON AVE
EWING AVE
NE BAXTER AVE
NE COTTER
NE RIDGEWAY AVE
CAMBRIDGE AVE
N CORRINGTON AVE
CRYSTAL
INTERSTATE 435
49TH CT
48TH CT
53RD ST
51ST
NE MEADO
Church
Proposed Development/Community CENTER
Complete 2003
WOF
2 blocks
Maple Park
Neighborhood Walkability
Assessment 11-03-01
DESTINATIONS
300 0 300 600 Feet

The neighborhood also identified destinations that were outside the area (below) and these destinations are presented in the attached exhibit.

- Grocery Store
- Shopping Center

Maple Park Walking Environment

In reviewing their neighborhood, the residents of Maple Park raised a number of concerns and issues that pose problems for walking from their homes to the destinations. Their primary concern was the fact that the neighborhood does not have any sidewalks. In addition, pedestrians had to walk along unsafe roadways, particularly along N.E. 52nd, to get to the Maple Park Elementary and Junior and High Schools. Pedestrian safety concerns in front of the schools themselves were also raised, where there exist conflicts from children being dropped off and the children walking to school. The neighborhood representatives also commented on the fact these roads operate as a "raceway" after school gets out. In addition, a comment was raised regarding the fact that there are no sidewalks or paths along the linear park.

