Chapter 3:
Thoroughfare Plan

MIDWEST CITY, OKLAHOMA

Comprehensive Plan 2008

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Chapter 3

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Introduction

Thoroughfare planning is critical for any city to address in order to meet the needs of its citizens and businesses. Every person and business is directly influenced by a community's ability to effectively accommodate the movement of traffic. Notably, transportation is directly linked to land use. The type of roadway dictates the use of adjacent land, and conversely, the type of land use dictates the size, capacity and flow of the roadway. A prime example of the interrelated nature of land use and transportation within Midwest City is Air Depot Blvd and Douglas Blvd. The high traffic volumes of these roadways have resulted in an abundance of non-residential development along their frontages. Retail and other non-residential land uses usually seek to locate in areas with high traffic volumes, high visibility and accessibility.

Illustration 3-1
SE 29TH STREET

Illustration 3-2
INTERSTATE HIGHWAY 40

Given the strong tradition of planning within the City, this *Thoroughfare Plan* should be viewed as a continuing planning effort that supplements and refines previous recommendations in light of changes that may have occurred since 1985 (the date of adoption of the previous Comprehensive Plan). Clearly, many of the decisions regarding land uses and major roadways within Midwest City have already been made. The alignments of roadways in most areas of the City were established and major roadways were constructed years ago.

Illustration 3-3
DOUGLAS BOULEVARD & NE 23RD STREET

Illustration 3-4
RESIDENTIAL STREET

New challenges for Midwest City now are the accommodation of population growth within the existing thoroughfare system and the expansion of the collector street system to accommodate development and redevelopment. This *Thoroughfare Plan*, which is based on stated goals and objectives within Chapter 2 of this Comprehensive Plan, recommends various ways in which the City can effectively meet these challenges.

Illustration 3-5
MIDWEST BOULEVARD & RENO AVENUE

The Functional Classification System & Related Level of Service

The *Thoroughfare Plan* for Midwest City is based upon a classification system that recognizes that every roadway within the City can be described according to its function. Thoroughfare types, as discussed in the following sections, generally include highways, arterial roadways (primary and secondary arterials), collector roadways, and local streets. The functional classification system concept is not new to Midwest City; this system was referenced within the *Transportation Plan* that was part of the City's 1985 Comprehensive Plan. Functional aspects of the roadway, including mobility and access, generally differentiate these classifications. **Illustration 3-6** graphically depicts these functional differences. As the illustration shows, access decreases as the thoroughfare type changes from local streets to highways, while mobility increases. It also shows that roadways such as arterials and highways that are intended to provide mobility should not be compromised by an abundance of separate access points for land uses. This will be addressed later within this *Thoroughfare Plan*.

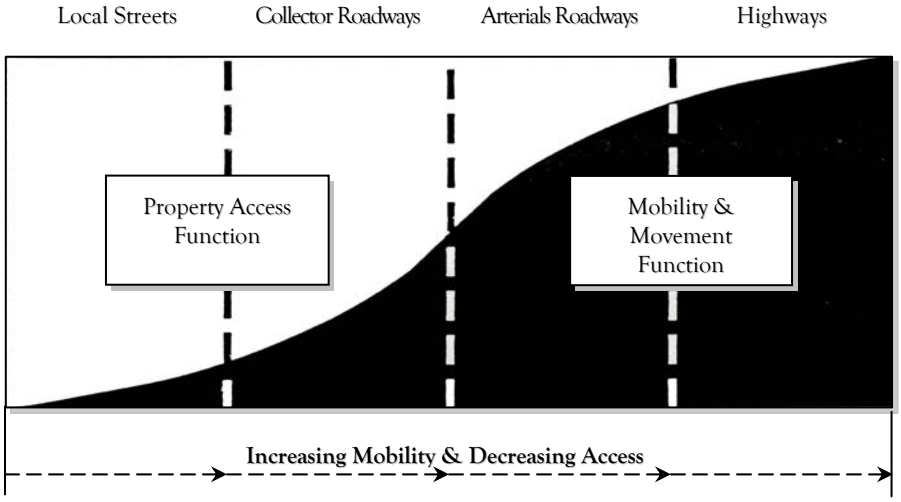


Illustration 3-6
FUNCTIONAL CLASSIFICATION SYSTEM

Level of Service

The phrase "level of service" refers to the level of adequateness with which a roadway (or segment of roadway) is serving the transportation needs of those utilizing it. As **Table 3-1** shows, the descriptions of each level of service relates to how traffic is flowing, maneuverability, and operational problems. Most roadways within the City can generally be described as providing an adequate level of service. However, at certain times of the day some intersections such as SE 15th Street and Midwest City Boulevard become congested. Level of service "C" is considered acceptable in most cities. Generally, level of service "D" is used by municipalities to justify the need for roadway improvements. Most roadways appear to be operating at level of service "C" or better in Midwest City today. The City should ensure that local roadways operate at a level of service "C" or better.

Table 3-1
DEFINITION OF LEVEL OF SERVICE

Level of Service (LOS)	Description	Example
A and B	Light, free-flowing traffic volumes. Virtually no delays with smooth progression of traffic, and speed is generally unaffected by other vehicles. Slight decline in the freedom to maneuver from A to B.	Residential or rural streets
C	Basically satisfactory to good progression of traffic, but at that point where individual drivers become affected by interactions with other vehicles. Light congestion, and speed is affected by the presence of other vehicles.	Urban thoroughfares at off-peak hours
D	High density, but stable, traffic flow. Speed and freedom to maneuver are restricted. Small increases in traffic flow will cause significant operational problems. This LOS is generally used to justify thoroughfare improvements.	Secondary streets at peak hours
E	Operating conditions at or near capacity level. All speeds are reduced to low, but remain relatively uniform, meaning generally not stop-and-go. Operations at this level are usually unstable, because small increases will cause severe speed reductions.	Primary streets at peak hours
F	Forced flow. Heavy congestion. Total breakdown with stop-and-go operation. Queues (i.e., vehicle stacking) at intersections on these lengths may exceed 100 vehicles.	Developed areas in larger cities at the A.M. or P.M. peak hours

Source: Sefko Planning Group

Mobility & Access Regionally & Locally

The Regional Transportation System

As discussed in the *Baseline Analysis*, Midwest City and the surrounding area (i.e., Tinker AFB) represent critical components to the region. Therefore, regional transportation facilities are important to the economy and to economic development, both locally and regionally. The following facilities have been identified as important regional thoroughfares:

- Interstate Highway 40,
- U.S. Highway 62 (NE 23rd Street),
- Reno Avenue, and
- Sooner Road.

