



CHAPTER SIX

CITY OF SHAWNEE COMPREHENSIVE PLAN

TRANSPORTATION

INTRODUCTION

The ultimate goal of the transportation plan is to increase the quality of life with a better, more efficient transportation system. While the network of streets throughout the City of Shawnee is the largest part of the whole system, there are many other aspects that need evaluation including sidewalks and trails, air and rail travel, roadways and highways of multiple governmental agencies, and coordination of transportation with both existing and future land use.

Most cities depend upon vehicles for transporting both people and goods. The plan for Shawnee improves the overall flow of vehicle travel in and around Shawnee while meeting a variety of mobility, economic, social, and environmental objectives.

KEY TRANSPORTATION ISSUES

Expand Non-Vehicular Circulation. Throughout the process of gathering community input, the issue of adequate pedestrian and bicycle facilities continually surfaced. With two first-class universities, and a growing population of over 28,000, a network of non-vehicular paths is important for the progress and attraction of Shawnee. Shawnee is home to a number of amenities such as, St. Gregory's University Oklahoma Baptist University, the Expo Center, Shawnee Mall, downtown and other event generators that are dispersed throughout the area. Pedestrian connections between neighborhoods and major attractions is important to foster a community feel and provide a healthy, environmentally friendly alternative to automobile transportation.

While sidewalks are present in some areas, improvements enhance their function and provide American Disabilities Act, ADA, compliance with more clearance and additional ramps. Two of the major arterials through the city are state highways and multi-governmental coordination of efforts could lighten the burden of expenses.

Coordinate Land Use and Transportation. The capacity and design of Shawnee’s transportation system has a direct impact on local quality of life. The ability of the roadway system to evolve and meet changing development patterns is key to maintaining a mobility network that is effective and free of significant congestion. Along local streets, where the local government has its greatest measure of control, Shawnee can regulate the location, layout and design of land development relative to the roadway, transit and sidewalk networks. However, coordination with ODOT and other area governments plays a bigger role on larger roadways.

Transportation improvements also have the capacity to guide the overall pattern of development of Shawnee. Improvements to specific areas may promote development activity whereas intentional lack of improvements in other areas can help to preserve resources, manage growth and preserve the sense of small town character.

Reservation or acquisition of sufficient right-of-way, including land needed for new roadways, expansion of existing roadways, relocation of utilities, and development of trails and paths make future growth more manageable. Continuous coordination with land use will not only save time and money, but also provide ease in design and construction of new facilities and infrastructure.

Enhance Roadway Efficiency. The transportation system is always judged by its ability to move volumes of traffic efficiently between destinations. However, efficiency means more than volume. An effective system offers a myriad of characteristics, but is generally safe for all users, easy to navigate, accessible, and operating within its anticipated/desired parameters. Streets need to be easily maneuverable and safe with controlled speeds and directive signage. Consistent traffic violations (such as speeding and ignoring traffic signals), poor access management, frequent collisions and congestion raise the ire and concern of residents and risk altering travel patterns. Safe access to businesses, schools, and homes must be maintained.

Statements from residents identified signage as an issue that is unclear or not present for destinations throughout the city. “Visual clutter” and billboard regulations also are concerns as unattractive and numerous signs plague the arterials. This issue will be covered extensively in later discussion in the **Image & Design Element**, however, it is equally important to transportation for improved safety and “wayfinding” – the





system of signage and markers that allow residents and visitor navigate through the city with relative ease.

Feasibility of Public Transportation. The elderly, disabled, low-income population, and students, among other residents, currently must rely on Central Oklahoma Transit for public transportation. The system runs from 8:00 a.m. to 5:00 p.m., Monday through Friday, and provides handicap accessible rides. There is no set schedule so users must contact Central Oklahoma Community Action Agency (COCAA) to request service, also called demand-response service. Coordination of services and needs with COCAA for Central Oklahoma Transit to obtain optimal assistance for the community is currently the most feasible solution. A system with various routes and scheduled stops visiting downtown, shopping areas, universities, neighborhoods, industrial areas, the airport, and other places of interest would be a great asset to the community. However, population and physical size does not warrant and would have difficulty supporting such a system.

The convenience of being close to Oklahoma City makes Shawnee a prime area for commuters. Many residents expressed an interest in a train system running between Shawnee and Oklahoma City. This type of transportation has been implemented in larger cities; however, a major funding source would be needed for the project, especially right of way and construction. A more attractive, short term (and significantly cheaper) alternative for commuters is the formation of a “car pool” that encourages ridership and coordinates vehicular grouping to desired locations.

Strengthen and Support Multimodal Transportation. Shawnee offers a number of transportation alternatives for goods, materials, services, and people including streets, air travel, and railway services. Shawnee Municipal Airport (SMA) is very progressive, with large improvements over the last six years and continually working toward further development. The airport services an array of aviation related businesses such as corporate, general, and commuter travel, and a variety of aviation related job training.

Missouri, Kansas & Texas (MK&T) as well as Atchison, Topeka, & Santa Fe Railroad (AT&SF) transect the city through vital industrial areas including downtown and the northern industrial park. The railroad system initiated growth of The City of Shawnee in the early 1900’s and is still used for a great amount of agricultural and industrial activity. Currently an MK&T bridge over the North Canadian River is out of service, restricting access to the southeast part of Oklahoma and beyond. As additional movement of cargo by train occurs, analysis of safety at grade crossings must be performed to ensure safety and reduce delay.

Increase Thoroughfare Capacity. A large section of the population commutes to Oklahoma City; therefore local roads and highways are

critical to the livelihood of this community. The grid system of Shawnee provides safe travel through town along arterial and collector streets. Upgrades and access management would drastically enhance the movement in congested areas such as Kickapoo Street from Interstate 40, I-40, south, 45th Street, and Harrison Avenue from I-40 south. A suitable roadway and signed connection between greater Shawnee and Twin Lakes along Benedict Street and Lake Road is a great opportunity to expand recreational and tourist attractions, among other advantages. Overall improvements could include increasing roadway width, utilizing access management principles, inserting traffic signals where warranted, and increasing capacity. The corridors connect important nodes and are vital to the traffic movement and future development of Shawnee.

TRANSPORTATION GOALS

Members of the community expressed concern for many aspects of transportation flow and safety. The goals, actions, and objectives for this element reflect and build on input received and further develop issues anticipated with future growth. A flexible approach must be used to evolve with other areas of the Comprehensive Plan including land use and housing and neighborhoods.