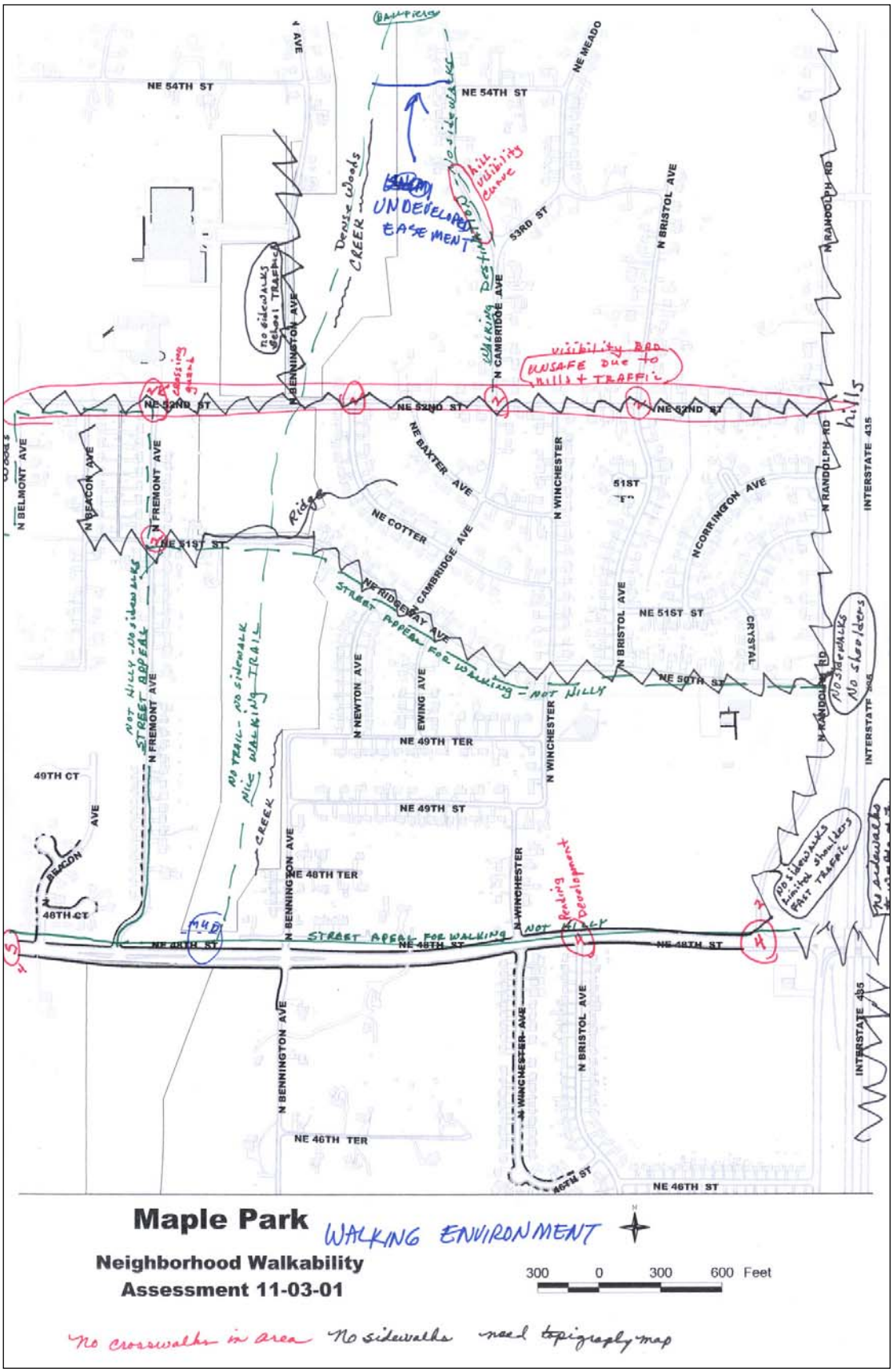
Walking Wishes

When asked the question what are your walking wishes, the top two requests were for a trail through the linear park along the east side of the neighborhood and some form of sidewalk improvements to the school along N.E. 52nd. In addition, they raised some additional requests for linkages to N.E. 52nd. These requested improvements are contained in the Walking Wishes graphic. In total, five pedestrian improvements were requested and prioritized as presented in the following section. It should be noted that these walking wishes were focused on their needs and that the completion of sidewalks for every street was not deemed necessary at this time to address their basic needs.

Engineering Assessment

Subsequent to the Maple Park neighborhood identifying five improvements that would be their pedestrian wishes, an engineering assessment was conducted to determine what improvements might be required to address their wishes and what the planning level cost estimates to provide these improvements would be.

The first step of the engineering assessment was to conduct a field visit to the neighborhood. This field investigation indicated that the neighborhood roadway system consists of generally narrow and unimproved roadways with roadside ditches located on both sides of the street for drainage. Utility poles, mailboxes, existing driveways, and private gravel parking areas next to the roads further increase the challenges in designing sidewalks within this area.


NE 54TH ST
NE 54TH ST
NE MEADO
UNDEVELOPED EASEMENT
Dense Woods
CREEK
53RD ST
N BRISTOL AVE
N RANDOLPH RD
N CAMBRIDGE AVE
N BENNINGTON AVE
visibility BAD UNSAFE due to hills + TRAFFIC
NE 52ND ST
NE 52ND ST
NE 52ND ST
hills
INTERSTATE 435
N BELMONT AVE
N BEACON AVE
N FREMONT AVE
NE BAXTER AVE
N WINCHESTER
51ST
NE COTTER
NE 51ST ST
CAMBRIDGE AVE
NE RIDGEWAY AVE
NE 51ST ST
CRYSTAL
NE 50TH ST
N NEWTON AVE
EWING AVE
NE 49TH TER
NE 49TH ST
49TH CT
BEACON AVE
NE 48TH TER
N BENNINGTON AVE
N WINCHESTER
NE 48TH ST
NE 48TH ST
NE 46TH TER
N BENNINGTON AVE
N WINCHESTER AVE
N BRISTOL AVE
NE 46TH ST
NE 46TH ST
INTERSTATE 435
Maple Park
WALKING ENVIRONMENT
Neighborhood Walkability
Assessment 11-03-01
300 0 300 600 Feet
No crosswalks in area
No sidewalks
need topigraphy map

2b Take a walk and decide for yourself.

Walking needs to be safe and easy. Grab this checklist, take a walk, and use it to decide if your neighborhood is a friendly place to walk. Take heart if you find problems; there are ways you can make things better.

Getting Started

Pick a place to walk, like the route to school, a friend's house or just somewhere fun to go. Read over the checklist before you go and as you walk, note the locations of things you would like to change. At the end of your walk, give an overall rating to each question then add up the numbers to see how you rated your walk.