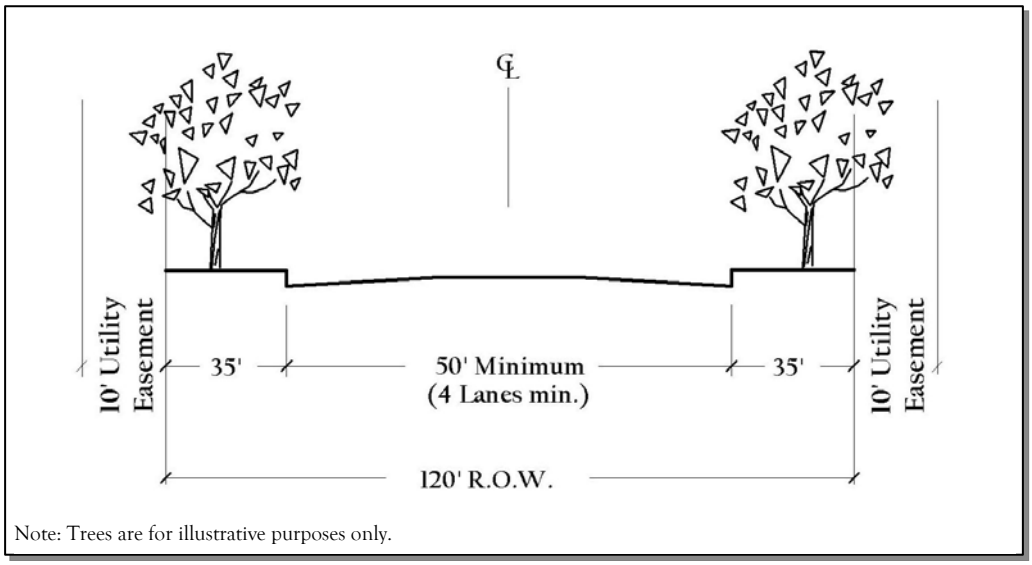
Only Interstate Highway 40 is shown as a highway on the *Thoroughfare Plan Map* **(Plate 3-1)** due primarily to roadway size and/or function. Highways are defined as high-capacity thoroughfares along which direct access to property is generally minimal or eliminated altogether, with ingress and egress controlled by access ramps, interchanges and frontage roads. U.S. Highway 62 (NE 23rd Street), though it is technically called a "highway," actually functions as a primary arterial. Reno Avenue is a primary arterial serving Midwest City but is also a direct route into downtown Oklahoma City. Lastly, Sooner Road is also a primary arterial and connects the City with various locations to the north and south.

The Local Transportation System

The following sections contain roadway cross-sections for the applicable types of thoroughfares shown on the *Thoroughfare Plan Map*, **Plate 3-1**. The cross-sections are intended to help the City provide for adequate mobility along high-traffic roadways, while also providing for access to local land uses. These cross-sections are generally consistent with the City's current requirements for roadway widths within the adopted Subdivision Ordinance and 1985 Comprehensive Plan. However, two new cross-sections with raised medians have been recommended which will be applicable in certain areas of the City. The *Thoroughfare Plan Map* shows the existing roadways and future recommended roadways according to the hierarchical system defined herein.

Primary Arterial

The required right-of-way for a primary arterial is shown within **Illustration 3-7**. At 120 feet of right-of-way, this is the largest roadway section for the City and it maintains the existing requirement found with the Subdivision Ordinance and 1985 Comprehensive Plan. Additionally, 10-foot utility easements are shown on each side of the right-of-way. Examples of primary arterials are found on **Plate 3-1,** the *Thoroughfare Plan Map*, and include roadways such as Sooner Road, Douglas Boulevard, NE 23rd Street (Highway 62), sections of Reno Avenue, and SE 29th Street.



Note: Trees are for illustrative purposes only.

Illustration 3-7
PRIMARY ARTERIAL

Primary Divided Arterial

The primary divided arterial roadway is one of the two new roadway sections to be recommended with this *Thoroughfare Plan*. In general, the purpose of the primary divided arterial roadway is to add a raised median to the existing primary arterials to achieve the following:

(1) Increase motorist safety (e.g., lower the risk of head-on collisions),
(2) Reduce traffic congestion by reducing the areas of a roadway where motorist are allowed to make left turns, and
(3) Offer opportunities to improve the image of the roadway and City with landscaping in the median (e.g., trees).

The recommended right-of-way for a primary divided arterial roadway is shown within **Illustration 3-8**. At 120 feet of right-of-way, this recommendation is consistent with the City's previously mentioned primary arterial requirement, with the addition of 10-foot utility easements on each side of the right-of way to provide a suitable location to place utilities. However, more minimum paving is required for this roadway. The two roadways proposed to be primary divided arterials are Douglas Boulevard (between SE 15th Street and NE 10th Street), and Reno Avenue (between Sooner Road and Douglas Boulevard).

