

Section 4

THOROUGHFARE PLAN

City of Lancaster Comprehensive Plan

THOROUGHFARE PLAN

INTRODUCTION

Historically, both social and economic growth within civilizations have been structured by routes of travel. Thus, it is not surprising that a city's circulation system has become an important facet in today's automobile- and communication-oriented urban life. The main function of a Thoroughfare Plan is to provide a system for efficient movement of people and goods in and around a city. A Thoroughfare Plan is also intended to provide an efficient, structured framework for the smooth flow of traffic that will result from future growth and development, while preserving the quality and character of residential neighborhoods. The challenge that is faced by cities while designing a Thoroughfare Plan is to develop a system that can accommodate various modes of transportation and increased vehicular speeds while maintaining neighborhood integrity. The City of Lancaster's Thoroughfare Plan is intended to provide urban design criteria and pedestrian mobility concepts in addition to recommendations for improving existing multi-modal traffic needs and accommodating traffic that will result from future growth and development in the City.

The Thoroughfare Plan is an overall guide used to enable individual developments within the City to be coordinated into an integrated, unified transportation system, and is also a basis for future street paving programs. The Thoroughfare Plan encourages the creation of neighborhoods with a minimal amount of through traffic, while providing higher capacities for routes that are intended to move both regional and local traffic throughout the community. The Thoroughfare Plan (see **Plate 4-1**) specifies roadway classifications, roadway routes or alignments, pavement and right-of-way configurations (cross-sections), and makes recommendations based upon the projected future traffic needs of Lancaster.

In addition, the Thoroughfare Plan creates a comprehensive approach towards helping the various departments and agencies responsible for thoroughfare development in coordinating their individual efforts. The standards and criteria contained within this element are intended to ensure consistent design practices in new development or in the redevelopment of certain areas, as may be appropriate. One of the major purposes of the Thoroughfare Plan is to provide a guide for determining future roadway and right-of-way requirements. The following section is based on the analysis of the existing thoroughfare system, and upon goals and objectives formulated during the comprehensive planning process. As the City continues to develop, this Plan shall serve as a reference for improvements and extensions of the City's circulation system.

EXISTING TRAFFIC CIRCULATION SYSTEM

The existing circulation patterns in the City consist of regional and local traffic routes. While the regional routes connect Lancaster to the surrounding areas, thereby ensuring the City's share in the region's economic and social growth, the local circulation routes ensure a well balanced distribution of this growth within the City.

THE REGIONAL SYSTEM

The regional transportation system in Lancaster is a part of the Texas state highway system; this is generally classified into sub-systems according to the type of roadway and the type of traffic that the roadway is designed to accommodate. These regional circulation routes are designated as:

- ♦ Interstate Highways, which are controlled access roadways with grade-separated interchanges;
- ♦ U.S. Highways, which are major city-to-city routes providing connection to large cities, other states, and Mexico;
- ♦ State Highways are major routes that are not part of the U.S. Highway system;
- ♦ Business routes are the important routes that provide service from Interstate, U.S., or State Highways to cities;
- ♦ Loops and Spurs are roadways that provide connections between major roadways and cities; and,
- ♦ F.M. and R.M. roads are minor roadways that provide service to rural areas.

As previously stated in the Baseline Analysis section of this Comprehensive Plan, several of these regional transportation facilities, such as Interstate Highway 35, Interstate Highway 20 and State Highway 342, provide Lancaster with a well-connected regional circulation system. These roadways are part of the state highway system, and therefore, are under the management of Texas Department of Transportation (TxDOT), which is responsible for maintenance, and improvement of these roadways.

Interstate Highway 35 is one of the major transportation routes in the state of Texas, and it generally runs in a north-south direction along the western City limits of Lancaster. This highway connects Lancaster to the cities of Austin and San Antonio and to the international boundary at Laredo. To the north, Interstate Highway 35 provides a direct route from Lancaster through the city of Dallas, to the junction of Interstate Highway 35 East and 35 West near Denton, to the Texas-Oklahoma State Line north of Gainesville. TxDOT is conducting an *I-35 Trade Corridor Study* (a major investment study) with five other states and the Federal Highway Administration. This study is intended to investigate the

transportation needs along Interstate Highway 35 from Laredo, Texas to Duluth, Minnesota. This study will affect the section of Interstate 35 corridor passing through Lancaster, and therefore, the City should keep itself apprised of recommendations and proposals suggested in the study, and should try to correlate its future circulation plans with those TxDOT plans. Some improvements are already underway from Interstate Highway 20 to Parkerville Road.

Interstate Highway 20 traverses the north end of the City in an east-west direction, providing a straight route from Lancaster to the Texas-Louisiana state line east of Marshall, Texas. To the west, this highway connects Lancaster to Fort Worth, and then continues until it meets with Interstate Highway 10 west of Pecos. This highway provides Lancaster with another important regional connection, and with the intersection of two major thoroughfares: Interstate Highway 35 and Interstate Highway 20 (at the northwest corner of the City).

State Highway 342, passing through the downtown area of Lancaster, is another major route within the City. It is a roadway stretch of approximately 15 miles extending north to intersect with Loop 12 in Dallas, and extending south to U.S. Highway 77 southwest of Red Oak. The section of this roadway north of the downtown is called Dallas Avenue locally, while the section south of the railroad is generally known as State Highway 342.

Aside from these highways, **Beltline Road** can be considered as another major route of regional importance. It runs through the center of the City in an east-west direction, extending from U.S. Highway 175 to Cedar Hill.

THE LOCAL TRAFFIC CIRCULATION SYSTEM

The local traffic circulation patterns are created by daily activities of the residents of a city, such as trips to and from work, school or shopping trips. The following traffic generators create most of Lancaster's local traffic patterns:

- ♦ Public schools (i.e. the high school, middle and elementary schools),
- ♦ City Hall, and other public agencies,
- ♦ Businesses along Interstate Highways 35 and 20,
- ♦ Downtown retail and other retail areas along Dallas Avenue and Pleasant Run Roads,
- ♦ The Lancaster Airport,
- ♦ Cedar Valley College,
- ♦ Country View Municipal Golf Course,

- ♦ The Medical Center at Lancaster,
- ♦ Industrial, commercial and other nonresidential uses, and
- ♦ The new Library and Recreational Center Complex.