Location of Your Walk: From FREMONT To WINCHESTER ON RIDGEWAY

1. Did you have room to walk?

- ○ Yes
- ✓ Some Problems
  - ○ Sidewalk started and stopped
  - ○ Sidewalks were broken or cracked
  - ○ Sidewalks were blocked with poles, signs, shrubbery, dumpsters, etc.
  - ✓ No sidewalks, paths, or shoulders
  - ○ Too much traffic
  - ○ Something else? _____

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

Locations of Problems: _____

2. Was it easy to cross streets?

- ○ Yes
- ✓ Some Problems
  - ○ Road was too wide
  - ○ Traffic signals made us wait too long or did not give us enough time to cross

  - ○ Needed striped crosswalks or traffic signals
  - ○ Parked cars blocked our view of traffic
  - ○ Trees or plants blocked our view of traffic
  - ○ Needed curb ramps or ramps needed repair
  - ✓ Something else? LACK OF SIDEWALKS

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

Locations of Problems: _____

Rating Scale

1	2	3	4	5	6
AWFUL	MANY PROBLEMS	SOME PROBLEMS	GOOD	VERY GOOD	EXCELLENT

3. Did drivers behave well?

- ○ Good
- ✓ Some Problems
  - ○ Backed out of driveways without looking

  - ○ Did not yield to people crossing the street
  - ○ Turned into people crossing the street
  - ✓ Drove too Fast
  - ○ Sped up to make it through traffic lights or drove through red lights
  - ○ Something else? _____

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

Locations of Problems: RACEWAY AFTER SCHOOL

4. Was it easy to follow safety rules? Could you...

a. Cross at crosswalks where you could see and be seen by drivers? NO CROSSWALKS Yes ○ No ○

b. Stop and look left, right and then left again before crossing streets? Yes ✓ No ○

c. Walk on sidewalks or shoulders facing traffic where there were no sidewalks? Yes ○ No ✓

d. Cross with the light? NONE Yes ○ No ○

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

Locations of Problems: _____

5. Was your walk pleasant?

- ✓ Nice
- ○ Some Unpleasant Things
  - ○ Needed more grass, flowers or trees
  - ○ Scary dogs
  - ○ Scary people
  - ○ Not well lighted
  - ○ Dirty, lots of litter or trash
  - ○ Something else? _____

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

Locations of Problems: _____

(3) Where do you walk/want to walk? / why

Based on your map which identifies the locations to which you want to walk, draw the most logical routes to get there.

Next, looking at your walking environment map, copy the completeness segments, street crossings, physical barriers, and areas that lack security to this map. In addition, overlay any visually unattractive areas that also might affect some of these routes.

In review of the problem areas, identify from 1 to 5, in red, the top five things in your neighborhood that might improve pedestrian mobility. If your neighborhood has more than five issues, list problems 6-10 in blue.

1. Walking trail through our parkway
2. Walkway for school children
3. Slowing TRAFFIC
4. Ridge way ? Enjoyable walk, East West Road through Neighborhood, Less busy.
5. Walkway – Bus stop + Traffic + Destination

Others:

COMMUNITY CENTER AS PART OF NEW DEVEL. – ACCESS FROM NEIGHBORHOOD FOR COMMUNITY MEETING

– SAFE ACCESS TO WORLDS OF FUN / OCEANS OF FUN : HUNT MIDWEST ASSIST AS ANCHOR??

Thank You!


NE 54TH ST
NE 54TH ST
NE MEADO
N BENNINGTON AVE
N CAMBRIDGE AVE
53RD ST
N BRISTOL AVE
N RANDOLPH RD
NE 52ND ST
NE 52ND ST
NE 52ND ST
N BELMONT AVE
N BEACON AVE
N FREMONT AVE
NE BAXTER AVE
N WINCHESTER
51ST
N CORRINGTON AVE
INTERSTATE 435
NE COTTER
NE 51ST ST
CAMBRIDGE AVE
NE RIDGEWAY AVE
N BRISTOL AVE
NE 51ST ST
CRYSTAL
NE 50TH ST
N NEWTON AVE
EWING AVE
NE 49TH TER
N WINCHESTER
49TH CT
NE 49TH ST
BEACON AVE
48TH CT
NE 48TH TER
N BENNINGTON AVE
NE 48TH ST
NE 48TH ST
NE 48TH ST
N BENNINGTON AVE
N WINCHESTER AVE
N BRISTOL AVE
NE 46TH TER
NE 46TH ST
Maple Park
Neighborhood Walkability
Assessment 11-03-01
WALKING WISHES
300 0 300 600 Feet

None of the roadways had sidewalks. The field survey also indicated that the sight distance between automobiles and between automobiles and pedestrians on some of these roadways are generally poor. Pedestrians are forced to use the existing streets and to share the narrow roads with vehicular traffic.