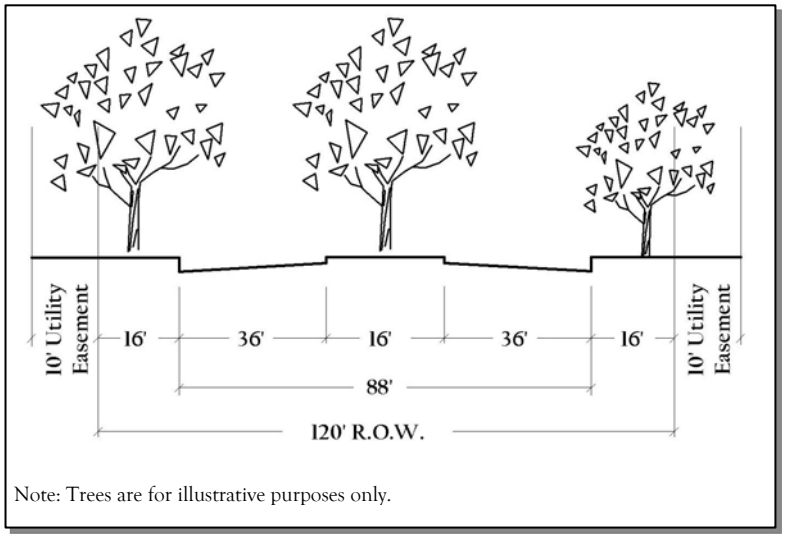
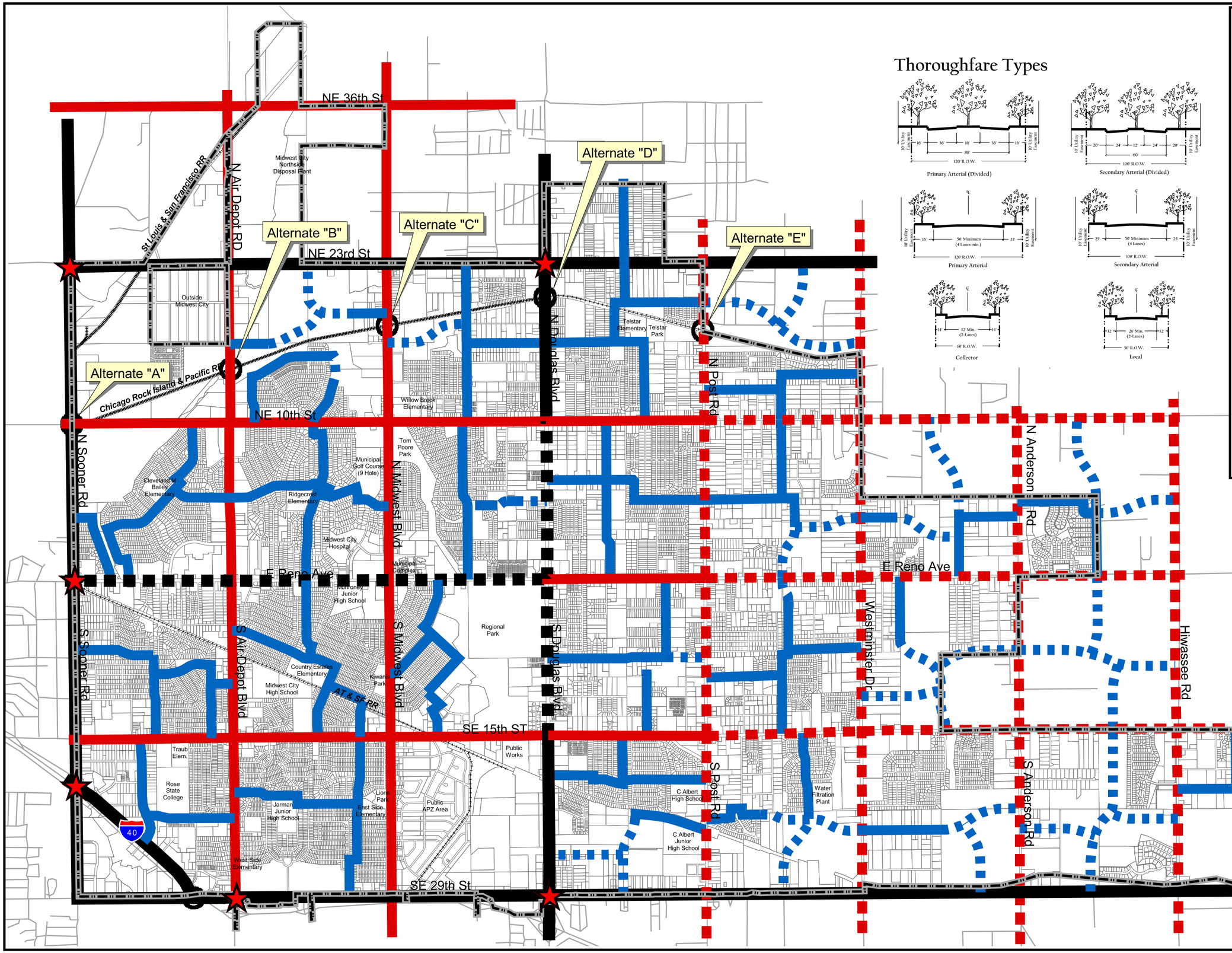


Illustration 3-8
PRIMARY DIVIDED ARTERIAL

Plate 3-1 Preliminary Thoroughfare Plan

Midwest City, Oklahoma



Thoroughfare Types

- Primary Arterial (Divided)
- Primary Arterial
- Secondary Arterial (Divided)
- Secondary Arterial
- Existing Collector
- Proposed Collector
- Grade Separated Interchange
- Gateways
- Midwest City Limits

N W E S

2000 0 2000 4000 Feet

Freese and Nichols — Serfko Planning Group — Urban Planning Consultants - Dallas, Texas

Date: July 8, 2008

Secondary Arterial

The secondary arterial serves the purpose of providing for major traffic movement, but is not intended to be as significant in terms of traffic flow (mobility) as a primary arterial. The required right-of-way for a secondary arterial is shown within **Illustration 3-9**. At 100 feet of right-of-way and a minimum 50 feet of paving, this recommendation is consistent with the City's current requirements. Additionally, 10-foot utility easements are shown on each side of the right-of-way. Examples of secondary arterials include Air Depot Boulevard, Midwest Boulevard, and sections of NE 10th Street and SE 15th Street.

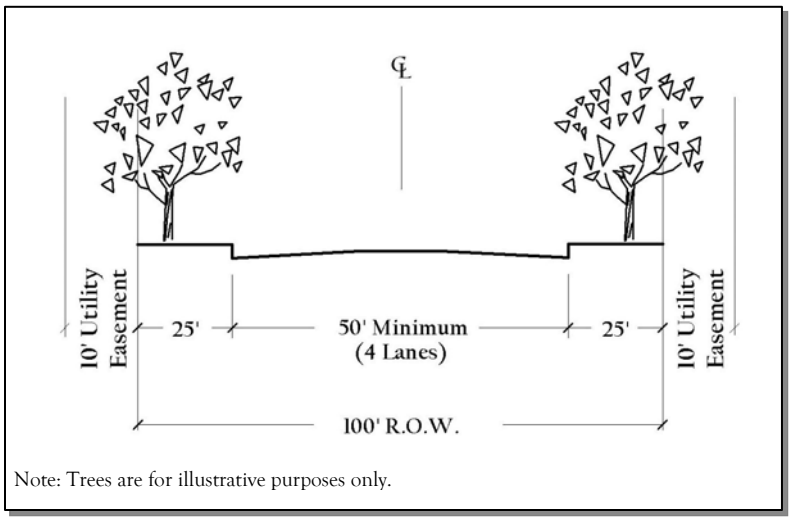


Illustration 3-9
SECONDARY ARTERIAL

Secondary Divided Arterial

The secondary divided arterial roadway is the second of the two new roadway sections to be recommended with this *Thoroughfare Plan*. In general, the purpose of the secondary divided arterial roadway is to add a raised median to the existing secondary arterial roadway sections. The benefits of including a median in arterial construction have been previously mentioned in the primary divided arterial discussion.

Illustration 3-10
MEDIAN ALONG AIR DEPOT BOULEVARD
(Between NE 10th Street & Reno Avenue)

The recommended right-of-way for a secondary divided arterial roadway is shown within **Illustration 3-11**. At 100 feet of right-of-way, this recommendation is the same as the City's current secondary arterial requirement found with the Subdivision Ordinance, within the addition of a 10-foot utility easement on each side of the right-of way to provide a suitable location to place utilities. The roadways proposed to be secondary divided arterials are Air Depot Boulevard (between NE 10th Street and Reno Avenue), Post Road, Westminster Drive, Anderson Road, Hiawassee Road, SE 15th Street (east of Post Road), Reno Avenue (east of Post Road), and NE 10th Street (east of Post Road). Generally, roadways in the eastern section of the City are good candidates to become secondary divided arterials due to the fact that most of these roads have not yet been improved.

