THOROUGHFARE PLAN

An Element of the Comprehensive Plan

Town of Argyle, Texas

Adopted December 8, 2009
Amended April 13, 2010

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INTRODUCTION

The Thoroughfare Plan is designed and intended to provide an efficient, structured framework for the smooth flow of traffic throughout the study area that will result from future growth and development. Improving certain key aspects of the system also ensures that existing traffic movement may be accommodated. The Thoroughfare Plan is an overall guide that will enable individual developments and roadways within the Town of Argyle (the Town) to be coordinated into an integrated, unified transportation system. The Plan encourages the creation of neighborhoods with a minimal amount of through traffic, while providing high capacities for routes intended to move both regional and local traffic through the community.

The Thoroughfare Plan provides a framework for development.

FUNCTIONS OF THOROUGHFARE PLANNING

The Thoroughfare Plan defines a hierarchy of roadway functions that provide for both traffic movement and property access. The Plan also provides a clear statement of future roadway alignments, capacities, and right-of-way requirements throughout the planning area. It has been developed in support of the Land Use Plan and will help facilitate the orderly development of the community.

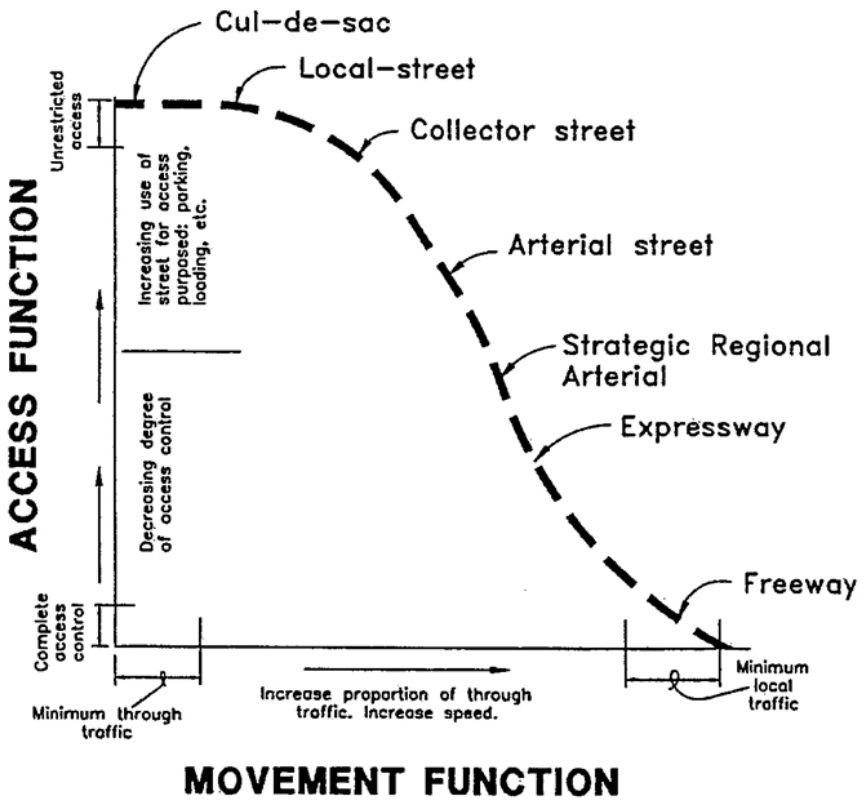
The Plan serves as a guide for determining the ultimate configuration of the thoroughfare network. It establishes parameters whereby appropriate transportation corridors are preserved and/or developed to provide adequate levels of service. It also serves as a guide for programming improvement projects. The Plan should reflect community goals, provide efficient, continuous traffic routes, complement expected land *use* patterns and characteristics, integrate with both the regional freeway/highway and arterial system, as well as the roadway systems of surrounding local jurisdictions, be sensitive to topographical features, and constraints, and be responsive to changing conditions. This element was prepared by analyzing the existing system of thoroughfares and by proposing changes and recommendations for future thoroughfares based upon the guiding principles formulated during the comprehensive planning process.