The engineering assessment also indicated that the five walking wishes and their priorities had merit, with a recreational path to serve pedestrians and bicycles being their number one priority and a sidewalk of some fashion along N.E. 52nd providing access to the schools as priority number two.

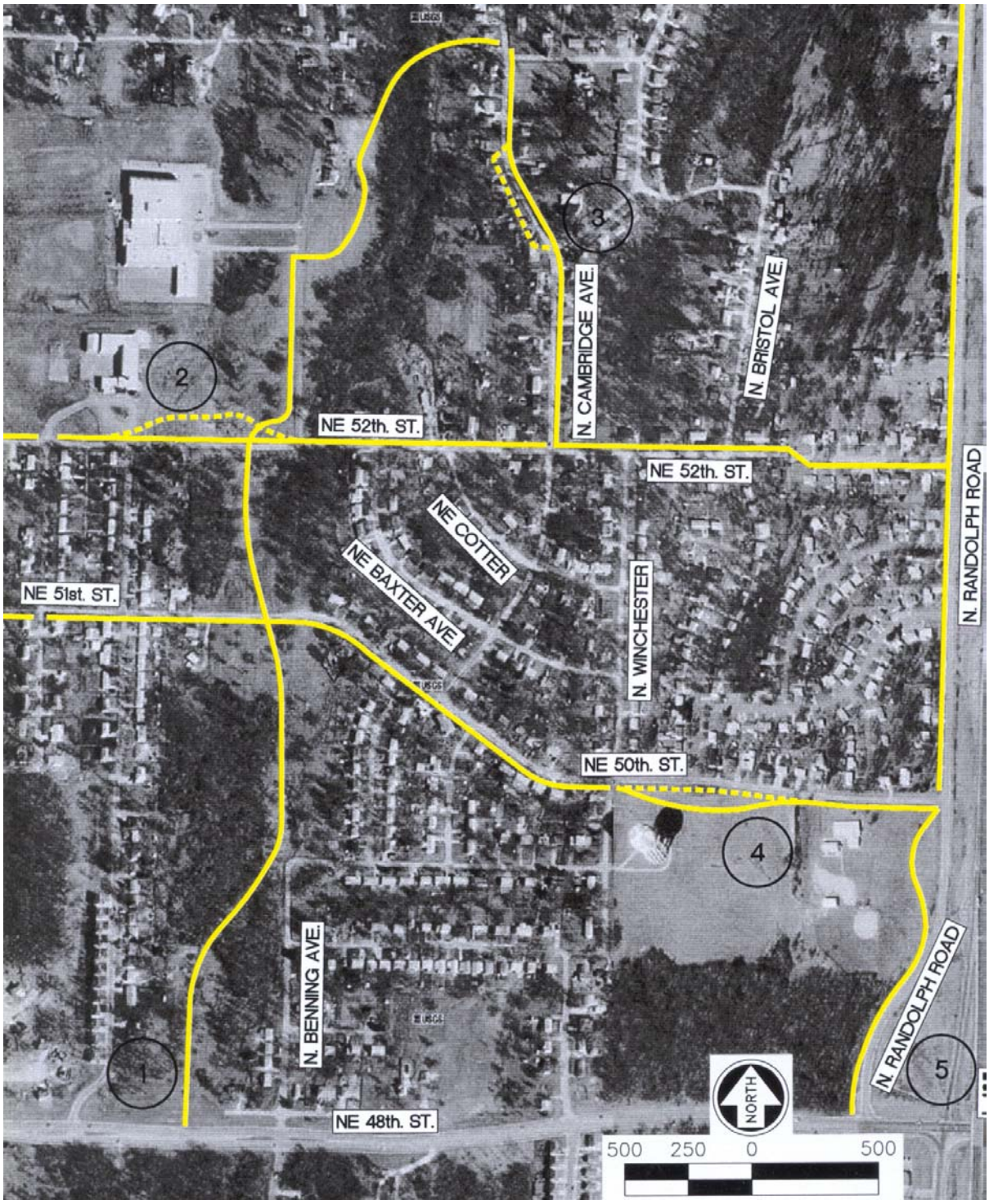
The field survey indicated that trying to improve the roadways to a typical 28-foot street with curb, gutters, and sidewalks is not economically feasible. In addition, the field survey indicated that improving the streets to current standards would have a significant negative impact on the existing yards. The typical street standard improvement would have a major impact on existing landscaping and have a detrimental impact on the aesthetic and quality of life aspects of the neighborhood. The engineering analysis, however, did indicate that the strategic placement of a five-foot sidewalk, located outside the roadside ditches would be possible and would provide a safe pedestrian route throughout the neighborhood.