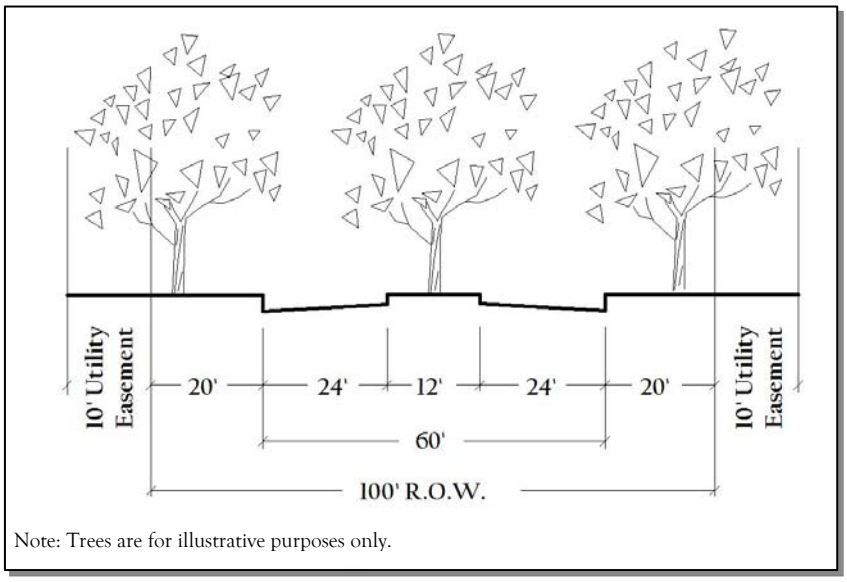


Illustration 3-11
SECONDARY DIVIDED ARTERIAL

Collector Streets

Collector streets are generally designed to distribute traffic from local access streets and funnel it to major roadways (i.e., from residential, commercial, and industrial developments). Collectors should provide more access to adjacent land uses than do arterials, but access should still be controlled through the use of cross-access points and shared driveways (refer to access control standards, found later in the chapter) and other techniques that minimize disturbance of the free-flow of traffic. This type of roadway should provide an equal amount of mobility and access to land uses. Neighborhoods should be developed between major thoroughfares and collector streets in the future so that traffic may be diverted from residential areas.

The recommended right-of-way for a collector street is shown within **Illustration 3-12**. At 60 feet of right-of-way and a minimum of 32 feet of paving, this recommendation is consistent with the City's current collector street classification found within the Subdivision Ordinance and 1985 Comprehensive Plan. The proposed collectors are show on the *Thoroughfare Plan Map*, **Plate 3-1**.

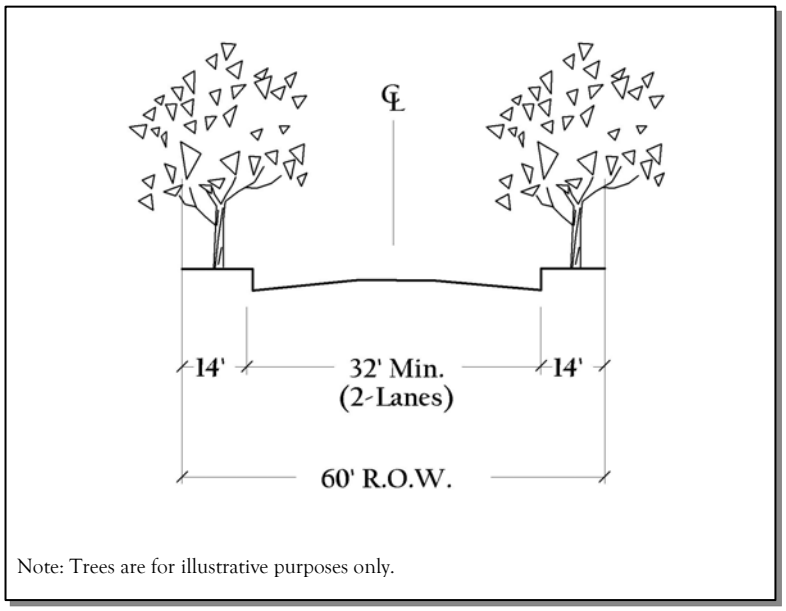


Illustration 3-12
COLLECTOR STREET

Local Streets

The local street section, shown in **Illustration 3-13**, is structured to convey a light traffic volume and has a total right-of-way of 50 feet with a minimum of 26 feet of paving, which is consistent with the City's existing regulations. It should be noted that no roadways of this type have been shown on the *Thoroughfare Plan Map*, **Plate 3-1**. This is primarily due to the fact that these roadways are typically interior roadways within residential developments and as such they will have to be located as applicable as development proposals are submitted.

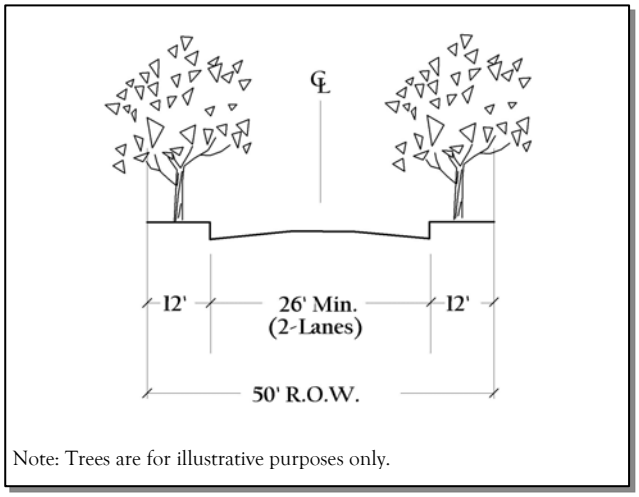


Illustration 3-13
LOCAL STREET

Summary of Roadway Types

The following is a summary the minimum standards for the roadway types discussed in this chapter.

Table 3-2
SUMMARY OF MINIMUM ROADWAY STANDARDS

Roadway Type		Right-of-Way	Street Width	Traffic Lanes	Median	Additional Utility Easements*
Major Streets	Primary Arterial	120 ft.	50 ft.	4	None	2 @ 10 ft.
	Primary Arterial - Divided	120 ft.	88 ft	6	Raised - 16 ft.	2 @ 10 ft.
	Secondary Arterial	100 ft.	50 ft.	4	None	2 @ 10 ft.
	Secondary Arterial - Divided	100 ft.	60 ft.	4	Raised - 12 ft.	2 @ 10 ft.
Minor Streets	Collector	60 ft.	32 ft.	2	None	None
	Local	50 ft.	26 ft.	2	None	None

* In addition to the Right-of-Way

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Meeting the Current & Future Needs of the City

A number of issues must be considered in the process of updating the *Thoroughfare Plan* for Midwest City. First, the Plan must be compatible with the City's *Future Land Use Plan* (Chapter 4) and related growth and development considerations. Second, it must address the integrity of existing residential and non-residential areas; the Plan must balance functions of the thoroughfare system through efficient moving of traffic and facilitate access requirements. It must consider alignments and right-of-way issues for existing and any new roadways. Finally, the *Thoroughfare Plan* must also incorporate realistic recommendations within the context of budgeting constraints. The following discussion addresses these issues.