FUNCTIONAL CLASSIFICATION SYSTEM AND THOROUGHFARE STANDARDS

A functional classification system is proposed that reflects the role or function of each roadway within the Plan. This system translates into physical design features that include thoroughfare cross-sections, pavement standards, pavement widths, and access management.

Illustration 1 helps depict the functional street system, or hierarchy, for the community as a whole. The *movement function* refers to the accessibility of adjacent properties from a particular street or thoroughfare. As the illustration indicates, local streets provide the most access to the adjacent properties, but function poorly in terms of mobility. Freeways function very well mobility-wise but, because of speeds and volumes, they serve very poorly as access to adjacent roads and properties. With this in mind, streets that carry higher volumes of traffic should have a limited number of "curb cuts" (driveway openings) so traffic movement will not be impeded. This concept is referred to as the property *access function.*

Illustration 1
Functional Street System



A system consisting of the following thoroughfare types is proposed:

- **Freeways** - high capacity highways in which direct access from adjacent properties is eliminated or significantly reduced, and where ingress and egress to the traffic lanes is controlled by widely spaced access ramps and interchanges (i.e. I.H. 35W)

- **Major Thoroughfares or Arterials** - provides for continuity and high traffic volume movement between major activity centers like neighborhoods, commercial centers, etc (i.e. U.S. Highway 377, F.M. 407, Crawford Road)

- **Collector Streets** - collects and distributes traffic from local access streets, as in residential neighborhoods, to a major arterial or the major street system

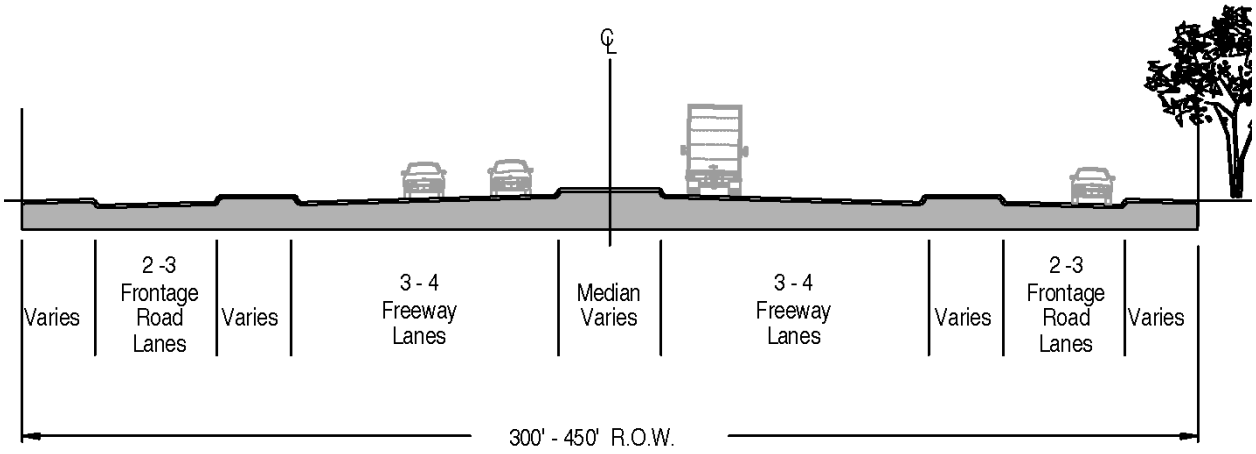
- **Local Residential Street** - internal streets within a neighborhood that provides access to residential lots and building sites and should be arranged to discourage most through traffic, except that which is directly related to the area

A hierarchical roadway system is proposed.

Each type of roadway is intended to serve a specific travel function.

Freeways
Freeways are typically funded through the Federal Highway Administration and are administered through the Texas Department of Transportation (TxDOT). While no new freeways are currently anticipated through Argyle in the near future, I-35W is expected to be expanded in the future. Per the *NCTCOG (North Central Texas Council of Governments) Mobility 2030 – 2009 Amendment*, I-35W near Argyle (an existing 4-lane divided freeway) is estimated to expand to a 6 or 8-lane freeway that may include HOV lanes.