A clear, practical, and flexible approach to transportation improvements ensures that Shawnee offers:

- ◆ A strong network of pedestrian paths that provide convenient, safe and efficient access between neighborhoods, schools, destinations, and businesses.
- ◆ A transportation system that encourages good urban form and capacity for growth.
- ◆ Focus on transportation features beyond traffic flow and carrying capacity, such as safety, convenience, access, and ease of navigation.
- ◆ A diverse network of air, rail, and road transport for efficient movement of goods and services produced, stored or sold in the Shawnee area.
- ◆ An efficient thoroughfare framework to aid in future growth and ease unnecessary travel hindrances through town.

TRANSPORTATION OBJECTIVES & ACTIONS

EXPAND NON-VEHICULAR CIRCULATION

Goal One: A strong network of pedestrian paths that provide convenient, safe and efficient access between neighborhoods, schools, destinations, and businesses.





POTENTIAL OBJECTIVES

- ◆ Expand and enhance sidewalks throughout town that connect neighborhoods with schools, universities, downtown, parks, and commercial opportunities.
- ◆ Pursue improvements that enhance pedestrian safety and increase interconnection between neighborhoods and businesses.
- ◆ Develop a trails system complementary to sidewalks that can be implemented by phases as funding becomes available.

POSSIBLE ACTIONS

- ✓ Develop a phased plan of pedestrian path improvements to include sidewalks and hike/bike trails.
- ✓ Reserve or acquire land for future trail construction in coordination with the parks master plan and Future Land Use Plan.
- ✓ Provide sidewalk standards and require adherence to appropriate specifications (street classification, width, offset distance from roadway, one or both sides of street, continuity, etc.).
- ✓ Evaluate and improve, as needed, pedestrian crosswalks, signage, school zones, handicap ramps, curb cuts, and pedestrian timings at signalized intersections, such as Kickapoo & MacArthur, Union & MacArthur, and Union & Highland Streets.
- ✓ Perform an assessment of current conditions of sidewalks and prioritize improvements by connectivity and level of use.
- ✓ Coordinate with universities to determine appropriate pedestrian corridor locations.
- ✓ Work with Oklahoma Department of Transportation, ODOT, Pottawatomie County, and local Tribes, including the Citizen Potawatomi Tribe, Sac and Fox Nation, Kickapoo Tribe, and Absentee Shawnee Tribe, to provide sidewalks on all arterials.
- ✓ Assess accident reports, concentrating effort in areas with high vehicle-pedestrian collisions and make needed improvements.
- ✓ Research and target possible funding options for pedestrian improvements such as special assessment districts, block grants, transportation enhancement funds, and public-private partnerships.

COORDINATE LAND USE & TRANSPORTATION

Goal Two: A transportation system that encourages good urban form and capacity for growth.

POTENTIAL OBJECTIVES

- ◆ Analyze needs of existing businesses and neighborhoods for possible improvements.
- ◆ Recognize the importance of roadway and streetscape improvements to areas of future development along I-40 and downtown as well as activity taking place in undeveloped areas.

- ◆ Utilize the Thoroughfare Plan as a guide as to which areas of transportation necessitate expansion to encourage development as well as other capital improvements vital to the success of target areas.

POTENTIAL ACTIONS

- ✓ Utilize the Thoroughfare Plan and consider traffic impacts during review of zoning changes, subdivision applications, and site development to ensure functional integration of new streets with existing arterial and connector street system; interconnected street systems between adjacent developments, as appropriate; and multiple points of ingress/egress for large subdivisions.
- ✓ Require developer participation in producing traffic impact studies and mitigations actions for large scale development proposals.
- ✓ Refer to the Thoroughfare Plan for new development to ensure efficient integration, easily accessible entrances and exits, and connections between developments.
- ✓ Coordinate roadway, utility, and other infrastructure improvements with new development.
- ✓ Periodically review the City's Thoroughfare Plan and consider amendments as necessary to maintain consistency with the Future Land Use Plan, zoning, and other development related ordinances.

ENHANCE SAFETY & USABILITY

Goal Three: Focus on transportation features beyond traffic flow and carrying capacity, such as safety, convenience, access, and ease of navigation.

POTENTIAL OBJECTIVES

- ◆ Replace visual clutter and current standards with an organized "wayfinding" system.
- ◆ Maintain an effective and updated Thoroughfare Plan to ensure continuity and efficiency of the street system and use as a reference for new construction and re-development.
- ◆ Ensure a balance between access, efficiency and safety in the transportation network.

POTENTIAL ACTIONS

- ✓ Develop guidelines, standards and incentives to reduce visual clutter along Shawnee roadways such as Harrison Street.
- ✓ Initiate a proposal to develop a "wayfinding" system that displays the unique character of Shawnee and clearly guides motorists through the city.
- ✓ Analyze capacities and collision reports for major intersections and roadways to determine necessary modifications of geometry, signage, and other details to make for safer travel.





- ✓ Use traffic calming measures in areas of high pedestrian activity or locations exhibiting high speed, volume, rate of collision, or cut through traffic.
- ✓ Encourage use of access management principles along arterials and other congested roadways such as medians and openings, auxiliary lanes, appropriate driveway design and quantity of adjacent entrances.
- ✓ Work with ODOT for signage along highways.
- ✓ Coordinate efforts with ODOT, Pottawatomie County, and local Tribes as needed to ensure that the goals and objectives of the Transportation Element are met.
- ✓ Coordinate meeting with Shawnee Police Department to discuss increased monitoring and enforcement of laws against speeding, traffic light violations and other problems that reduce the safety of the roadway.

STRENGTHEN & SUPPORT MULTIMODAL TRANSPORTATION

Goal Four: A diverse network of air, rail, and road transport for efficient movement of goods and services produced, stored or sold in the Shawnee area.

POTENTIAL OBJECTIVES

- ◆ Enhance the viability of Shawnee Municipal Airport.
- ◆ Increase circulation along heavily traveled cargo routes for trucks and the traveling public.
- ◆ Coordinate efforts with railroad entities to ensure safety and communicate expected expansion of facilities.

POTENTIAL ACTIONS

- ✓ Update airport master plan to guide improvements to existing facilities, runway expansion and increased attraction of new business, travel opportunities, and job possibilities.
- ✓ Upgrade roadways adjacent to the airport, industrial park and connecting I-40 to include appropriate roadway material and widths to service heavy truck traffic including Federal Avenue to Kickapoo Street and Airport Drive from Independence Street to MacArthur Street.
- ✓ Determine growth needs of the air and rail system to provide for expansion of transportation and product shipping services.
- ✓ Review and modify truck routes as needed.
- ✓ Require business parks to provide internal roadway access and single entry points for major roadways such as Kickapoo, Wolverine, and Harrison Streets.
- ✓ Encourage appropriate industry, agricultural warehouse, and shipping businesses to locate near railroad to lessen heavy truck traffic on city streets.
- ✓ Actively encourage replacement of the MK&T Railroad bridge over the North Canadian River.