Compatibility with the Future Land Use Plan

Land use and roadway planning are closely linked; just as inappropriate land uses can reduce the effectiveness of adjacent roadways, poorly planned roadways and lack of access control standards (discussed later in this section) can reduce the viability of adjacent land uses. Inappropriate zoning, various types of development activity, the existence of older roadways that now carry higher traffic volumes than originally intended and continually changing traffic patterns can all have impacts on the City's thoroughfare system. An access management program for arterial streets and collector streets will promote a smoother flow of traffic and minimize the cumulative impacts of individual developments on the function of these roads. The different mobility and access needs of residential and non-residential land uses are recognized within the *Future Land Use Plan*, and have resulted in the various land use location recommendations therein.

Existing Residential and Non-residential Land Uses

The thoroughfare system as it exists today in Midwest City has evolved over decades. Many areas of the City have been previously developed with rights-of-way and land uses firmly in place. Therefore, opportunities for improving traffic flow and access in such areas will mainly be the product of access management

and street maintenance and widening, wherever possible. It is not the intent of this *Thoroughfare Plan* to endorse the displacement of existing businesses or residences unless no other alternative exists. Existing roadways should generally only be widened to the widths recommended herein wherever existing rights-of-way allow.

Funding Thoroughfare System Improvements

In addition, maintaining an efficient thoroughfare system requires significant investment of local resources. Careful planning is needed to ensure that Midwest City makes the most cost-effective investments in its street network. Funding is usually based upon general obligation bonds or the general fund budgeting process. Since 2001, the City has approved $15,000,000 in general obligations bonds of which over half have been used for street improvements or reconstruction. The City should continue to coordinate with regional transportation-related agencies, such as the Oklahoma Department of Transportation (ODOT), Association of Central Oklahoma Governments (ACOG), and Oklahoma County in order to maximize the potential for shared financing. Consistent participation in ACOG planning efforts may also help Midwest City foster relationships that would ultimately help with funding improvements.

Medians

This *Thoroughfare Plan* includes the recommendation to provide medians within selected roadways. Medians have proven to improve motorist safety, protect the integrity or flow of traffic on the roadway, and provide opportunities for landscaping and beautification efforts. Two new cross-sections, a primary divided arterial and a secondary divided arterial with raised medians have, been developed. The benefits of raised medians can be seen on Air Depot Boulevard and Reno Avenue, where raised medians exist today. These new cross-sections use the City's existing cross-sections established within the Subdivision Ordinance, but with the addition of medians and slightly different spacing standards. The sections of roadways with medians are shown on the *Thoroughfare Plan Map*, **Plate 3-1**. These cross-sections also include 10-foot utility easements on each side of the right-of-way.

Illustration 3-14
MEDIAN EXAMPLE

Gateways

The image or visual appeal of Midwest City at key entrances into the City can help communicate a positive community environment in which all citizens can take pride. Gateway features at several locations have been recommended in order to improve the City's visual appeal, see **Plate 3-1** (the *Thoroughfare Plan Map*). At two recommended locations, gateway features already exist. Therefore, continued maintenance, additional improvements, or new and more prominent features should be considered for these locations. The exact method or design of the gateway features should be researched by the City and should include a review of different gateway treatment options (e.g., size, color, materials, etc.). The gateway concept will be addressed in further detail within *Image and Design* chapter (Chapter 5).

The following **Illustrations 3-15** through **3-20** depict examples of gateways.

Illustration 3-15
GATEWAY FEATURE

Illustration 3-16
GATEWAY FEATURE

Illustration 3-17
GATEWAY FEATURE

Illustration 3-18
GATEWAY FEATURE

Illustration 3-19
GATEWAY FEATURE

Illustration 3-20
GATEWAY FEATURE

Grade Separated Railroad Crossings

At least one additional roadway grade separation should be considered along the Chicago Rock Island and Pacific rail line, which is located in the northern section of the City. The intent of this recommendation is to improve emergency access north of the rail line. **Plate 3-1**, the *Thoroughfare Plan Map*, lists five alternatives (Alternatives A through E) for grade separations. Although a grade separation crossing is not an immediate concern, a review should be conducted to determine the feasibly, importance, and priority of construction.

Preserving Future Transit Options (Light Rail)

One of the City's goals (from the *Goals and Objectives* in Chapter 2) is to *promote the City's involvement in the quality, well-planned development of the Central Oklahoma region*. In a cooperative effort to plan for regional mobility, it is recommended that the City preserve the Atchison, Topeka, and Santa Fe rail line easement, which is not currently in use, for use in a future regional rail transportation system. Part of this rail line easement (east of Tinker AFB) has already been sold; therefore, the rights to the remaining portion of the line should not be sold in order to preserve the City's future rail options.

Illustration 3-21
ATCHISON, TOPEKA, AND SANTA FE RAIL LINE
(This Rail Line is not in Use)

As mentioned in Chapter 1, the Atchison, Topeka, and Santa Fe rail line has one terminus north of Tinker Air Force Base (AFB) and the other terminus in downtown Oklahoma City's Bricktown area. While there are no immediate plans for light rail service, this line could function as a future critical link between Tinker AFB, Midwest City, and Oklahoma City if a light rail system does develop. Therefore, the City possesses a strategic advantage with this abandoned rail line and should preserve it for possible future development as a transportation route. Furthermore, while the City is preserving this abandoned rail line, it should utilize the rail line as a trail for pedestrians, bicyclists, and other

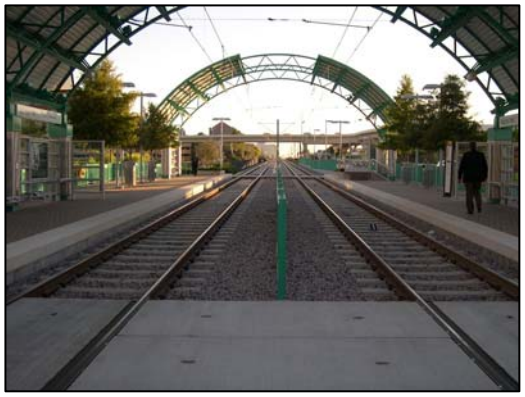


Illustration 3-22
EXAMPLE OF ADAPTING AN ABANDONED RAIL LINE TO SERVE AS A LIGHT RAIL LINE (Dallas, Texas Region)

recreational users. This trail would help promote a multi-modal environment for the City and serve as substantial park and recreational asset (refer to Rails-with-Trails concept within Chapter 7 for additional information.)

Abandoned freight rail lines throughout the country have served as excellent opportunities to provide light rail service. One of the closest examples may be found in the Dallas, Texas region. The mass transit authority in Dallas (The Dallas Area Rapid Transit – DART) purchased or had dedicated to it abandoned rail lines that were reconstructed and now function as light rail lines. These old lines, being built before most development occurred, also have the benefit of connecting portions of the region without having to acquire new rights-of-way or condemning any properties and are often in strategic locations.

Several factors and trends indicate that alternatives to automobile-oriented transportation policies may be appropriate for Midwest City and the surrounding Oklahoma City Region. For example, the increasing cost of oil (i.e., gas) and rising cost of automobile ownership are influencing people's driving habits. In a poll conducted by CBS News in August 2005, "when asked specifically whether they have done various things as a result of higher gas prices" 70 percent of Americans responded that they are driving less.[1] This tendency may indicate that people would be willing to seek alternative methods of transportation. These factors and trends begin to provide a foundation for Midwest City and the Oklahoma City Region to consider possible alternatives, such as light rail, to standard automobile-oriented policies (i.e., road development).