Most of these traffic generators are located on or close to major thoroughfares, and a few of the areas adjacent to them experience brief periods of congestion during peak traffic times. The City and state roadway systems created the basic major thoroughfare framework for Lancaster. The existing street patterns in the City generally establish sufficient east/west connections, such that street improvements or extensions can be sufficient to accommodate traffic generated from existing residents, as well as from future growth. However, in order to be truly efficient and to accommodate future traffic needs, Lancaster's street patterns require a well-defined street classification system.

PROBLEMS AND DEFICIENCIES IN THE EXISTING SYSTEM

Lancaster's existing street system has relatively few problems and deficiencies in the context of existing population and developments in the City. However, the first step in providing a circulation system that is both sufficient and efficient in terms of accommodating current and future growth within the City, is to identify existing issues and deficiencies, and to address solutions to these issues in the Thoroughfare Plan. Important circulation-related issues identified in the City of Lancaster are as follows:

- ♦ Lack of compatibility between some roadway alignments/improvements and desired community character;
- ♦ Peak-hour traffic along Interstate Highway 35, Interstate Highway 20, and Houston School Road;
- ♦ Increasing heavy-load truck traffic, particularly in the northern areas of the City;
- ♦ Lack of turning lanes on major thoroughfares;
- ♦ Lack of compatibility in traffic capacity and volumes experienced on main travel routes;
- ♦ Designing residential streets that promote, not destroy, the rural character in neighborhood areas;
- ♦ Lack of service/frontage roads along Interstate Highway 20;
- ♦ Lack of interior roads for heavy-load trucks in the northern industrial areas; and,
- ♦ Studies show that the percentage of people driving increases at a much faster rate than the percentage of the overall population.

The Thoroughfare Plan for the City of Lancaster addresses the above problems and deficiencies.

THOROUGHFARE DESIGN AND CLASSIFICATION SYSTEM

To prevent functional obsolescence of the transportation facilities, a hierarchical system defining the role of each roadway, both regional and local, in the City needs to be established. This system, called a functional classification system, in turn translates into physical design features concerning thoroughfare cross-sections, pavement standards and widths, and access management. The Thoroughfare Plan for the City of Lancaster is based upon this system. The functional classification system

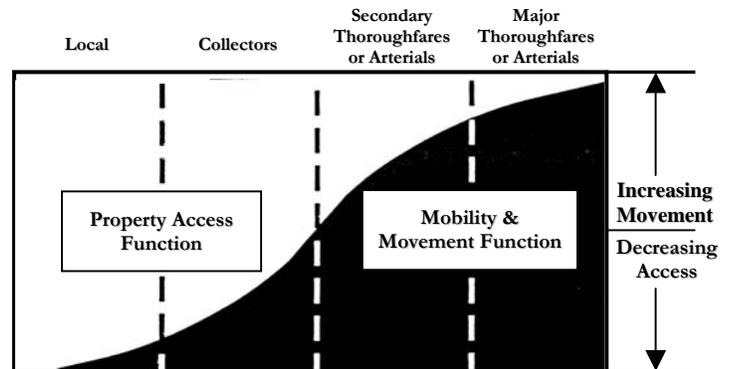


Illustration 4-1
Functional Classification

describes each roadway's function, and reflects a set of characteristics that are common to all roadways within each classification. These functional classifications are intended to reflect the role or function of each roadway within the overall thoroughfare system (see **Table 4-1**).

The commonly used functional classification system consists of a hierarchy of streets that range from those that provide for traffic movement to those that provide access to adjacent properties. **Illustration 4-1** describes the functional street classification system, or hierarchy, for Lancaster. Mobility (as shown in the illustration) refers to the accessibility of adjacent properties from a certain street or thoroughfare. Local streets function well in terms of providing access to the adjacent properties, but function poorly in terms of mobility. Conversely, principal arterials/major thoroughfares function well mobility-wise but, because of speeds and volumes of traffic, provide poor access to adjacent roads and properties. Due to this, streets that carry a higher volume or allow higher speeds of traffic, such as major thoroughfares, should have a limited number of intersections and curb cuts (driveway openings) to avoid obstructing traffic movement. Arterial or major thoroughfares carry longer trips and should, therefore, form continuous links to carry traffic through, as well as to, different areas. Collectors are intended to collect and distribute traffic between this arterial system and individual land uses within the area. Collectors supplement the arterial system and should generally not be continuous for distances over one-and-one-half miles.

Neighborhoods should be developed between arterials so that traffic is routed around, not through, them. Sidewalks and curbs should be included within the rights-of-way of all public streets, wherever possible. Minor collectors should penetrate the neighborhoods to collect and distribute traffic, but not provide convenient cut-through routes. Land use planning efforts should attempt to encourage compatible land uses adjacent to streets. Nonresidential activities should be developed in such a manner

that the primary mobility function of arterial or major thoroughfares is not compromised due to poor access management. Wherever concentrations of traffic occur on collector streets, consideration should be given to prohibit houses from fronting on these types of streets or thoroughfares. Good subdivision design can allow ample lot yields while orienting houses to local streets and not collectors.

The City street system should consist of arterials (major thoroughfares), collectors and local streets. Freeways and highways (i.e. Interstate Highway 20 and Interstate Highway 35) are examples of regional thoroughfares, and are normally under the jurisdiction of the Texas Department of Transportation (TxDOT).

As previously stated, application of the functional classification system and design principles can help produce an optimized traffic circulation system. Major advantages include the preservation of residential neighborhoods, long-term stability of land use patterns, increased value of nonresidential commercial properties, fewer traffic accidents, and a decreased portion of urban land devoted to streets. **Table 4-1** describes the most important characteristics of each functional classification and their intended use. The roadway classification system includes freeway, arterial, collector and residential/local classifications. The arterial classification system includes principal arterials/major thoroughfares and minor arterials/major secondary thoroughfares. The collector classification system includes minor and major collector streets. The following sections outline the various standards of roadway cross-sections for Lancaster.

FREEWAYS OR HIGHWAYS (TYPE “A”)

Freeways or highways are grade-separated high-capacity highways in which all direct access from adjacent properties is eliminated, and where ingress and egress to the traffic lanes is controlled by widely spaced access ramps and interchanges. Access to the freeway is typically provided from on and off ramps connecting to frontage roads. These roadways are funded primarily through the Federal Highway Administration and are administered through TxDOT (Interstate Highway 20 and 35 in Lancaster are examples of freeways).