INCREASE THOROUGHFARE CAPACITY

Goal Five: An efficient thoroughfare framework to aid in future growth and ease unnecessary travel hindrances through town.

POTENTIAL OBJECTIVES

- ◆ Increase capacity of major corridors and intersections.
- ◆ Upgrade highway entrances and exits.

POTENTIAL ACTIONS

- ✓ Explore alternative solutions to the current configuration of Kickapoo Street from MacArthur Street south and utilize access management principles from I-40 south to Main Street.
- ✓ Delegate 45th Street as the major east/west arterial through Shawnee by expanding the roadway and intersections from Bryan Street to the airport.
- ✓ Upgrade the route from Kickapoo Street to Twin Lakes along Benedict Street and Lake Road to collector qualities and classifications.
- ✓ Pave roads in the Twin Lakes area such as Belcher Road, Post Office Lane, and Nickens Road.
- ✓ Consider construction of a new overpass for Bryan Street over I-40.
- ✓ Upgrade Union, Independence, and Highland Streets to minor arterial status and character.
- ✓ Improve the entrance to the Expo Center to handle event traffic flow.
- ✓ Upgrade access roads along I-40 to increase safety.
- ✓ Refer to the Thoroughfare Plan for classification or reclassification of existing or future roadways, as needed.

ESSENTIAL IMPROVEMENTS

The transportation plan includes a wide variety of issues, considering both short and long term goals. Improvements considered immediately essential are the upgrade of 45th Street, modification to Kickapoo Street, and improvement to Benedict Street and Lake Road leading to Twin Lakes. While these issues require a large amount of funding and are fairly large scale, they are vital to the overall health of the transportation system.

EXISTING TRANSPORTATION SYSTEM

Shawnee is a community that has been historically accessible. The railroad network forged the path to prosperity in an earlier age while, today, Shawnee is intersected by a major interstate. The following federal and state highways transect and border Shawnee and carry a large amount of traffic through the area.

I-40 The interstate is four lanes and runs east to Ft. Smith, Arkansas and west to Oklahoma City and Amarillo. A large amount of freight truck traffic takes place on this interstate.





US 177/270 Shawnee’s western edge is defined by US 177. The highway runs from the city south through Sulphur and north through Perkins.

SH 18 Originating at Beard Street, State Highway 18 runs north through Chandler to the Kansas border. The highway follows Farrall Avenue then Harrison Avenue through Shawnee.

Bus 270 Business route 270 through Shawnee originates and terminates at US 177/270. The highway runs east on Farrall Avenue, north on Beard Street, west on Highland Street, north on Kickapoo Street, and west to US 177/270. The path moves through the heart of downtown and adjacent to residential neighborhoods.

Many people move to Shawnee looking for the “small town” feel, high quality universities, proximity to Oklahoma City, and among other characteristics, a great sense of community. Making a community a pleasant place to live is a sum of many factors including not only transportation, but also land use, housing and neighborhoods. A city with the population and growth potential of Shawnee must thoughtfully prepare for the future. The expansion must include appropriate improvements to infrastructure that guides growth to desired areas.

Table 6.1, Proposed Transportation Improvements in 2000-2001 Capital Improvements Program displays a list of proposed transportation improvements and their status as included in the current CIP.

**Table 6.1
Proposed Transportation Improvements in 2000-2001 Capital Improvements Program**

Improvement		Status
1	Union from 45th to Interstate 40	Completed
2	Traffic signal at Airport Drive and MacArthur	Designed
3	New entrance to Expo center from US 177	To Be Completed
4	Overlay streets	On-going
5	Rehab asphalt streets	On-going
6	Remington Street from Pesotum to Cleveland	Completed
7	Main Street from Harrison to Pesotum	Completed
8	Broadway from Midland to Independence	Completed
9	Close intersection of Independence and US 177	Completed
10	Concrete street rehabilitation	On-going
11	Widen and resurface Kickapoo from Uponor to Wolverine and Wolverine from Kickapoo to Harrison	Completed
12	Pave RV parking at Expo Center	To Be Completed
13	Resurface Kickapoo from Wolverine to Hazel Del	Completed
14	Industrial access road to Wolverine Industrial Park	To Be Completed
15	Relocate utilities to widen Highway 18	Completed
16	Pave existing parking lots at Expo Center	To Be Completed
17	Develop and construct a streetscape of Main Street from Beard to Philadelphia, Bell Street between Main and Highland, Union from Main to Highland, and Broadway from Main to Highland	Phase I Designed

TRAFFIC VOLUMES

Average daily trips (ADT) give a good representation of the flow and distribution of vehicles. These traffic volumes assist in determining the ability of the system to serve the area’s travel demands. The most recent available average daily traffic volume counts were obtained from the City of Shawnee and include counts from 1999 to 2003. An interesting trend in volumes, since 1999, shows that 70% of roadways have seen a *decrease* in traffic volume.

Table 6.2, Shawnee 2003 Traffic Counts clearly shows the significant traffic near the square mile of MacArthur, Harrison, Independence, and Kickapoo Streets. The

highest average traffic volume was 20,083 daily trips on Harrison Avenue at Federal Avenue. Areas seeing the greatest increase over a four year span were Union Avenue at MacArthur Street, US 270 Business at Kickapoo Street, and Union Avenue at 45th Street.

Classifications reflect the function that each road serves as part of the local street network. The cross section of a roadway is related to traffic volume, design capacity, and Level of Service. The 1993 Shawnee Comprehensive Plan classifies streets as Freeways, Major Arterials, Minor Arterials, Collectors, and Local Roads. Cross section requirements for each class of road are provided in the City’s Subdivision Regulations. A summary of existing requirements is provided in **Table 6.3, Existing Roadway Cross Sections**. Each cross section identifies minimum dimensional criteria for right-of-way and pavement width. Recommended changes to these widths can be found in the Functional Classification of Roadways section of the Master Thoroughfare Plan.