Illustration 2
Controlled Access Freeway Section

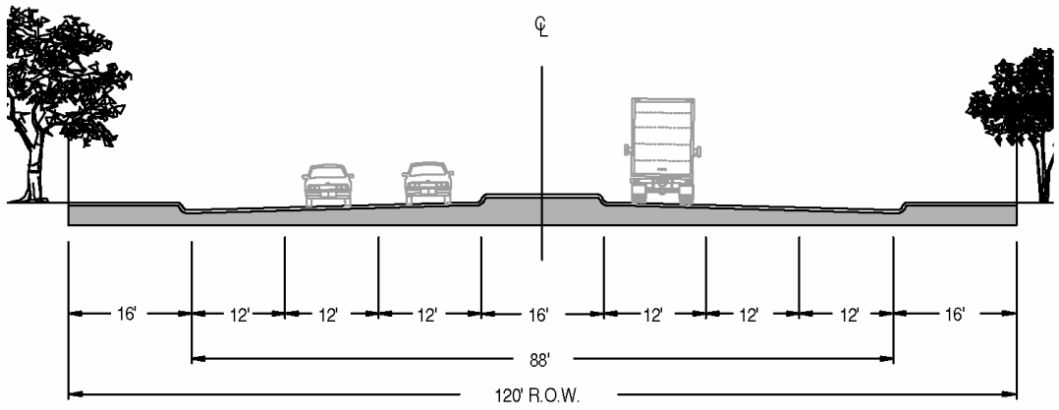


Major Thoroughfares or Arterials
These thoroughfares are usually spaced at one-mile intervals unless terrain or other physical barriers create a need for major deviation. The minimum cross section consists of six moving lanes, three in each direction, within 120 feet of right-of-way.

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. These thoroughfares will carry traffic volumes ranging from 15,000 to 40,000 vehicles per day and it is essential they have continuous and direct alignment and that they interconnect to freeways.

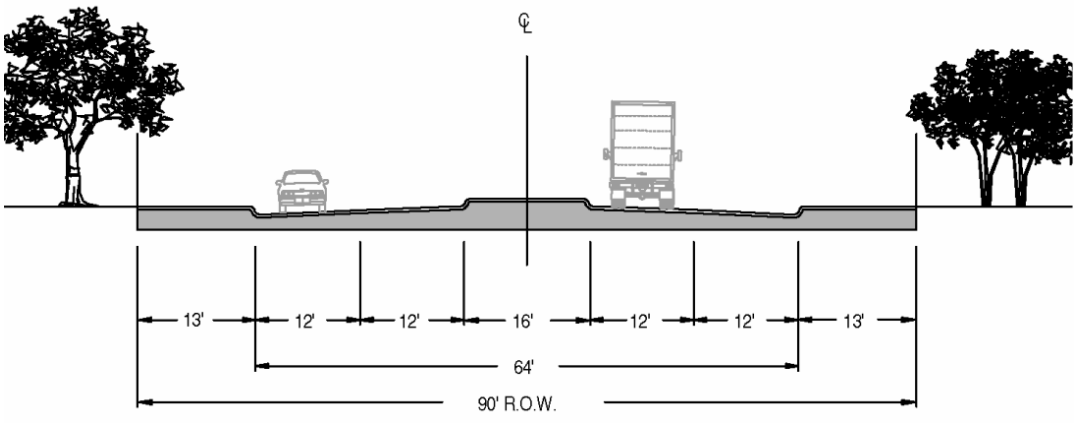
- **Type "A" Major Arterial** – provides three lanes in either direction (i.e. six lanes total) with a center median. The 16-foot center median may be the "lay down" or painted type, which allows more flexibility in access for emergency vehicles. The median may also be raised to create a divided roadway. A right-of-way of 120 feet is required.

Illustration 3
Type "A" Major Arterial



- **Type "B" Minor Arterial** – provides a 4-lane divided thoroughfare. This arterial has a 24-foot wide pavement section and a 16-foot center median that may be the "lay down" or painted type, which allows more flexibility for emergency vehicle access. The median may also be raised to create a divided roadway. These streets are intended where traffic volumes are more moderate, 20,000 to 25,000 vehicle trips per day. A minimum right-of-way of 90 feet is required.