ARTERIAL STREETS (TYPE “B”)

The primary urban transportation system is made up of principal arterials, commonly referred to as major thoroughfares. The primary function of a major thoroughfare is to provide for continuity and high traffic volume movement between major activity centers (neighborhoods, commercial centers, etc.). These thoroughfares are usually spaced at approximately one-mile intervals unless terrain or other

Table 4-1
ROADWAY FUNCTIONAL CLASSIFICATIONS AND GENERAL PLANNING GUIDELINES
City of Lancaster, Texas

Classification	Function	Continuity	Approx. Spacing (Miles)	Direct Land Access	Minimum Roadway Intersection Spacing	Speed Limit (mph)	Parking	Comments
Freeway and Expressway (e.g., I. H. 20)	Traffic Movement	Continuous	4 miles	None	1 mile	60 to 70 mph	None	Supplements capacity and arterial street system, and provides high-speed mobility.
Arterial / Major Thoroughfare (e.g., Beltline Road)	Moderate distance inter-community traffic; Land access should be primarily at intersections	Continuous	1/2 to 1½ ⁽¹⁾ miles	Restricted -- some movements may be prohibited; number & spacing of driveways controlled; May be limited to major generations on regional routes.	1/8 mile 1/4 mile on regional route	35 to 45 mph	None	"Backbone" of the street system.
Collector (e.g. Prescott Drive)	Collect/distribute traffic between local & arterial streets; Direct land access; Inter-neighborhood traffic movement.	Not necessarily continuous; May not extend across arterial.	1/4 to ½ ⁽²⁾ mile	Safety controls; limited regulation. Residential access prohibited; commercial access allowed with shared driveways.	300 feet	30 mph	Limited	Through traffic should be discouraged.
Local	Land Access Sidewalks	None	As needed.	Safety controls only.	200 feet	30 mph	Permitted	Through traffic should be discouraged.

⁽¹⁾ Spacing determination should also include consideration of (travel projections within the area or corridor based upon) ultimate anticipated development.

⁽²⁾ Denser spacing needed for commercial and high-density residential districts.

barriers create a need for major deviation. The minimum major thoroughfare cross-section contains four moving lanes, two in each direction. Right-of-way requirements for major thoroughfares typically range from 100 to 120 feet. Often, four lanes are constructed within the full right-of-way, leaving a wider median than for a six-lane thoroughfare. This concept allows for an interim solution until traffic volumes warrant the construction of the additional two inside lanes. Due to the fact that these thoroughfares will carry high traffic volumes (20,000 to 40,000 vehicles per day), it is essential that they have continuous and direct alignment and that they interconnect with freeways. For the same reasons, access from adjacent property should be controlled. This can be accomplished by limiting the number and location of driveways or curb cuts that access this thoroughfare type. Also, principal arterials are often divided, since it is important to provide left-turn lanes, and, where traffic warrants, separate right-turn lanes with adequate stacking for trucks, buses and school “drop-off” that are separate from the normal traffic lanes. Divided arterials with medians also offer opportunities for continuous street lighting, landscaping and other aesthetic treatments.

Type “B+” Major Arterial

Type “B+” major arterial thoroughfares are designed to utilize 100 to 120 feet of right-of-way. Two 33-foot roadway surfaces will be separated by a 17 to 27 feet median. An additional 13-foot of right-of-way will allow for wider parkways along the sides of the roadway and will help buffer adjacent properties. These roads are designed to accommodate fairly high traffic speeds, 40 to 50 miles per hour, within developed areas. Illustration 4-2 shows the cross-section for Type “B+” major arterials.

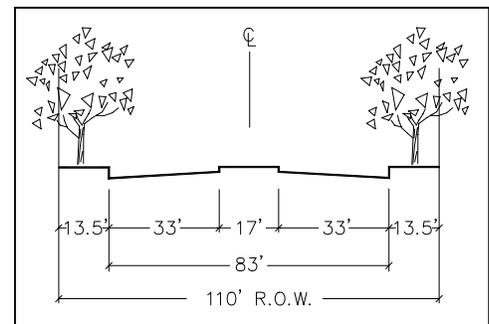


Illustration 4-2
Major Arterial

Type “B” Minor Arterial:

Where traffic volumes are expected to be more moderate (less than 20,000 to 25,000 vehicles per day), it should be possible to use a four-lane, undivided thoroughfare indicated as Type “B”. This thoroughfare should be designed to utilize 100 feet of right-of-way with two 33-foot wide pavement sections separated by a 14-foot median divider. Illustration 4-3 shows the cross-section for Type “B” minor arterials.

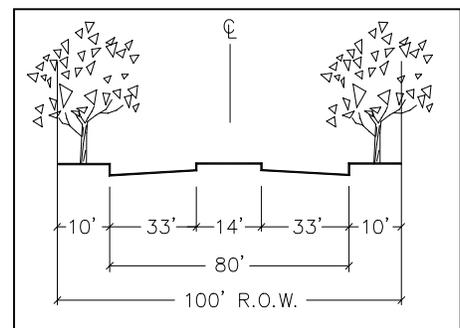


Illustration 4-3
Minor Arterial

COLLECTOR STREETS (TYPE "C")

A collector street's primary function is to collect and distribute traffic from local-access streets, such as residential neighborhood streets, to a major or minor arterial system. A collector street is usually located in such a manner to discourage through-traffic movements. To discourage such movements, these streets are typically disrupted at some point by offsetting intersections or incorporating curvilinear design. A collector street may also be used as a local street in internal industrial areas or adjacent to multiple-family areas, and as an access route to elementary schools and neighborhood playgrounds. Generally, 60 to 70 feet is the minimum right-of-way requirement for collector streets, while the total minimum pavement is usually 37 to 48 feet. Two moving lanes of traffic, in addition to any on-street parking, represent the minimum paving requirements for a collector street in a residential area.

Type "C+" Major Collector / Secondary Street:

The Type "C+" standard provides a street with two moving lanes of traffic and two parallel parking lanes with 85 to 100 feet right-of-way. This thoroughfare consists of two 24-foot-wide pavement sections, separated by a 17-to 32-foot median, and an additional 10 feet right-of-way on each side. Generally, collector streets should be shorter than one mile in length, and are expected to collect moderate volumes (less than 10,000 vehicles per day) of traffic from internal, nonresidential areas and to convey traffic to a major thoroughfare. The Type "C+" collector street is designed to be used as a local street in industrial or commercial areas. Where heavy truck-turning movements can be expected at intersections with major thoroughfares on a Type "C+" collector street, intersections could be flared to provide for a short length of higher paving to accommodate higher volumes through the intersection. Illustration 4-4 shows the cross-section for Type "C+" major collector streets.