**Table 6.2
Shawnee 2003 Traffic Counts**

Street	Intersection	ADT
Harrison	39th	16,318
	45th	16,458
	Federal	20,083
	Highland	13,269
	MacArthur	17,893
	Main	1,183
	Wallace	16,055
MacArthur	Bryan	4,445
	Harrison	12,091
	Hospital	11,177
	Kickapoo	12,416
	St. Gregory	7,830
Kickapoo	36th	17,525
	Federal	15,278
	Main	4,820
	Pulaski	15,567
Independence	Bryan	3,188
	Harrison	10,693
	Kickapoo	9,951
Gordon Cooper	North of North Canadian River	13,479
Bryan	Highland	7,464
	Independence	8,124
	MacArthur	6,421

**Table 6.3
Existing Roadway Cross Sections**

Classifications	Right-Of-Way*	Pavement Width*
Freeway	330	**
Major Arterial	120	50
Minor Arterial	100	50
Collector	60	32
Local	50	26

*All distances in feet



THE MASTER THOROUGHFARE PLAN

Thoroughfare system planning represents the process that is proposed for the Shawnee Comprehensive Land Use and Development Plan to assure development of the most efficient and appropriate street system to meet existing and future travel needs of the Shawnee planning area. The purpose is to ensure orderly and progressive development of the streets to serve mobility and access needs of the public. Thoroughfare planning is intrinsically interrelated with other components of the plan including land use and housing.

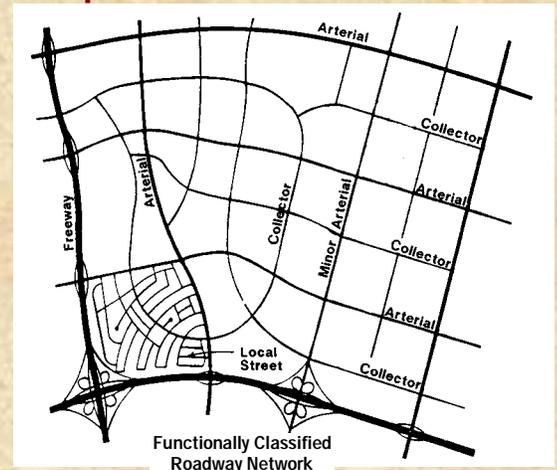
MASTER THOROUGHFARE PLAN MAP

The existing and proposed thoroughfare system of principal and minor arterials and collector streets is displayed in **Figure 6.1, Master Thoroughfare Plan Map**. The Master Thoroughfare Plan Map shows approximate alignments for planned thoroughfares that will be considered in platting of subdivisions, right-of-way dedication, and construction for major roadways within the Shawnee.

Some pathways noted in the thoroughfare system will require new or wider right-of-way and may ultimately be developed as two-lane or multi-lane roadways with various cross sections. Others streets will not necessarily ever be widened due to physical constraints and right-of-way limitations. For constrained roadways, designation signifies their traffic-handling role in the overall street system and the importance of maintaining such streets in superior condition to maximize their traffic capacity since they most likely cannot be improved to an optimal width and cross section. The Plan does not show future local streets because these streets function principally to provide access and their future alignments may vary depending upon development plans. Local street alignment should be determined by the Shawnee Planning Commission, in conjunction with City staff and landowners, as part of the development process.

The Master Thoroughfare Plan will affect the growth and development of the Shawnee planning area since it guides the preservation of right-of-way needed for future thoroughfare improvements. As a result, the Plan has significant influence on

Figure 6.2
Examples of Functional Classification



Various classifications of roads in a network are based upon intended function. However, the function and classification of a road may change over time as development patterns in the MPC Planning Area change.

Source: adaptation by Wilbur Smith Associates

the pattern of movement and the desirability of areas as locations for development and land use. While other elements of the Plan look at foreseeable changes and needs over a 20-year period, thoroughfare planning requires an even longer-range perspective extending into the very long-term future. Future changes in transportation technology, cost structure, service demand and long-term shifts in urban growth and development patterns require a far-sighted and visionary approach to thoroughfare planning decisions.

FUNCTIONAL CLASSIFICATION OF ROADWAYS

The roads and streets of Shawnee are grouped into functional classes according to the type of service they are intended to provide in terms of traffic movement and access. Characteristics of each functional class of roadway differ as needed to meet the corridor’s intended purpose.

Figure 6.2, Example of Functional Classifications, includes Major Arterials, Minor Arterials, and Collectors. On a neighborhood scale, streets are further classified as Local Streets. **Table 6.4, Characteristics of Roadway Types** describes the differences between each classification.

In addition to standard street classifications, the Subdivision Regulations have classifications, including separate right-of-way pavement width requirements, for Major Arterial, Minor Arterial, Collector, and Local. The Master Thoroughfare Plan does not differentiate between local streets by assigning class. Instead, the Plan proposes that local street width and other characteristics be changed