The immediate and obvious issues would be whether Public Works would permit a set of improvements that does not comply with the current roadway standards. The City has developed a set of standards that have wide engineering support, both locally and nationally, for addressing transportation flow and safety. However, trying to implement these typical street improvements would be an unaffordable solution and would result in unacceptable and negative impacts to the adjacent developments. On the other hand, without some form of improvements, the real and perceived pedestrian safety issues within the neighborhood remains valid.

The Kansas City Walkability Plan suggests that for all new developments the current standards, or standards existing at the time of development, should be utilized. However, the Maple Park neighborhood was built at a time when the standards were not in place and constructing a sidewalk system to current street standards would not be economically feasible. Flexibility in the design of the pedestrian facility, which serves the key destinations particularly along the higher volume roadways, has merit and should be considered and promoted. This recommendation would not be just for Maple Park, but for other neighborhoods within the City that has moderate to high pedestrian demand without pedestrian facilities.

The Walkability Plan also recognizes that sidewalks to do not have to be everywhere, but instead be strategically located to address the current needs within communities that were built at a time where the current standards were not applied. Current and future developments are now required to provide pedestrian sidewalks on both sides of all streets.

The walking needs that were prioritized by the neighborhood and the subsequent analysis are presented as follows. These walking needs are highlighted on the attached figure.


NE 52th. ST.
NE 52th. ST.
N. CAMBRIDGE AVE
N. BRISTOL AVE
N. RANDOLPH ROAD
NE COTTER
NE BAXTER AVE
NE 51st. ST.
N. WINCHESTER
NE 50th. ST.
N. BENNING AVE
N. RANDOLPH ROAD
NE 48th. ST.
NORTH
500 250 0 500
1
2
3
4
5

Priority 1 - Park Trail

This route traverses the existing park from N.E. 48th Street, just west of Bennington north to 54th Street and N. Cambridge. This route will be the major north-south pedestrian connector for destination based trips as well as serving the recreational needs of the community. Because the route would serve both pedestrians and bicycles, it is recommended that a 10-foot wide minimum shared use path (trail) be constructed per AASHTO standards.

The existing park provides a beautiful setting for a trail. A meandering alignment for this trail can be designed to be accessible per ADA, while providing the best views of the vistas. The trail should also take advantage of the existing shade trees. The alignment can generally run through clearings between trees, with the exception of two locations where dense vegetation must be crossed. Preservation of the mature trees is important throughout the alignment

A relatively wide clearing with good lighting through the densely wooded areas should be considered for safety purposes. Pedestrian lighting along the entire trail may not be economically feasible depending upon the overall budget. The alignment of the trail should also provide a link to the existing middle school.

The construction cost for this trail depends on the level of pedestrian lighting desired. A trail without any lighting would cost approximately $100,000. However, with lighting for the entire trail, the approximate construction cost would raise by $400,000 (using $5,000 for lighting each 80 feet of the trail) for a total of $500,000.