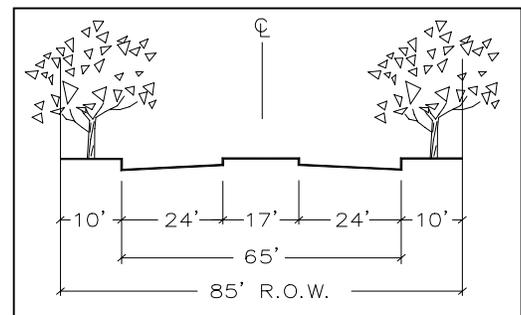


Illustration 4-4
Major Collector

Type "C" Minor Collector:

Type "C" minor collector streets are low- to moderate- volume facilities, and their primary purpose is to collect traffic from residential streets and accommodate movement to the nearest major collector or arterial. The average daily traffic volumes for these types of streets should not exceed 5,000 trips per day. The Type "C" minor collector street provides for 60 to 65 feet of right-of-way with 37 to 44 feet of paved surface. This standard may also be used as a local street in industrial or commercial areas. Illustration 4-5 shows the cross-section for Type "C" minor collectors.

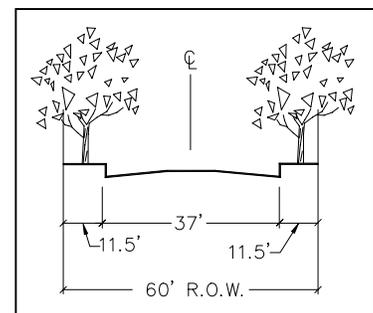
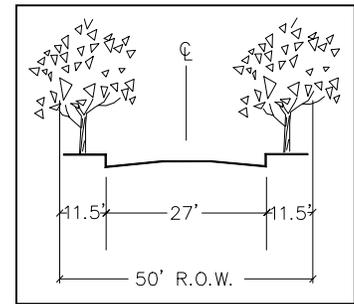


Illustration 4-5
Minor Collector

RESIDENTIAL STREET (TYPE "D")

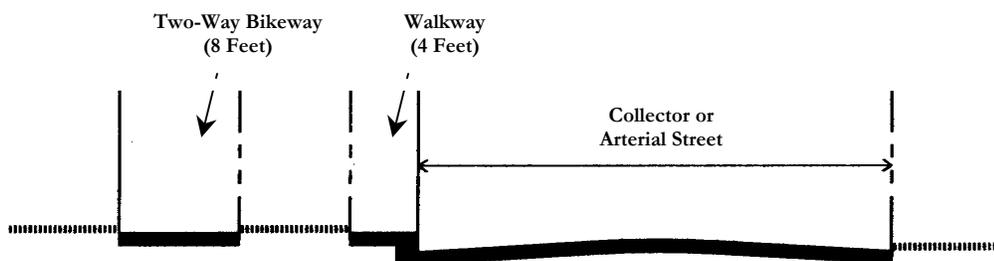
The streets within a neighborhood that provide access to residential lots and building sites should be arranged to discourage most through traffic, except that which is directly related to the area. The alignment of residential streets should be either of a curvilinear, discontinuous-loop, cul-de-sac, or court configuration. Because only limited traffic is attracted to the residential streets, they have narrower rights-of-way and pavement widths than other types of streets. The usual paving width of a residential street is 27 feet, with right-of-way requirements of approximately 50 feet of right-of-way. Residential streets are generally designed to accommodate up to 750 vehicles per day.



**Illustration 4-6
Residential Streets**

BIKEWAYS/BICYCLE LANES

As part of Lancaster’s transportation system, the opportunity exists for a system of bicycle lanes associated with the existing and future roadway network. When coordinated with the recommended trail system (refer to the Parks, Recreation & Open Space Master Plan), the use of bicycle lanes in conjunction with roadways (but not necessarily sharing the same paving) can be a desirable alternative to supplement the overall transportation system. Where possible, the Type “C” section should be used or the routes should be on less traveled or smaller streets. If right-of-way is limited, then the Type “B” sections can be used. The following are accepted bikeway/walkway cross-sections, as recommended by the North Central Texas Council of Governments (NCTCOG).



**Illustration 4-7:
Type A: Exclusive Bikeway & Walkway**

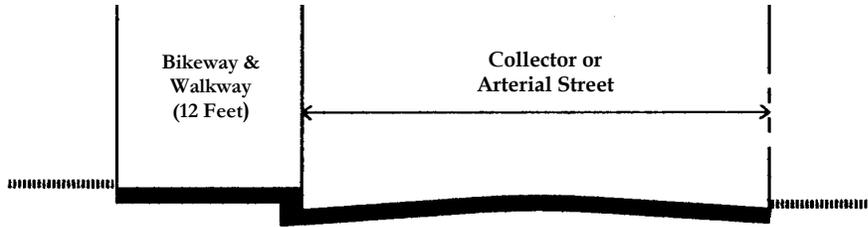


Illustration 4-8:
Type B: Bikeway & Walkway Constructed Together
(Separated by curb & grade change)

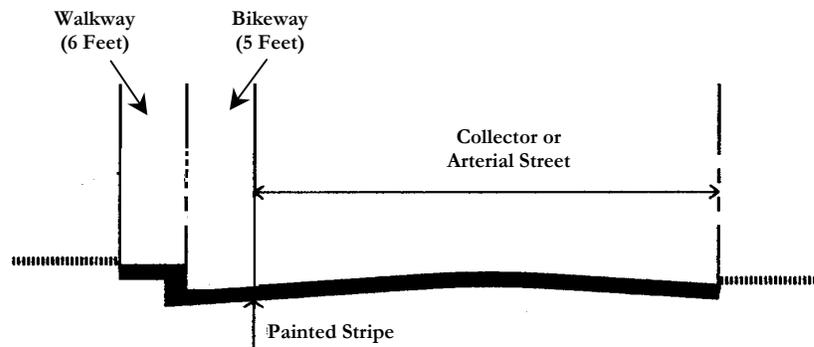


Illustration 4-9:
Type C: Bikeline Constructed as Part of a Roadway
(On same grade as roadway)

TRAFFIC CAPACITIES AND VOLUMES

Capacity is the measure of a street's ability to accommodate traffic volume. It is normally measured at a signalized traffic intersection where traffic flow is regulated and traffic congestion is present during the peak periods of traffic flow. The daily (24-hour) volumes of traffic that move along the major arterial street system in Lancaster can provide insight into the flow and direction of traffic, as well as into the general growth of the area. Information on traffic volumes are collected by the North Central Texas Council of Governments (NCTCOG) and the Texas Department of Transportation (TxDOT).