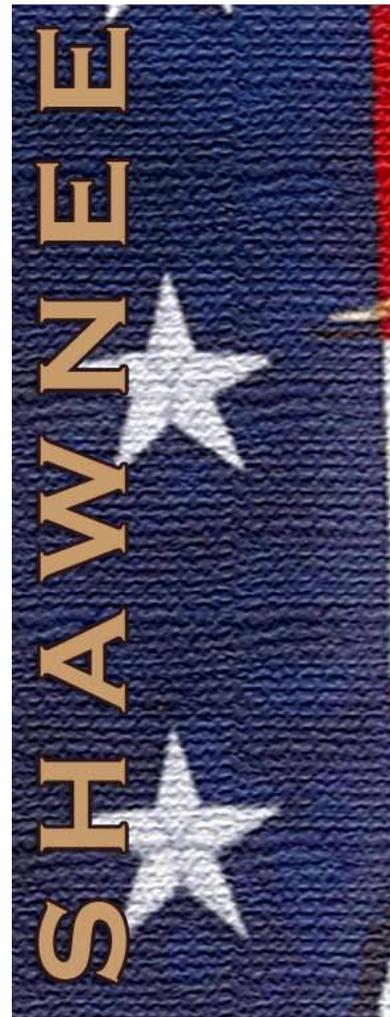


Table 6.4
Characteristics of Roadway Types

Criterion	Freeway	Major Arterial	Minor Arterial	Collector	Local Street
Functional Role	Entirely through traffic movement with no direct access to property.	Mobility is primary, access is secondary. Connects Freeways and other Arterials.	Connects Freeways, Principal Arterials and lower-classification roadways. Access is secondary.	Collects traffic destined for the Arterial network. Connects Arterials to Local Streets. Also land access.	Access is primary. Little through movement.
Roadway Continuity	Inter-city, regional and interstate.	Connects Freeways to lower-classification roadways. Connect major activity centers.	Connect Freeways and Major Arterials to lower-classification roadways.	Continuous between Arterials. May extend across Arterials.	Discontinuous. Connect to Collectors.
Traffic Volumes	40,000 Vehicles per Day or more	20,000 to 60,000 VPD	5,000 to 30,000 VPD	1,000 to 15,000 VPD	100 to 5,000 VPD
Desirable Spacing	5 miles or more	2 miles or more	Generally 1/2 mile to 2 miles	Generally 1/4 to 1/2 mile	Varies with block length (at least 125 feet between)
Posted Speed	55 to 70 MPH	40 to 55 MPH	30 to 45 MPH	30 to 35 MPH or less	20 to 30 MPH
Access	Controlled access. Grade-separated interchanges and frontage/service roads.	Intersect with Freeways, Arterials, Collectors and Local Streets. Restricted driveway access.	Intersect with Freeways, Arterials, Collectors and Local Streets. Limited driveway access.	Intersect with Arterials and Local Streets. Driveways permitted.	Intersect with Collectors and Arterials. Driveways permitted.
On-Street Parking	Prohibited	Restricted	Restricted	Normally permitted	Permitted
Community Relationship	Define neighborhood boundaries.	Define neighborhood boundaries.	Define and traverse neighborhood boundaries.	Internal and traverse neighborhood boundaries.	Internal.
Through Truck Routes	Yes	Yes	Permitted	No	No
Bikeways	No	No	Limited	Yes	Yes
Sidewalks	No	Yes	Yes	Yes	Yes

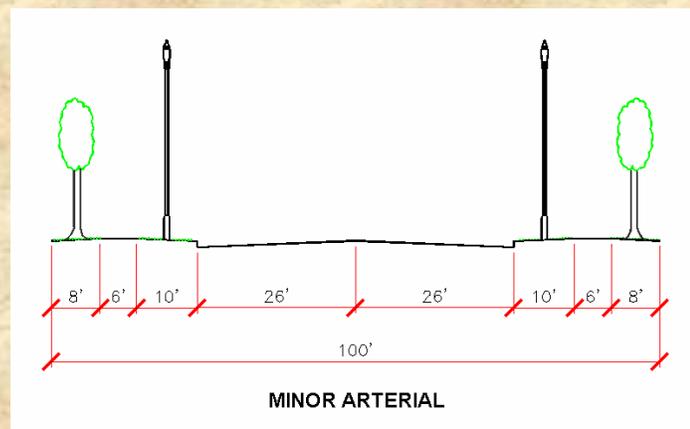
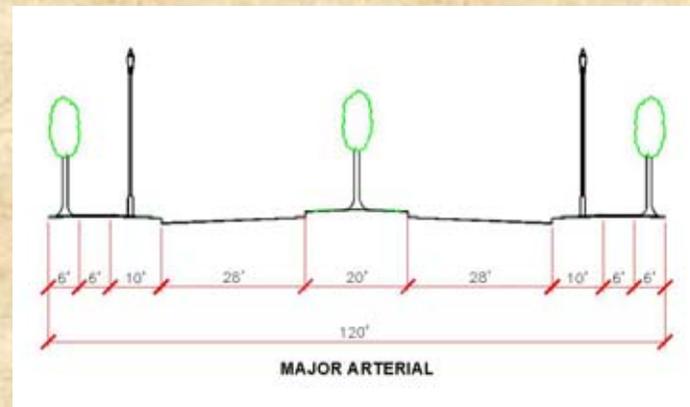
COMPREHENSIVE PLAN

according to need, including such characteristics as the desire for on-street parking, presence of bike lanes, choice of trails or sidewalks, anticipated traffic volume, and location within an urban, suburban or rural setting. **Figures 6.3 and 6.4, Major and Minor Arterial Sections; Collector and Local Sections** show the proposed typical roadway and right-of-way sections for the appropriate roadways.

Classifications for alleys and marginal access streets are a function of service and property access and, therefore, are not included in the recommended classification system of the Master Thoroughfare Plan. This is not to indicate that the Master Thoroughfare Plan ignores the possibility of alleys in a development. In fact, the Plan recognizes the valuable contribution of alleys to the urban fabric and establishment of community character and proposes that they be used as appropriate.

Major Arterial. A major arterial is proposed to be a divided thoroughfare with a recommended right-of-way width of 120 foot including a pavement section of 56 feet and a 20 foot raised median. The 56 foot pavement section is a proposed increase from the existing 50 feet to include a median, curb and gutter to serve the roadway. Sidewalks are located on both sides of the street and are located 10 feet from the face of the curb. The 10 foot natural area between the

Figure 6.3
Major & Minor Arterial Sections



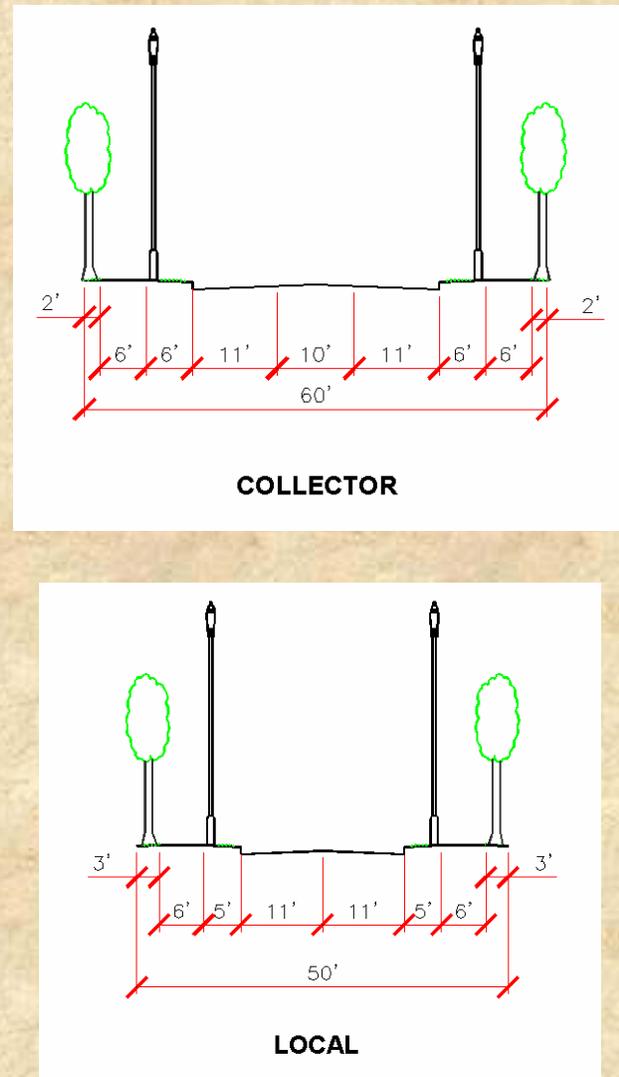
street and sidewalk is sufficient in length to provide for decorative street lighting, landscape, greenspace and public open space. In addition, a median provides for access control and improved traffic safety. Examples of Major Arterials are proposed to include 45th Street, Kickapoo, and Harrison Streets.