Illustration 3-23
EXAMPLE OF ADAPTING AN ABANDONED RAIL LINE TO SERVE AS A LIGHT RAIL LINE (Dallas, Texas Region)

A Transportation Platform Location Study has already been conducted for the City. This report, completed in February 2003, details the possible locations for light rail stops within Midwest City. Notably, the highest scoring site for a rail station would be within the Downtown Redevelopment Project.

New Collector Streets

Although few, if any, new arterial routes will be necessary (street widening, however, will be), the City's street system (refer to the *Thoroughfare Plan Map*, **Plate 3-1**) will include new as well as existing collector streets. The 1985 Comprehensive Plan's *Thoroughfare Plan* has been revised to show fewer existing

[1] CBS News; "Poll: Gas Prices Affecting Habits," (3 percent margin of error) Accessed Oct 2005; Address: http://www.cbsnews.com/stories/2005/09/01/opinion/polls/main812533.shtml

streets designated as collector streets. New collector streets will be needed, primarily in the eastern half of the City. As new subdivisions are considered, the City should make certain that new collector streets are provided as shown on the *Thoroughfare Plan Map*, **Plate 3-1**. Although the locations shown on the map are approximate, it will be important to provide a connection from the arterial streets to the interior of the square-mile grid. This practice will eventually yield less residential driveways along arterial roadways and will provide an improved flow of traffic along the arterial roadways.

Safety Improvements along I-40 and Coordination with Tinker AFB and the State of Oklahoma

Tinker AFB, the State of Oklahoma, and Midwest City depend on Interstate Highway 40 (I-40) to transport a significant volume of traffic. The safety of people traveling along this highway is of prime importance to all three entities; therefore, a cooperative effort should be taken to improve the safety along this roadway. First, during the comprehensive planning process, it was stated during a workshop that lighting along I-40 was poor and that the variations in the slope of the roadway tend to lead to accidents (especially in the westbound direction). Second, due to increased military security measures, the time it takes for vehicles to enter Tinker AFB has increased. This situation has created situations where a line of vehicles waiting to enter the base has extended onto I-40. However, the base has made modifications to remedy this issue. Third, there are some visibility problems concerning landscaping at certain on and off ramps. Consequently, the City should investigate and seek to remedy any hazardous situations along the on and off ramps. It is the recommendation of this *Thoroughfare Plan* that Midwest City, Tinker AFB, and the State of Oklahoma work collaboratively to address these and other safety issues along Interstate Highway 40.

Curbs[2]

Curbing is used to control drainage, protect pavement edges, and protect sidewalks and lawns from encroachment by vehicles. Curbs come in two general categories: vertical and sloping. Each kind of curb has many specific design variations and the major difference between vertical and sloping curbs is whether they restrain vehicle access (vertical curbs) or permit vehicle access (sloping curbs). Midwest City primarily uses vertical curbs in most instances. It is recommended that the City require curbs in all new subdivisions.

[2] Text in this section is an excerpt from: National Association of Home Builders, American Society of Civil Engineers, Institute of Transportation Engineers, and Urban Land Institute. *Residential Streets*, Third Edition. Washington, D.C.: ULI – the Urban Land Institute, 2001. (pages 46-49)

Vertical Curbs

Ranging from six to eight inches in height and having steep sides, vertical curbs are relatively high and are designed to discourage vehicles from leaving the roadway (**Illustrations 3-24** and **3-25**). Vertical curbs should be placed at least one foot and preferably two feet from the edge of the travel way. Among the advantages of vertical curbs are the following:

- They better protect pedestrians, street trees, utilities, and signs.
- They establish a positive limit of vehicle encroachment on the border area, minimizing parkway erosion and reducing the probability of vehicles sliding off the roadway under unfavorable pavement and weather conditions.
- They provide excellent drainage control.
- They are better able to control parked vehicles that on their own start to roll (runaways).

Illustration 3-24
VERTICAL CURB

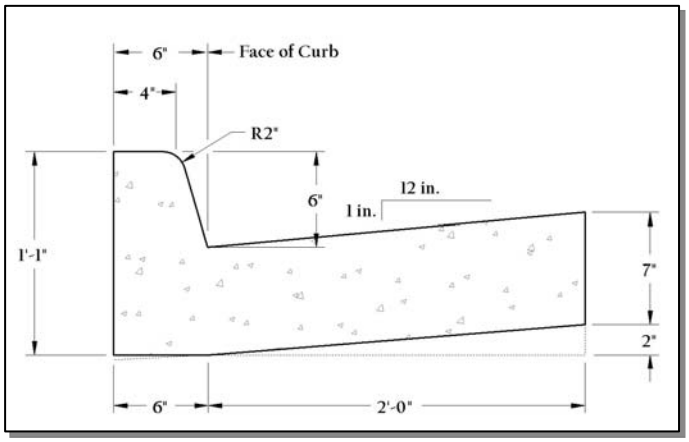


Illustration 3-25
VERTICAL CURB EXAMPLE DIAGRAM

Sloping Curbs

Sloping curbs are designed so that vehicles can cross over them if necessary **(Illustrations 3-26, 3-27, 3-28** and **3-29)**. Among the advantages of the sloping curbs are the following:

- They allow subdividers and developers to undertake driveway construction without curb depression. Since driveway locations do not have to be determined before curb installation, developers enjoy some flexibility in the timing and location of driveway construction.
- They can accommodate off-pavement parallel parking.

Illustration 3-26
SLOPING CURB

Illustration 3-27
SLOPING CURB

Sloping curbs that adjoin driveways should be concrete and must be designed so that the angle and height of the curb permit the passage of cars over the curb without causing the bottom of the car to scrape on the curb.

Illustration 3-28
RIBBON CURB (A Type of Sloping Curb)

It is recommended that the City consider allowing sloping curbs to be developed under a planned unit development (PUD). Sloping curbs are suitable for only single-family residential subdivisions that are less than five acres and for large rural lot estate developments.