The ability of a signalized intersection to accommodate traffic is usually expressed in terms of level of service (LOS). Levels of service "A" through "F" are shown and defined on **Table 4-2**. Level of service "C" is generally the recommended level of service in suburban cities, and is also the recommended level for design purposes. With the possible exception of some intersections, most streets in Lancaster presently function at level of service "C" or better.

THOROUGHFARE PLANNING ISSUES

The following five broad issues have been considered in developing policies for Lancaster's Thoroughfare Plan:

Maintaining an adequate, appropriate and efficient roadway network – Increased population will increase traffic on Lancaster's roadways. A carefully planned network of streets can help maintain adequate circulation without sacrificing the community's development potential. The network should include a hierarchy of streets, such as that shown previously in **Table 4-1**, with each class of street being designed to serve an appropriate function. Standards for each class of street must balance the volume and speed of traffic, public safety, roadway construction and maintenance costs, as well as impacts on adjacent development.

Coordinating roadways and adjacent development – Land use and roadway planning are closely linked. Just as inappropriate land uses can dramatically reduce the effectiveness of adjacent roadways, poorly planned roadways can reduce the viability of adjacent land uses. By coordinating land use and roadway decisions, Lancaster can minimize future compatibility problems between roads and adjacent land uses.

Cost-effective infrastructure investment – Building and maintaining an efficient street network requires significant investment of local resources. Lancaster must upgrade its existing street system based on this Plan, which is designed to encourage better traffic circulation. Funding based on a Capital Improvement Plan can ensure that the City addresses its highest priority roads first.

Table 4-2
DEFINITION OF LEVEL OF SERVICE FOR SIGNALIZED INTERSECTIONS
City of Lancaster, Texas

Level of Service	Description	Stopped Delay per Vehicle at Intersection (Seconds)	Example
A and B	Virtually no delays at intersection with smooth progression of traffic. Uncongested operations; all vehicles clear in a single signal cycle.	< 15.0	Residential or rural streets.
C	Moderate delays at intersections with satisfactory to good progression of traffic. Light congestion; occasional back-ups on critical approaches.	15.1 to 25.0	Urban thoroughfares at off-peak hours.
D	Forty percent probability of delays of one cycle or more at every intersection. No progression of traffic-movement from intersection with 90 percent probability of being stopped at every intersection experiencing "D" condition. Significant congestion on critical approaches, but intersection functional. Vehicles required to wait through more than one cycle during short peaks. No long-standing lines formed.	25.1 to 40.0	Secondary CBD streets at peak hours (this is the design level of service for urban conditions).
E	Heavy condition. Delays of two or more cycles probable. No progression. One hundred percent probability of stopping at intersection. Limit of stable flow. Blockage of intersection may occur if traffic signal does not provide for protected turning movements.	40.1 to 60.0	Primary CBD streets at peak hours.
F	Unstable flow. Heavy congestion. Traffic moves in forced flow condition. Three or more cycles to pass through intersection. Total breakdown with stop-and-go operation.	> 60.0	Downtown areas usually in larger cities at the A.M. or P.M. peak hours.

Source: North Central Texas Council of Governments

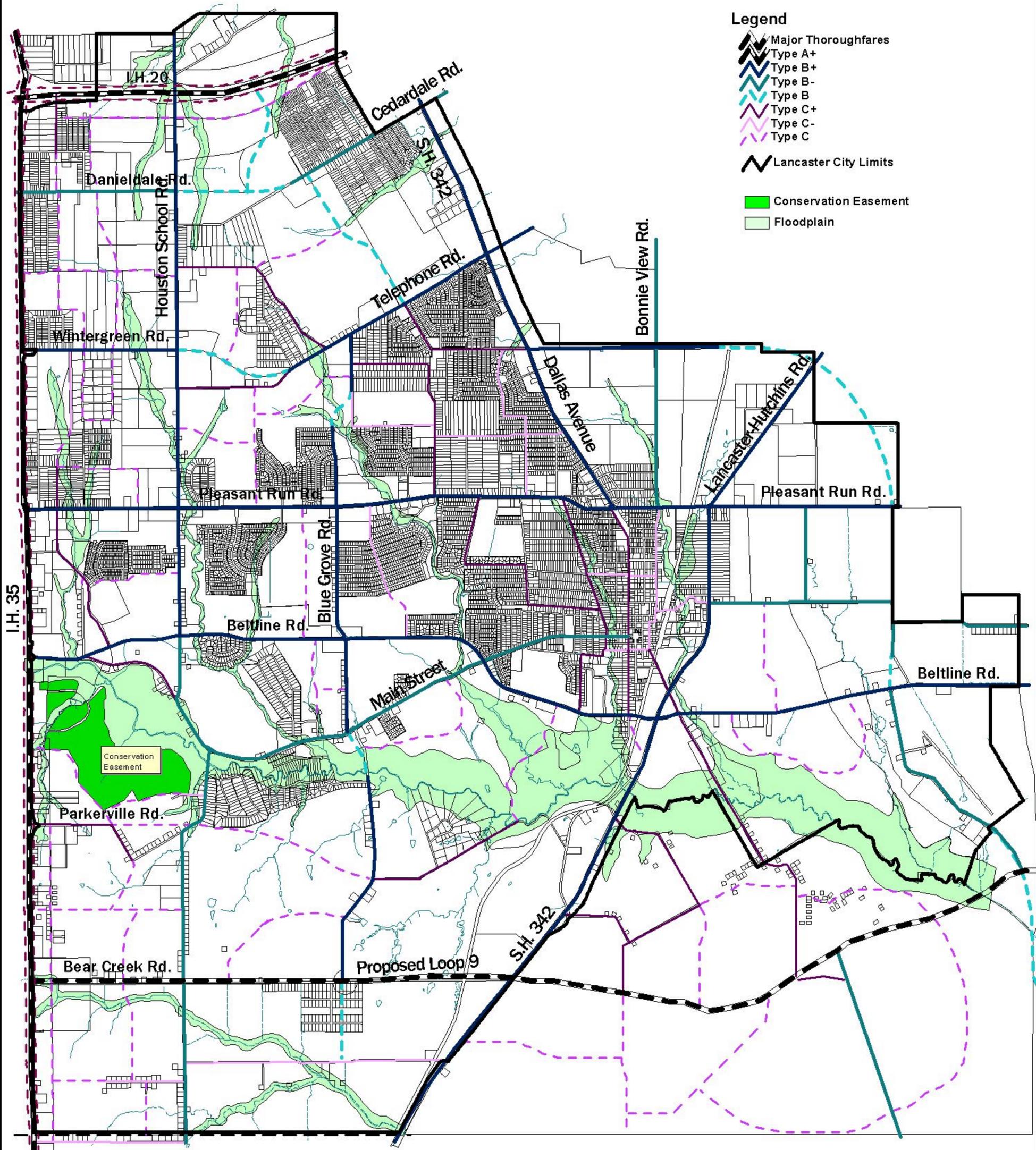
Network for non-automotive (multi-modal) transportation – America's heavy reliance upon automobiles has led many communities to forget or ignore other alternative modes of transportation. Through appropriate design and planning, Lancaster can develop a low-cost system of trails and paths that encourage residents to travel by foot, bike, or even horseback through the community. In conjunction with the Parks, Recreation & Open Space Master Plan (see separate element), bike paths and/or routes should be planned and integrated into new subdivisions. Increased use of other modes of transportation will improve the health of Lancaster's residents, and will have a positive impact upon the environment, as well as upon community character.