Priority 2 - N.E. 52nd Street

N.E. 52nd Street is a narrow two-lane, unimproved roadway with roadside ditches and poor sight distance. It runs east/west between North Randolph and North Belmont Ave. This street is the main access road to the existing elementary and middle schools at Bennington. A sidewalk along this facility would provide a safe route for neighborhood students that wanted to walk to school.

Starting at the east end of this roadway west of Randolph, it is recommended to construct a five foot sidewalk on the south side of the road for approximately 600 feet to avoid existing utility poles, mail boxes, and trees along the north side of the road. The

sidewalk would then cross over to the north side of the road with a pedestrian crossing just north of the ditch and on existing grades. Fences, trees, and two driveways on the south side of the street at N.E. Cotter Ave. preclude construction of a sidewalk on the south side of the street. The sidewalk could take a meandering path west of Bennington on school property. The approximate construction cost of this segment would be approximately $75,000.

Priority 3 - Cambridge Avenue

This segment runs from N.E. 52nd Street to N.E. 54th Street. A five-foot sidewalk is proposed on the east side of Cambridge between 52nd and 53rd Street. No obstructions were noted during the engineering site visit for this portion of the alignment. Immediately north of 53rd Street, there is no room for a sidewalk on the east side of the right-of-way. Two options exist for this area: Option one is to cross the road and place the sidewalk on the west side of the road for a distance of 300'±. The second option is to move the fence on the east side of Cambridge and run the sidewalk between the existing trees that line the east side of the street and the new fence location. The sidewalk can stay on the east side north of this point to 54th Street. The trail in Segment 1 can connect to the north end of this walk. The construction cost of this segment is estimated at $50,000.

Priority 4 - N.E. 51st Street

A five-foot sidewalk is proposed on the south side of the road for the entire length of this segment. Although the entire roadway is generally narrow, the portion west of Freemont is extremely narrow requiring retaining walls and significant alteration of existing residential yards. The construction cost of this segment is estimated at $175,000.

Priority 5 - North Randolph

North Randolph is a heavily traveled frontage road with vehicular speeds of up to 50 mph. It is highly recommended to keep the sidewalk on the west side of this road for pedestrian safety. All of the people using this walkway are on the west side of Randolph.

There is an existing sidewalk on the west side of Randolph south of N.E. Mead, which ends south of the property for Moment of Truth Baptist Church. The new sidewalk will connect this sidewalk to the existing walk along N.E. 48th Street. This alignment will require clearing, grubbing, and retaining walls just south of the church property and immediately north of 48th Street.

There is also a guardrail at 53rd Street that needs to be relocated.

An overall planning cost estimate for this facility would be $200,000.

Conclusion

The Maple Park neighborhood is very similar to a number of areas within the City that do not have sidewalks, but do have the need for pedestrian improvements. The total cost for these improvements are in the range of between $600,000 without the linear park trail lighting to $1,000,000 with lighting.

From an independent review of the neighborhoods prioritization, it appears that the first two priorities, the north-south recreation path through the park without lighting and the N.E. 52nd Street sidewalk providing a safe route to school, have the greatest benefit and would be recommended. The improvement costs for these two improvements would be $1750,000.

The Maple Wood study area is approximately 350 acres in size and contains approximately 250 dwelling units. Improvement costs are estimated at between $500 per acre (priority 1 and 2 improvements only) to $3,000 per acre (high end for all improvements). On a dwelling unit basis, this would equate to a low of $700 per dwelling unit to a high of $4,000 in pedestrian improvement costs per dwelling unit.

The following are key findings and recommendations the City should consider.

- Providing extensive pedestrian improvements per current City standards for neighborhoods that do not have any sidewalks is not economically practical.

- Pedestrian improvements are not necessary on every street and are not necessary for every neighborhood, only those neighborhoods that have pedestrian destinations, such as schools, parks, transit, and shopping, within walking distance of the neighborhood.

- The City should examine practical and sound engineering solutions to providing pedestrian improvements within existing and established neighborhoods that are not per current City standards.

- Addressing even the highest pedestrian improvement priorities will take decades, even with an aggressive funding program.

- In order to be good stewards of limited resources, only the very highest priorities should be considered for funding and construction.

- The City needs to start planning for and constructing these improvements.