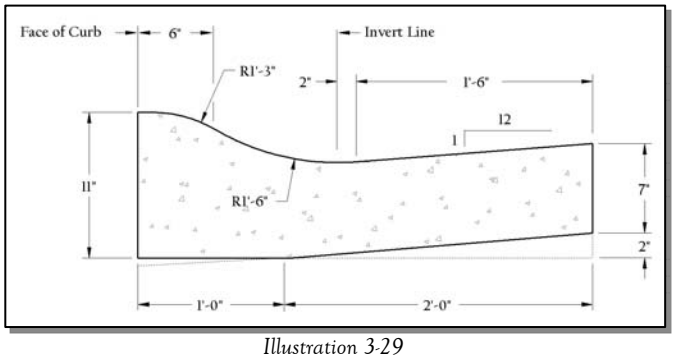


Illustration 3-29
SLOPING CURB EXAMPLE DIAGRAM

Access Control Standards

A limited number of intersections and driveway openings (curb cuts) should be permitted along major roadways in order to protect the integrity of the traffic flow. Shared driveways and cross-access should be promoted along arterial and collector roadways. The City has numerous existing driveways (both residential and non-residential) along its roadways, which can constrict the flow of traffic. While these driveways would remain in place, new development should incorporate the use of shared driveways and cross-access as seen in **Illustrations 3-30, 3-31** and **3-32**. Therefore, access to properties along arterials and collectors should be based on access management criteria. Criteria should be developed for arterial and collector streets that address these issues. These access management standards can be amended into the City's Subdivision Ordinance or a separate ordinance. Specifically, a listing of arterial and collector streets should be created and studied to establish the appropriate access control standards. **Table 3-3** and **Illustration 3-33**, on the following page, establish some basic driveway dimension guidelines.

Illustration 3-30
EXAMPLE OF A SHARED DRIVEWAY BETWEEN TWO NON-RESIDENTIAL USES

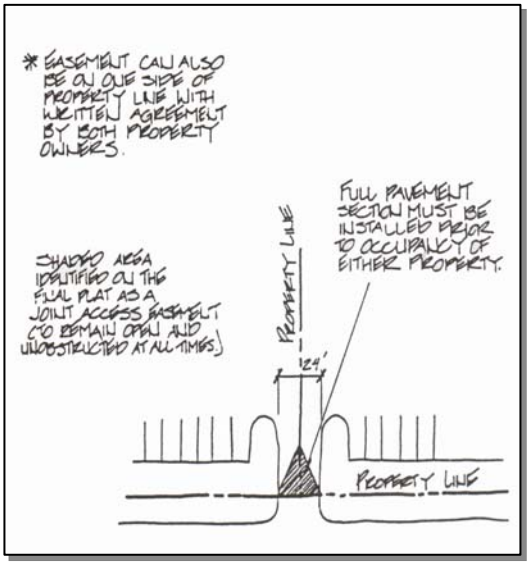


Illustration 3-31
JOINT PROPERTY OPENINGS FOR NON-RESIDENTIAL SITES

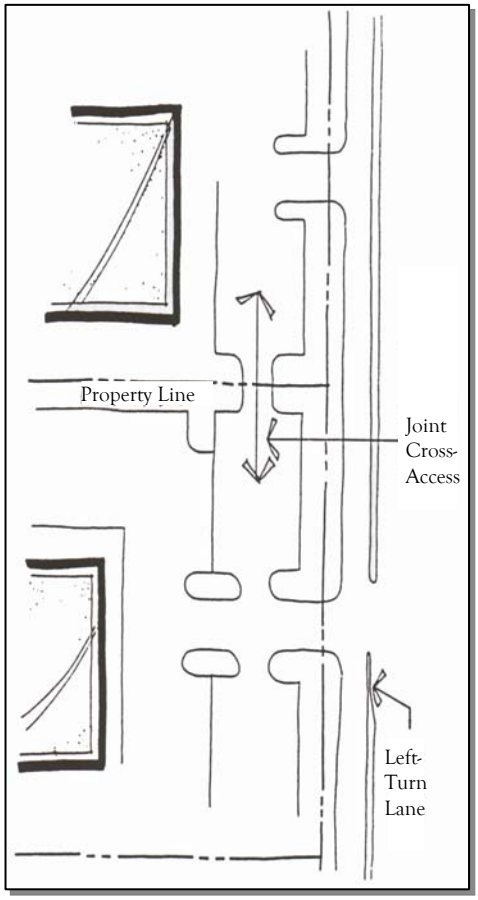


Illustration 3-32
CROSS-ACCESS

Table 3-3
RECOMMENDED BASIC DRIVEWAY DIMENSION GUIDELINES

	Dimension Reference	Residential	Commercial	Industrial
Nominal Width [1]	W			
one-way		10	15	20
two-way		10	30	40
Right turn radius or flare [2]	R			
Minimum		5	15	20
Minimum spacing [3]				
From property line	P	0	0	-R
From street corner	C	5	10	10
Between driveways	S	3	3	10
Minimum Angle [4]	A	45°	45°	45°

1.0 ft = 0.3m

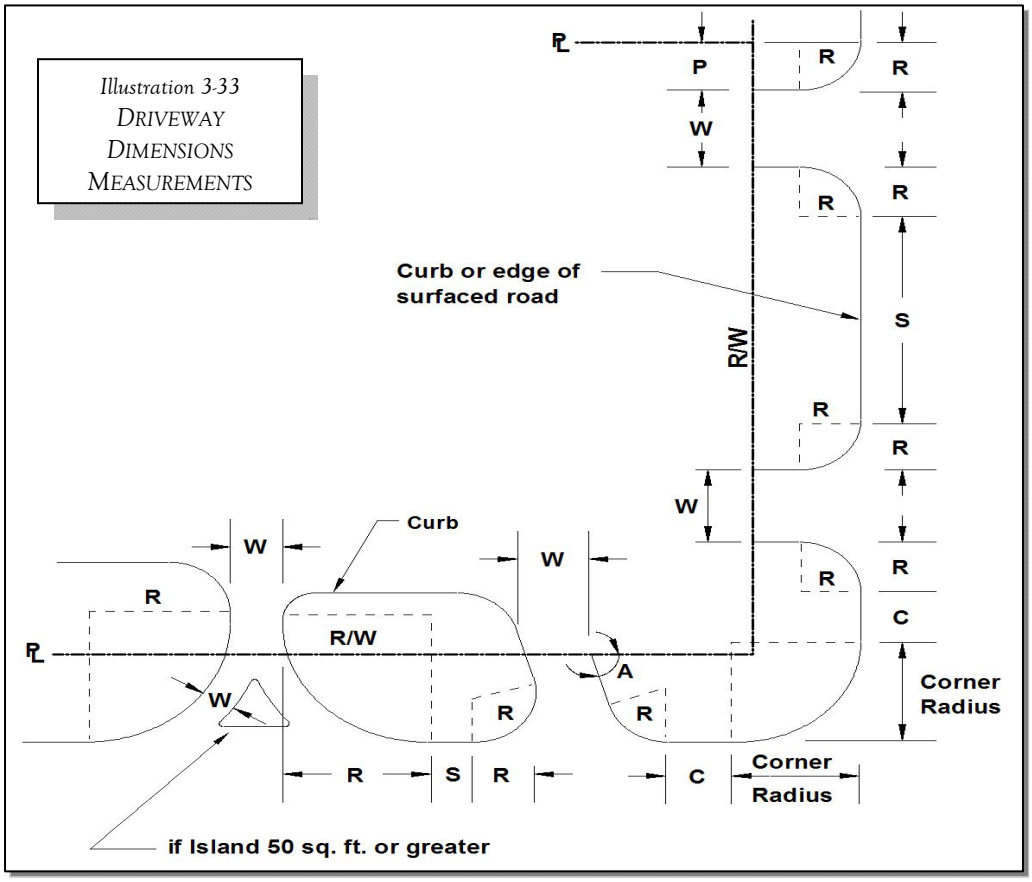
[1]Residential driveway widths typically should not exceed about 24 feet (7 m). Commercial driveway widths may vary from about 24 feet for low volume activity (providing that 20 foot radii are use), to a maximum of 36 feet (11 m) for undivided design, higher volume activity. A 36 foot (11 m) driveway is usually marked with two exit lanes of 10 to 11 foot (3 m) width, with the balance used for a single, wide entry lane. Industrial driveway widths should not exceed 50 feet (17 m).