Minor Arterial. An undivided thoroughfare is recommended to include 100 foot of total street right-of-way with a 52 foot pavement section. Modifying the pavement section from 50 feet to 52 feet allows for curb and gutter and two 11 foot lanes. Sidewalks are located on both sides of the street and are located 10 feet from the face of the curb. The 24 foot right-of-way, excluding the width of pavement, provides space for decorative street lighting, landscaping, greenspace and public open space. Bryan, Farrall, Highland, Independence, and MacArthur Streets are examples of proposed Minor Arterials.

Collector. The collector roadway classification is recommended to maintain a 60 foot right-of-way width and continue to require 32 feet of roadway width. Sidewalks are located on both sides of the street and are located six feet from face of curb. The 14 foot of additional right-of-way along each side of the roadway provides space for decorative street lighting, landscaping, greenspace and public open space. Examples of Collectors a proposed to include Westech, Broadway, Union, Wallace, and Main Streets.

Local. A local street is proposed to include 50 foot right-of-way with

Figure 6.4
Collector & Local Sections





22 feet of roadway width. The limited pavement of a 22 foot roadway increases affordability by reducing infrastructure cost and maintenance while increasing the sense of community. If needed, local roadways may be increased to a width of 26 feet, allowing for flexibility in standards. Sidewalks are proposed to be offset from the face of the curb to allow adequate width for lighting and greenspace.

CRITERIA FOR ROADWAY CLASSIFICATIONS

Arterial roadways form an interconnecting network for communitywide movement of traffic through connections to expressways, parkways and interstates. Although they usually represent only five to ten percent of the total roadway network, arterials typically accommodate about 30 to 40 percent of an area's travel volume. Since traffic movement, not land access, is the primary function of arterials, access management is essential to avoid traffic congestion and delays caused by turning movements for vehicles and other traffic to no more than 10-15 miles per hour. Signalized intersection spacing should be long enough to allow a variety of signal cycle lengths and timing plans that can be adjusted to meet changes in traffic volumes and maintain traffic progression (preferably one-third to one-half mile spacing).

The cross section of arterials may vary from multi-lane roadways in developing fringe and rural areas east of Bryan Street where traffic volumes have not increased to the point that more travel lanes are needed or are not warranted due to limited density. Functional classification is not dependent on the number of lanes since the functional role served by a roadway typically remains over time while the roadway's cross section is improved to accommodate increasing traffic volumes. Thus, lower-volume roadways may also function as arterials, particularly in fringe and rural areas.

Subdivision street layout plans and commercial and industrial districts should include Collectors as well as Local Residential Streets in order to provide efficient traffic ingress/egress and circulation. Since collectors generally carry higher traffic volumes than local residential streets, they may require a wider roadway cross-section or added lanes at intersections with arterials to provide adequate capacity for both through traffic and turning movements. However, since speeds are slower and more turn movements are expected, a higher speed differential and much closer intersection/access spacing can be used than on arterials. Collectors typically make up about five to ten percent of the total street system.

Local residential streets allow direct property access within residential and commercial areas. Through traffic and excessive speed should be discouraged by using appropriate geometric designs, traffic control devices, curvilinear alignments, and discontinuous streets. Local streets typically comprise about 65 to 80 percent of the total street system in urban areas.

THOROUGHFARE DEVELOPMENT REQUIREMENTS AND STANDARDS

This section outlines typical criteria for certain characteristics of street and land development, which should be part of a CPAC's thoroughfare development standards and subdivision regulations.

- ◆ **Location and Alignment of Thoroughfares.** The general location and alignment of thoroughfares must be in conformance with the Thoroughfare Plan. Subdivision plats should provide for dedication of needed right-of-way for thoroughfares within or bordering the subdivision. Any major changes in thoroughfare alignment that are inconsistent with the Plan require the approval of the Shawnee Planning Commission, The City of Shawnee, and Pottawatomie County through a public hearing process. A major change would include any proposal that involves the addition or deletion of established thoroughfare designations, or changes in the planned general alignment of thoroughfares that would affect parcels of land beyond the specific tract in question.
- ◆ **Location and Alignment of Collectors.** Generally, to adequately serve their role to collect traffic from local residential streets and distribute it to the arterial street system, collectors should be placed between arterial streets, with a spacing of approximately one-half mile.
- ◆ **Right-of-Way and Pavement Width.** The pavement width and right-of-way width for thoroughfares and other public streets should conform to minimum standards unless a waiver is granted using formalized criteria. Properties proposed for subdivision that include or are bordered by an existing thoroughfare with insufficient right-of-way width should be required to dedicate land to compensate for any right-of-way deficiency of that thoroughfare. When a new thoroughfare extension is proposed to connect with an existing thoroughfare that has narrower right-of-way, a transitional area should be provided.
- ◆ **Continuation and Projection of Streets.** Existing streets in adjacent areas should be continued and, when an adjacent area is undeveloped, the street layout should provide for future projection and continuation of streets into the undeveloped area. In particular, the arrangement of streets in a new subdivision must make provision for continuation of right-of-way for the principal existing streets in adjoining areas – or where new streets will be necessary for future public requirements on adjacent properties that have not yet been subdivided. Where adjacent land is undeveloped, stub streets should include a temporary turnaround to accommodate fire apparatus.
- ◆ **Location of Street Intersections.** New intersections of subdivision streets with existing thoroughfares within or bordering the subdivision should be planned to align with existing intersections, where feasible, to avoid creation of off-set or “jogged” intersections





and to provide for continuity of existing streets, especially Collectors and higher classes of thoroughfares.