Designing streets in industrial areas – Streets in industrial areas generally carry heavy-load vehicles (i.e., eighteen-wheeler trucks, etc.) on a regular basis, which can cause more rapid deterioration of the roadways than in other areas. Design standards for these types of streets should be reviewed to ensure that these streets can be maintained in good condition for a long period of time.

Designing residential streets – Streets can have both positive and negative impacts on neighborhoods, as much of the community character depends upon the type of relationship between structures and streets. The rural/small town community atmosphere desired by some residents of Lancaster can be achieved through appropriate design of and streetscape elements along residential streets. Use of traditional setbacks, streets lined with trees, live screening, curb-and-gutter treatments, sidewalks, and other streetscape elements (including benches, decorative lighting, edge treatments with sculptures) can be utilized to maintain and/or achieve this small-town atmosphere.

THOROUGHFARE PLAN RECOMMENDATIONS

The following section describes the major thoroughfare system recommendations for the City of Lancaster. The most important recommendation for maintaining an adequate, appropriate and efficient roadway network in the City is to identify roadway classifications and to increase their widths and right-of-ways to match the functional classification system described previously within this element. The following classification of roadways is based upon the traffic counts and capacities for Lancaster's existing roadways, as determined by the North Central Council of Governments (NCTCOG).



- Legend**
- Major Thoroughfares
 - Type A+
 - Type B+
 - Type B-
 - Type B
 - Type C+
 - Type C-
 - Type C
 - Lancaster City Limits
 - Conservation Easement
 - Floodplain

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Dunkin Sefko & Associates, Inc.
 Urban Planning Consultants
 Date: April 9, 2001

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PLATE 4-1
Thoroughfare Plan
City of Lancaster, Texas

ARTERIAL STREET SYSTEM RECOMMENDATIONS

The roadways that are proposed for modification that have an arterial system classification (see cross-section on page 4-7) and standards (see **Plate 4-1**) in the City are as follows:

- ♦ Type B+, Major Arterial Roadways with 120 feet of right-of-way:
 - Beltline Road,
 - Lancaster-Hutchins Road;
- ♦ Type B+, Major Arterial Roadways with 100 feet of right-of-way:
 - Houston School Road,
 - Blue Grove Road,
 - Dallas Avenue from Cedardale Road to Pleasant Run Road,
 - Pleasant Run Road,
 - Section of West Main Street between the two intersections with Beltline Road,
 - Parkerville Road between Interstate Highway 35 and Houston School Road;
- ♦ Type B, Minor Arterial Roadways with 82 feet of right-of-way:
 - Cedardale Road,
 - Wintergreen Road,
 - Greene Road from Lancaster-Hutchins Road to the eastern City limits,
 - State Road from southeastern City limits to Red Bud Street in the downtown area,
 - Alba Road between Greene and Beltline Road (north of the airport),
 - Ferris Road from Beltline Road to southern City limits.

Improving these roadways and applying the recommended arterial street size standards to existing streets will help them to function more efficiently, and will also help to alleviate current and future traffic problems in the City. Other recommendations to improve the overall arterial street system in the City are as follows.

Proposed Interstate Highway 20 frontage roads — These roads will not only make the northwestern part of the City more easily accessible from the highway, but will also provide possible additional access points to Interstate Highway 20 for the residents of Lancaster.

Proposed extension and straightening of Blue Grove Road — Currently the majority of the north-south traffic in the northwest part of the City is being accommodated by Houston School Road, which is at present carrying traffic volumes exceeding its capacity. Once the areas in the north part of the City start developing, it will be difficult to accommodate the increased traffic on this existing thoroughfare unless it is upgraded as recommended in this Plan. Extending Blue Grove Road from Pleasant Run

Road to the proposed Interstate Highway 20 service road, in addition to aligning it with West Main Street and upgrading the existing right-of-way 100 feet, will provide an alternative north-south thoroughfare and could reduce traffic volumes on other thoroughfares.

Proposed connection between Lancaster-Hutchins Road and Wintergreen Road — This connection will provide another north-south arterial street in the City that can serve as a major truck route. In addition, it will provide a convenient connection to Interstate Highway 20 from the eastern part of Lancaster, which would accommodate growth in this part of the City.

Proposed extension of Wintergreen Road — **Plate 4-1** shows a proposed connection of Wintergreen (to the east of Houston School Road) to Telephone Road. This connection will prevent the east-west traffic on Wintergreen from traveling on Houston School Road (as in the existing situation) in order to continue in an east-west direction. **Plate 4-1** shows another proposed connection of Wintergreen Road (to the east of Bonnie View Road) south to Alba Road, and again south to Ferris Road. This connection will create an arterial street loop in the City (see **Plate 4-1**), thereby mitigating the flow of traffic within the City in both the north-south and east-west directions.

Proposed connection between Danieldale and Cedardale Roads — Currently due to the offset between the intersections of both Danieldale Road and Cedardale Road with Houston School Road, the east-west connection in the northern part of the City is inefficient; all traffic has to go north or south on Houston School Road before continuing east or west. The proposed connection will allow for a continuous east-west flow of traffic in this part of the City, and at the same time will reduce traffic volumes on Houston School Road.

Proposed connection between the proposed Interstate Highway 20 Service Road and Pleasant Run Road (west of Houston School Road) — **Plate 4-1** shows the location of this proposed connection. This thoroughfare is recommended mainly for the purpose of directing truck traffic away from Houston School Road and through the areas that are proposed for commercial and industrial land use in the Future Land Use Plan (see **Plate 7-1**).