[2]On the side of a driveway exposed to entry or exit by right turning vehicles. The radii for major generator should be much higher than the values shown.

[3]Measured along the curb or edge of pavement from the roadway end of the curb radius or flare, except for conditions. For individual properties, a suggested limitation on the number of driveways is: 1 for 0-50 foot (0-15 m) frontage, 2 for 51-150 foot (16-50 m) frontage, 3 for 151-500 foot (51-150 m) frontage, and a 4 for over 500 (over 150 m) frontage.

[4]Minimum acute angle measured from edge of pavement, and generally based on one-way operation. For two-way driveways and in high pedestrian activity areas, the minimum angle should be 70 degrees.

Illustration 3-33
DRIVEWAY DIMENSIONS MEASUREMENTS



Coordination with Regional Plans: OCARTS

The Oklahoma City Area Regional Transportation Study (OCARTS) is a plan required by the Federal Government's Transportation Equity Act for the 21st Century (TEA-21). In order to receive funding for transportation infrastructure, TEA-21 requires that a region, such as the Oklahoma City region, perform short-range and long-range transportation planning. The OCARTS plan reviews past trends, population and employment forecasts, and future travel patterns and conditions to address transportation demands and needs.

Cities, counties, and other government agencies, such as the Oklahoma Department of Transportation (ODOT) work collaboratively to form the OCARTS plan. Notably, one of the main agencies responsible for overseeing the OCARTS plan is the Association of Central Oklahoma Governments (ACOG). The roadways within this *Thoroughfare Plan* conform to those established in the 2030 OCARTS Plan. In addition, the City should provide ACOG with the updated City *Thoroughfare Plan Map* **(Plate 3-1)** for inclusion in any future update.

Thoroughfare Planning and the Development Process

Through careful planning of neighborhood areas, and with the cooperation of developers, the recommended arterial and collector roadway circulation systems can be implemented. Attaining the levels of transportation efficiency and effectiveness envisioned by the *Thoroughfare Plan* will require the cooperation among both public and private entities. The City's thoroughfare planning needs should be incorporated into the subdivision platting process provisions for the attainment of rights-of-way. The City may also want to consider developing participation policies for roadway construction.

Roadway Landscaping with the Clear Zone and Utilities

Landscaping shall meet the requirements of Chapter 42 of the Midwest City Code and the current Midwest City Landscape Plan (e.g., 2006/2007 Landscape Plan). For safety reasons, a clear zone has been established to prohibit landscaping in areas close to the edge of the curb or near fireplugs. Additionally, the location of landscaping is limited due to the location of utilities. Additionally, the City may need to update landscaping standards regarding allowable tree species (e.g., approved tree species list) to accommodate tree hardiness and required setbacks / distances.

In Conclusion

Implementation of the *Thoroughfare Plan* will require consistent administration by the City. It is not suggested that the City needs new major thoroughfares but continued street widening and reconstruction is appropriate, as the present system will be adequate for the near term. As development occurs, rights-of-way should be secured for widening of new roads. Design and technical standards should continue to be contained within the City's adopted Subdivision Ordinance and should be consistently reviewed to ensure that such practices are uniform in terms of required size of rights-of-way and access controls along rights-of-way. Midwest City's recommended *Thoroughfare Plan* recommendations are summarized within **Table 3-4**.

Table 3-4
THOROUGHFARE PLAN RECOMMENDATIONS
Midwest City, Oklahoma

Intersections and Curb Cuts A limited number of intersections and curb cuts (driveway openings) should be permitted along major roadways in order to protect the integrity of the traffic flow.
Right-of-Way Alignment The City should require right-of-way alignment and dedication of all roadways in accordance with *Thoroughfare Plan Map*, **Plate 3-1**.
Access Management Access to properties along arterials and collector streets should be based on access management criteria.
Level of Service Ensure that local roadways and intersections are operating at a level of service "C" or better (refer to **Table 3-1**).
Regional Transportation Continue to be aware of and involved in any regional transportation plans by ACOG (Association of Central Oklahoma Governments) and OCARTS (Oklahoma City Area Regional Transportation Study); ensure that such regional plans acknowledge Midwest City's needs and that they are reflected in localized transportation planning efforts.
Gateway Locations Gateway feature locations, see the *Thoroughfare Plan Map* (**Plate 3-1**), have been recommended to improve the City's major entrances.

Table 3-4 (Continued)
THOROUGHFARE PLAN RECOMMENDATIONS
Midwest City, Oklahoma

Cross-sections Maintain the City's existing cross-sections with easements as indicated.
Cross-sections Two new cross-sections with raised medians are recommended to achieve the following: (1) increase motorist safety (e.g., lower the risk of head-on collisions), (2) reduce traffic congestion by reducing the areas of a roadway where motorist are allowed to make left turns, and (3) offer opportunities to improve the image of the roadway and City with landscaping in the median (e.g., trees).
Grade Separation One new roadway grade separation should be considered along the Chicago Rock Island and Pacific rail line to improve the safety of motorists.
Plan Intent It is not the intent of this *Thoroughfare Plan* to endorse the displacement of existing businesses or residences; existing roadways should generally only be widened to the widths recommended herein wherever existing rights-of-way allow.
Light Rail Transportation In a cooperative effort to plan for regional mobility, it is recommended that the City preserve the Atchison, Topeka, and Santa Fe rail line, which is not currently in service, for use in a regional rail transportation system.
Coordinate Efforts The City should coordinate efforts with regional transportation-related agencies, such as the Oklahoma Department of Transportation (ODOT) and Association of Central Oklahoma Governments (ACOG), in order to maximize the potential for shared financing.
Curbs Curbs shall be required in all new subdivisions. Sloping curbs may be permitted on a case-by-case basis. Generally, smaller developments, less than five acres, or large rural estates should be considered for this type of curb.
Interstate Highway 40 A cooperative effort should be taken between Tinker AFB, the State of Oklahoma and Midwest City in all efforts to improve the safety of Interstate Highway 40.
Roadway Landscaping with the Clear Zone and Utilities Landscaping shall meet the requirements of Chapter 42 of the Midwest City Code and the current Midwest City Landscape Plan. Additionally, the City may need to update landscaping standards regarding allowable tree species (e.g., approved tree species list) to accommodate tree hardiness and required setbacks / distances.
Note: Not in any order of priority. *Source:* City of Midwest City's *Thoroughfare Plan*.