- ◆ **Angle of Intersections.** The angle of intersections should be as nearly at a right angle as possible. Corner cutbacks or radii should be required at the acute corner of the right-of-way line, to provide adequate sight distance at intersections.
- ◆ **Offset Intersections.** Offset or “jogged” street intersections should have a minimum separation of 125 feet between the centerlines of the intersecting streets.
- ◆ **Cul-de-sacs.** Through streets and tee-intersections are preferable to cul-de-sacs. Care should be taken so as not to over utilize cul-de-sacs, which limits thru access, restricts pedestrian circulation, increases response times and confuse motorists. However, when cul-de-sacs are used, they should have a maximum length of no more than 600 feet measured from the connecting street centerline to centerline of radius point, with a pave turnaround pad of at least 80 feet and a right-of-way diameter at least 100 feet in residential areas, and at least 180 feet diameter on a street with a 200 foot right-of-way diameter in commercial and industrial areas. A cul-de-sac with an island should have a diameter of no less than 150 feet.
- ◆ **Private Streets.** The Shawnee Planning Commission should not approve a plat containing private streets, including gated communities and possibly manufactured housing communities unless adequate precautions are taken to ensure minimum standards of construction, necessary space for utilities and street widening, sufficient room for maneuvering emergency vehicles and appropriate pedestrian circulation and emergency access.
- ◆ **Sidewalks.** Within the boundaries of a subdivision, sidewalks should be installed on both sides of Arterial, Collector, and Local streets, unless the development occurs in a rural area and will construct an internal trail system.

ACCESS MANAGEMENT

Access management is the coordination between land access and traffic flow along streets in and around Shawnee, with a basic premise to preserve and enhance the performance and safety of the street system. Access management techniques could manage congestion along existing corridors such as Kickapoo, MacArthur, and Harrison Streets and protect the capacity of increasingly used streets such as Bryan Street by controlling access from adjacent development. Properly utilized, it can slow or eliminate the need for street widening or right-of-way acquisition. When widening is necessary, the limited number of access points improves the speed of design and development.

Techniques to accomplish access management include limiting and separating vehicle (and pedestrian) conflict points, reducing locations that require vehicle deceleration, removing vehicle turning movements, creating intersection spacing that facilitates signal progression, and providing on-site ingress and egress capacity. In addition, regulation

focuses on the spacing and design of driveways, street connections, medians and median openings, auxiliary lanes, on-street parking and parking facilities, on-site storage aisles, traffic signals, turn lanes, freeway interchanges, pedestrian and bicycle facilities, and loading zones.

Research indicates that a well-designed and effectively administered access management plan can result in the following tangible benefits:

- ◆ Collision and crash rates are reduced by 40 to 60 percent
- ◆ Roadway capacity and the useful life of transportation facilities is prolonged
- ◆ Travel time and congestion are decreased
- ◆ Better coordination between access and land uses is accomplished
- ◆ Air quality is improved
- ◆ Economic activity is enhanced
- ◆ Urban design and transportation objectives are reconciled
- ◆ The unique character and livability of the community is preserved through the coordination of land use and transportation.

On the other hand, failure to manage access negatively impacts the efficiency of transportation networks in the following ways:

- ◆ More driveways related to strip commercial development
- ◆ Local streets become bypasses for congested streets thereby creating the need to address cut-through traffic in residential neighborhoods
- ◆ More frequent driveway related accidents
- ◆ Vehicle conflicts from closely spaced driveways, which increase congestion thereby reducing capacity
- ◆ Longer travel times that shrink market areas for business
- ◆ More difficulty in providing safe access for new development thereby affecting economic growth
- ◆ Lower cost/benefit ratios of transportation improvements
- ◆ Greater need for wider streets to compensate for lost capacity
- ◆ More cluttered streets and frequent driveways, which create an undesirable environment for pedestrians and bicyclists

The following access management strategies may be used to coordinate the access needs of adjacent land uses with the function of the transportation system:

- ◆ **Intergovernmental Coordination.** Access management in the Shawnee planning area outside of municipal limits will require coordination between The City of Shawnee and Pottawatomie County. However, a more regional strategy involves members of the





Local Tribes as well as ODOT and federal organizations involved in design and construction of roadways. Through coordinated efforts, access management can even further emphasize thoroughfare efficiency.

- ◆ **Separate Conflict Points.** Two common conflict points are driveways and adjacent intersections. Spacing driveways so they are not located within the area of influence of intersections or other driveways is a method to achieve access management objectives.
- ◆ **Restrict Turning Movements at Un-signalized Driveways and Intersections on Multi-Lane Roadways.** Full movement intersections can serve multiple developments through the use of joint driveways or cross-access easements. Turning movements can be restricted by designing accesses to limit movements or by the construction of raised medians that can be used to provide turn lanes.
- ◆ **Establish Design Standards.** Design standards addressing the spacing of access points, driveway dimensions and radii, sight distance, and the length of turn lanes and tapers are effective mechanisms for managing the balance between the movement of traffic and site access.
- ◆ **Locate and Design Traffic Signals to Enhance Traffic Movement.** Interconnecting and spacing traffic signals to enhance the progressive movement of traffic is another strategy for managing mobility needs. Keeping the number of signal phase to a minimum can improve the capacity of a corridor by increasing green bandwidth by 20 seconds.
- ◆ **Remove Turning Vehicles from Through Travel Lanes.** Left and right turn speed change lanes provide for the deceleration of vehicles turning into driveways or other major streets and for the acceleration of vehicles exiting driveways and entering major highways.
- ◆ **Encourage Shared Driveways, Unified Site Plans and Cross Access Easements.** Joint use of driveways reduces the proliferation of driveways and preserves the capacity of major transportation corridors. Such driveway arrangements also encourage sharing of parking and internal circulation among businesses that are close in proximity.

FUNDING SOURCES

Implementation of the Master Thoroughfare Plan or the goals, objectives and actions of the transportation element is not the responsibility of a single entity or agency. Instead, it will require coordination and the combined resources of local, state, and federal transportation funding programs, as well as participation by the private sector. Following are alternative funding sources that are available or could be considered for financing future improvements to the transportation system.

FEDERAL FUNDING

In the past six years many transportation improvements were eligible to receive federal funds as part of the Transportation Efficiency Act of the 21st Century (TEA-21). The six year program, through September 30, 2003, provided federal funding for surface transportation improvements, including roadways, public transportation, pedestrian facilities, and a number of other transportation improvements. TEA-21 emphasized the development of a National Intermodal Transportation System that effectively connects highways with other modes of transportation. Additionally, TEA-21 gave states and local governments a significant amount of flexibility in determining the use of available federal funds. The federal share required for TEA-21 funding is generally 80 percent, with the remaining 20 percent provided by the state or local governments.