Loop 9 — Loop 9 is a proposed roadway that would eventually connect to State Highway 161 and the George Bush Freeway (State Highway 190). The alignment of this thoroughfare is currently being evaluated by TxDOT and Dallas County, and has not been formally established. **Plate 4-1** shows the preferred alignment of the proposed Loop 9 in Lancaster. When the alignment of Loop 9 is established by TxDOT a detailed corridor study should be undertaken to determine the potential for nonresidential land uses along the frontage or proposed intersections.

COLLECTOR STREET SYSTEM RECOMMENDATIONS

Except as noted in the previous discussion, much of Lancaster's major thoroughfare system, which will serve its present and much of its future population, has already been established. Significant revisions to the existing thoroughfare system are primarily in regard to width and right-of-way improvements, addition of collector streets and related improvement programs throughout the City. As Lancaster continues to develop, these collector streets will provide important secondary access to many portions of the City. Several areas that have vacant land left for development will require collector streets to facilitate the efficient movement of traffic.

The proposed collector streets shown within many areas (see **Plate 4-1**) offer potential for implementation. The City must take care in the future to avoid possible omission of the proposed collectors shown on **Plate 4-1** through incremental and fragmented subdivision planning. The following collector street segments have been identified as being strategic in terms of their location, and therefore important to the existing circulation system:

- ♦ Main Street from Beltline Road to Lancaster-Hutchins Road,
- ♦ Dallas Avenue,
- ♦ Jefferson from Pleasant Run to Second Street,
- ♦ Elm Street from Pleasant Run to Main Street,
- ♦ Lancaster Park Road from Pleasant Run to Main Street,
- ♦ Oak Bluff (east) to Westridge,
- ♦ Westridge (south),
- ♦ 6th Street between Elm and Jefferson Road,
- ♦ 8th Street between Westridge and Dallas Avenue,
- ♦ Rogers from Balkin to Pleasant Run,
- ♦ Balkin Road from Sunny Meadow to Rogers,
- ♦ Donlee Road from Sunny Meadow to Dallas Avenue, and
- ♦ Unnamed collector west and parallel to Houston School between Wintergreen and IH20.

Stonewall, Sherwood, Idlewild, Park Circle and Rolling Hills Place in the northwestern and western parts of the City also function as collector streets. These streets, as well as other streets shown as collector streets on **Plate 4-1**, also need to be improved to the recommended collector size standards to enable these streets to efficiently disperse traffic from neighborhood streets onto the arterial street system.

RESIDENTIAL STREET SYSTEM RECOMMENDATIONS

As Lancaster continues to develop, the relationship of existing and future subdivisions to residential streets will be important in maintaining quality residential neighborhoods. As has been previously mentioned, the primary importance of the thoroughfare system is providing the skeletal framework of arterial and collector streets within which logical residential neighborhood areas can be developed. At the same time, the thoroughfare system has another significant function - that of maintaining the environment in the City's neighborhoods through appropriate residential street designs. General street design recommendations for Lancaster's neighborhoods, which are based on the desire for maintaining a rural small town atmosphere in appropriate areas, are as follows:

- ♦ Streetscape elements must be incorporated (such as sidewalks, street trees and street furniture);
- ♦ Street layouts must be designed to discourage through traffic movements. Some methods of achieving this would be as follows:
 - The residential neighborhood streets must be arranged to be discontinuous and curvilinear, (except where Traditional Neighborhood Design (TND) is appropriate; see the Neighborhood Design element of this Comprehensive Plan)
 - The length of through streets in residential neighborhoods must be limited,
 - Street network in a residential neighborhood must be shifted through the use of T-intersections, or other similar techniques (except where TND is appropriate, see Neighborhood Design element of this Comprehensive Plan).
- ♦ When retail service next to neighborhood areas is appropriate, such service must be located at the edge of the neighborhood, preferably at the intersection of adjacent major thoroughfares. Likewise, churches, when an integral part of the neighborhood, must be located on major thoroughfares or near the intersection of major thoroughfares. Both the shopping center and the church will serve a larger area than the immediate neighborhood, and both involve periods of heavy traffic and parking concentrations, which, unless properly accommodated, can adversely affect the adjacent residential areas.
- ♦ *Gated* communities, or subdivisions/areas with private streets, can be appropriately blended into residential neighborhood areas. This type of residential subdivision must be allowed if it is designed in accordance with appropriate standards. These standards must be established by making revisions to Lancaster's Subdivision Ordinance.

The basic major thoroughfare system shown on **Plate 4-1** must be considered as the structuring framework for future neighborhoods within Lancaster, as well as for the protection and enhancement of existing neighborhoods. The preponderance of vehicular traffic movement within the community must be concentrated on the major thoroughfare system, while the internal street system must have only light vehicular traffic that is related to local access of property. Through careful preplanning of the remaining

future neighborhood areas and with developer cooperation, it may be possible to achieve the basic major and secondary thoroughfare system arrangement recommended in the Thoroughfare Plan for Lancaster.

To achieve the thoroughfare development envisioned by the Plan, the cooperation of all levels of government responsible for highway and thoroughfare development will be required. The significant thoroughfare facilities (state roads) provided within and near Lancaster have resulted mainly through a combination of efforts of the City, County, State and Federal agencies. Continued local City efforts will be necessary to finance future thoroughfare development and to require widening of rights-of-way at the time of subdivision platting and development. State laws now affect developer participation for off-site facilities such as roadways, and therefore, the City must seriously consider roadway construction participation policies in the future.

TRANSPORTATION PLANNING POLICIES

Following is a description of the recommended policies Lancaster should utilize to guide local transportation planning efforts.

- ♦ **Plate 4-1** shows the proposed Thoroughfare Plan for the City of Lancaster. It shows the location of existing or planned roadways and local streets. The City must use this Plan to determine the classification of planned roadway segments. Additional collector streets may be needed to serve traffic within new developments. The alignment and capacity of these streets must be determined as part of any action on a preliminary plat, final plat or zoning case. The Subdivision Ordinance must require right-of-way dedication and roadway alignment/construction that is consistent with the Thoroughfare Plan (**Plate 4-1**). The City's construction standards, design guidelines, and subdivision regulations provide detailed standards for roadway design and construction.
- ♦ **Table 4-1** establishes general planning guidelines for roadways within Lancaster, including the function of each type and key design characteristics. The City must use this table in conjunction with design guidelines established in the Thoroughfare Plan element and the Urban Design & Community Image element of the Comprehensive Plan, and with detailed specifications found in the Subdivision Ordinance to determine the appropriate design standards for planned roadway improvements.
- ♦ The City must seek to maintain a minimum level of service standard of "C", as described in **Table 4-2**. This standard must be used in reviewing the transportation needs of development proposals.

- ◆ The City must develop a five- and ten-year Capital Improvements Program (CIP) for use in establishing funding priorities and schedules for non-State funded construction, operation and maintenance of its transportation facilities, as identified within this element.
- ◆ The City must prioritize, phase and schedule transportation system improvements in accordance with the Comprehensive Plan and the ability of the City to fund such improvements.
- ◆ On-site local and collector streets that are constructed by developers must be in accordance with City regulations. The City may also require construction of off-site streets or street improvements needed to provide adequate access to the development. This policy must be implemented through specific provisions of the City's Subdivision and Zoning Ordinances.
- ◆ Lancaster must coordinate with TxDOT, County and other local jurisdictions, such as the School District, when planning transportation improvements.
- ◆ The City must design streets in a comprehensive fashion considering street trees, ADA-accessible pedestrian walkways/sidewalks and bike lanes, signage and lighting whenever any of those factors are applicable. Citizen involvement in major street-widening projects must be sought.
- ◆ The City must consider all alternatives for increasing roadway capacity before physical road widening is recommended for roadways within existing neighborhoods.
- ◆ More intensive uses that generate high volumes of traffic must be located along major collector or arterial streets where sufficient roadway capacity can be provided.
- ◆ Except as specifically approved by the City for parcels within the downtown area, all development must provide adequate on-site parking for normal operations. This policy must be implemented through specific provisions in the City's Subdivision and Zoning Ordinances.
- ◆ The City must develop access (driveway) spacing standards for lots located on arterial and collector streets to promote a smooth flow of traffic and to minimize the impact of individual developments on the safe and efficient function of these roads. These standards must be drafted by the City staff or a transportation engineer, reviewed by the Planning and Zoning Commission, and adopted by ordinance by the City Council.
- ◆ The City must establish a system of trails and pathways for alternative means of travel within the City by pedestrian, bicycle, equestrian or other non-motorized modes where possible.

THOROUGHFARE IMPLEMENTATION

Lancaster has relied on two primary entities in the implementation of its thoroughfare system: (1) participation by the County or State; and (2) the City's own construction of facilities. Due to changes in State law (Impact Fees, Chapter 395 of the Texas Local Government Code), the City will be able to require assistance from developers in building roadways (as well as water and wastewater facilities), but this will require different administrative techniques. Monies for capital improvements are becoming more difficult to secure each year. It will be necessary that the City continue to carefully manage its available resources in the implementation of not only the thoroughfare system, but other public facilities as well. The proper administration of the Thoroughfare Plan will require:

Coordination of Capital Improvements – Some of the major thoroughfares that are improved within Lancaster will involve cooperation with Dallas County and, in some cases, will involve financial participation by the City. Lancaster will have to assume the responsibility for constructing a reasonable portion of its collector thoroughfare system as it continues to develop. The City must spend a reasonable amount of money each year for roadway maintenance and improvements. By doing so, the City can gradually improve its overall system in a period of years. As roadways are improved, the City must determine whether water and wastewater lines need replacement at the same time. If underground utilities need replacement, they must be replaced at the same time the roadway project is undertaken (thereby avoiding removing parts of a new street to replace underground lines in future). The following roadways have been recommended by the Capital Improvement Committee, appointed by the City Council as of May, 2000.

Table 4-3
Recommended Street Projects
City of Lancaster, Texas

1. Wintergreen Road – (IH-35 to Houston School Road)	\$3,600,000.00
2. Pleasant Run (IH-35 to Blue Grove) reconstruct/widening	\$10,201,440.00
3. Houston School Road (IH-20 to Wheatland) reconstruct/widening	\$694,176.00
4. Wintergreen Road (Dallas Ave. to Lancaster-Hutchins) reconstruct/widening	\$4,753,000.00
5. Lancaster / Hutchins – drainage improvement and reconstruct/widening	\$13,419,522.00
6. Houston School Road (Beltline to Main) reconstruct/widening	\$1,263,500.00
7. Wintergreen Road (Houston School Road to Sunny Meadows)	\$8,689,620.00
8. Jefferson Street – reconstruct/widening (Wintergreen to 2nd Street)	\$8,935,128.00
9. Belt-Line Road (Bluegrove to Dallas Ave.) reconstruct/widening	\$5,122,000.00
10. Pleasant Run (Blue Grove to Dallas Ave.) reconstruct	\$9,794,880.00
11. Daniieldale Road (IH-35 to Houston School) reconstruct/widening	\$4,483,753.00
TOTAL	\$70,957,019.00
Source:	

Subdivision Control – The subdivision of land into building sites represents the first step in the development of urban land uses and the creation of traffic generators. Reasonable land (right-of-way) must be set-aside at the time of subdivision platting so that adequate thoroughfares can be created without adversely affecting the value, stability, and long-range character of the area being developed. Specifically, right-of-way must be dedicated in accordance with the Thoroughfare Plan as each plat is approved. Right-of-way protection and preservation within the City is particularly significant along major thoroughfares. The subdivision ordinance must mandate appropriate streetscape development designs and provide developer incentives for smaller residential road widths in exchange for open space dedication for each subdivision development.

Zoning and Land Use Control – The adequacy of existing and planned thoroughfares must be taken into consideration in all changes of zoning and land use. When such changes occur, the space allocated for rights-of-way must be provided commensurate with the overall land uses contemplated in the area.

Building Lines – Where widening of existing thoroughfare rights-of-way are contemplated, buildings must be set back to allow for the planned widening to ensure that adjacent land uses will function properly with the new thoroughfare after the proposed improvement is made. In some cases, it will be desirable to establish building lines or setback from the centerline by ordinance to assure the orderly and uniform development of thoroughfare frontage. In downtown or residential areas, the established building lines must be closer to streets in order to promote pedestrian, activity-oriented street patterns.

Other Considerations – Certain aspects of the Plan, such as access controls, must be implemented through other design and technical standards, which may or may not be included in the Zoning or Subdivision Ordinances. Examples of other standards that need to be implemented are sight and visibility standards and joint access standards. Water and sewer impact fees have already been established under a separate process, but roadway impact fees must be established to assist in financing future thoroughfare improvements. In addition, it is recommended that the City develop a local truck route system to ensure that trucks use roadways that are intended and designed for their use.