Congress will vote on re-authorization of TEA-21, or Safe, Accountable, Flexible and Efficient Transportation Equity Act of 2003, SAFETEA. The new legislation strives to provide improved safety, security, congestion, intermodal connectivity, and timely project delivery. There is a possibility of extending TEA-21 until further SAFETEA action takes place.

Title I – Surface Transportation – This title includes a number of programs and provisions oriented toward providing funding primarily for highway related projects. Some of the key programs within this title include the following:

- ◆ **National Highway System (NHS)** - This program provides funding for improvements to rural and urban roadw that are part of the NHS, including Interstate Highways and designated connections to major intermodal terminals. In certain circumstances, NHS funds may also be used to fund transit improvements in NHS corridors.
- ◆ **Surface Transportation Program (STP) - Federal Hazard Elimination Program** - This program addresses safety-related projects on and off the state highway system. Projects are evaluated using three years of accident data, and ranked by a Safety Improvement Index.
- ◆ **Surface Transportation Program (STP) - Federal Railroad Signal Safety Program** - This program provides for installation of automatic railroad warning devices at most hazardous railroad crossings on and off of the state highway system. Projects are selected from a statewide inventory list, which is prioritized by an index (number of trains per day, train speed, ADT, type of existing warning device, train-involved accidents within prior five (5) years, etc.)
- ◆ **Highway Bridge Replacement and Rehabilitation Program (HBRRP)** - This program provides funds to assist the States in their programs to replace and rehabilitate deficient on-state highway bridges.





- ◆ **Congestion Mitigation and Air Quality Improvement Program** - The primary purpose of the Congestion Mitigation and Air Quality Improvement Program (CMAQ) is to fund projects and programs in air quality and maintenance areas for ozone, carbon monoxide (CO), and small particulate matter (PM-10) which reduce transportation related emissions.
- ◆ **Transportation Enhancements (TE)** - Transportation enhancements are transportation related activities that are designed to strengthen the cultural, aesthetic, and environmental aspects of the Nation's intermodal transportation system. The transportation enhancements program provides for the implementation of a variety of non-traditional projects, with examples ranging from the restoration of historic transportation facilities, to bike and pedestrian facilities, to landscaping and scenic beautification, and to the mitigation of water pollution from highway runoff.
- ◆ **Recreational Trail Program** - This program provides funds to develop and maintain recreational trails for motorized and non-motorized recreational trail users.
- ◆ **Bicycle Transportation and Pedestrian Walkways** - The Bicycle Transportation and Pedestrian Walkways provisions of Section 217 of Title 23, as amended by TEA-21, describe how Federal-aid funds may be used for bicycle and pedestrian projects. These projects are broadly eligible for all of the major funding programs where they compete with other transportation projects for available funding at the State and MPO levels.
- ◆ **Job Access and Reverse Commute Grants** - The Access to Jobs Program provides competitive grants to local governments and non-profit organizations to develop transportation services to connect welfare recipients and low-income persons to employment and support service.

STATE FUNDING

A large part of state funding originates at the federal level in programs as mentioned above. The State Capital Improvement Program, CIP, for 2003 to 2007 is used to prioritize funding with either whole state funds or matched federal transportation funds and are applied to a variety of transportation improvements and maintenance including roadways, bridges, highways, and streets. One example project currently listed on the program is widening and resurfacing of MacArthur Street from US 177 east as well as the utility relocation to accompany the construction.

LOCAL FUNDING

Local support through taxes and bonds supply funds for staff, services, utilities, as well as transportation. While a large portion of funds is allocated to transportation, the cost of improvements and maintenance is very high. The city must divide funds and allocate them to maintenance, improvements, and new construction. Utilizing the thoroughfare plan and CIP for priorities and type of projects will yield

the best solution to growth and reinforcement of the transportation infrastructure.

THOROUGHFARE MASTER PLAN IMPLEMENTATION

Implementation of thoroughfare system improvements occurs in stages over time as development continues and, over many years, builds toward the ultimate thoroughfare system shown in the Thoroughfare Plan for the Shawnee Planning Area. The fact that a future thoroughfare is shown on the Plan does not represent a commitment to a specific time frame for construction, nor will that any of the jurisdictions involved in road construction build the roadway improvement. Individual thoroughfare improvements may be constructed by a variety of implementing agencies, including The City of Shawnee, Pottawatomie County and ODOT, as well as Indian Tribes, private developers, intra-governmental agencies, and land owners for sections of roadways located within or adjacent to their property. Road construction can be implemented by individual entities, such as Pottawatomie County, or in partnership with an entity such as Pottawatomie County.

Each of these entities can utilize the Thoroughfare Plan in making decisions relating to planning, coordination and programming of future development and transportation improvements. Review of preliminary and final plats for proposed subdivisions in accordance with local subdivision regulations should include consideration of compliance with the Master Thoroughfare Plan in order to ensure consistency and availability of sufficient right-of-way for the general roadway alignments shown in the Plan.

It is of particular importance to provide for continuous roadways and through connections between developments to ensure community wide mobility. By identifying thoroughfare locations land owners and developers can consider the roadways in their subdivision planning, dedication of public right-of-way, and provision of setbacks for new buildings, utility lines, and other improvements located along the right-of-way for existing or planned thoroughfares.

PLAN AMENDMENT PROCESS

It will be necessary for the Shawnee Planning Commission to periodically consider and adopt amendments to the Master Thoroughfare Plan to reflect changing conditions and new needs for thoroughfare system improvements and development. A systematic procedure should be followed for making Plan amendments, including a set schedule for annually inviting and considering proposed changes.

The process for amending the Master Thoroughfare Plan should be established by ordinance. Typically, Plan amendment requests may originate from landowners, civic groups, neighborhood associations, developers, other governmental agencies, City staff, and other interested parties. The Shawnee Planning Commission and applicable





members of City or County staff should analyze proposed revisions. The Shawnee Planning Commission should then formally consider the proposed changes and staff recommendations. The Commission should conduct a public hearing on proposed amendments, including required public notice in advance of the hearing. Proposed amendments should be considered in a fair, reasonable, and open process. The burden for proving compelling reasons for the public benefit of any proposed changes should rest with the requesting parties. Decisions and determinations should represent the best interests of the public.

The revised Master Thoroughfare Plan, including any approved Plan amendments, should be adopted by the Shawnee Planning Commission and submitted to the Shawnee City Commission and Pottawatomie County Commission for its consideration. The amended Plan becomes effective upon final adoption.