Illustration 4
Type "B" Minor Arterial

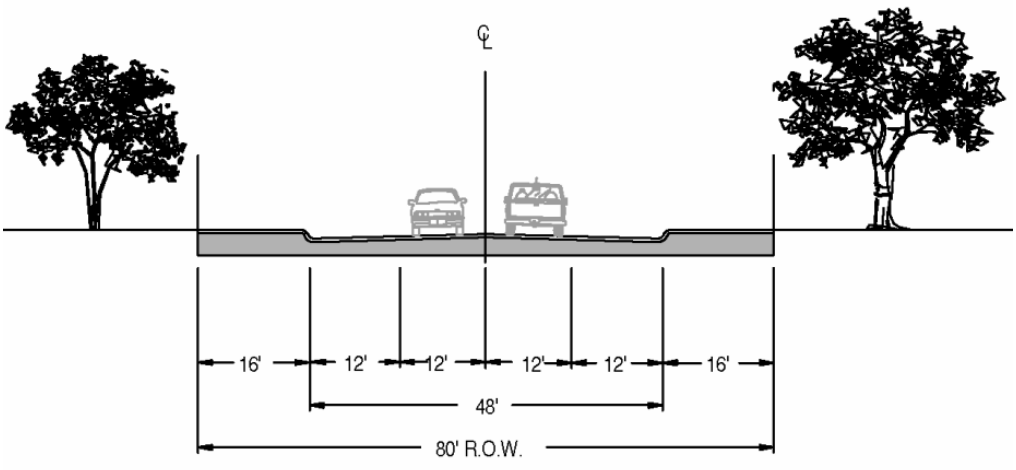


Collector **Streets**

These streets may be placed in a manner that discourages through traffic movement. To discourage through traffic, they are typically disrupted' at some point by off-setting intersections or by incorporating curvilinear design. The collector street may also be used as a local street internal to industrial areas or adjacent to multi-family areas as well as access routes to elementary schools and neighborhood playgrounds.

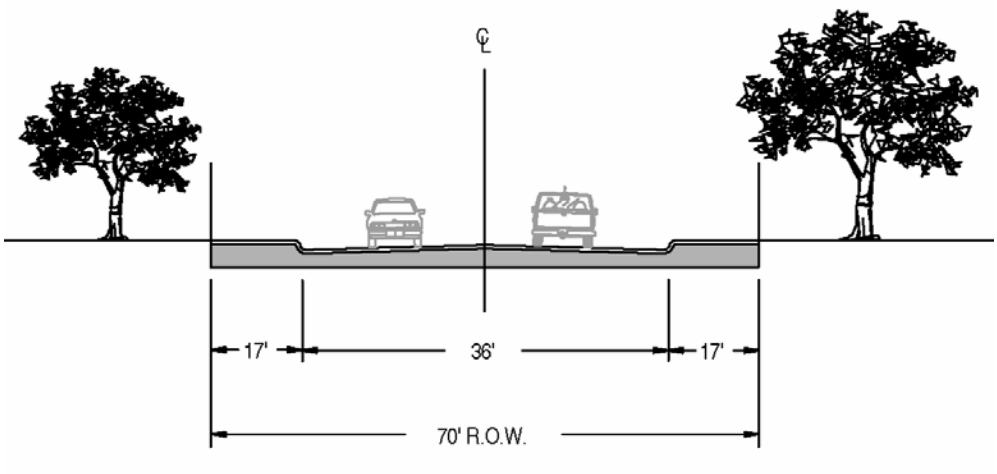
- **Type "C" Major Collector** – low to moderate volume facilities whose primary purpose is to collect traffic from smaller streets within an area to convey to the nearest principal or secondary arterial. Average daily volume should not exceed 10,000 vehicle trips per day. Provides for 80 feet of right-of-way with 48 feet of paving.

Illustration 5
Type "C" Major Collector



- **Type "D" Minor Collector** – low to moderate volume facilities whose primary purpose is to collect traffic from smaller streets within an area to convey to the nearest principal or secondary arterial. Average daily volume should not exceed 7,000 vehicle trips per day. Provides for two moving lanes of traffic and incidental on street parking on 36 feet of pavement within 70 feet of right-of-way. Minor collectors should be shorter than one-mile in length.

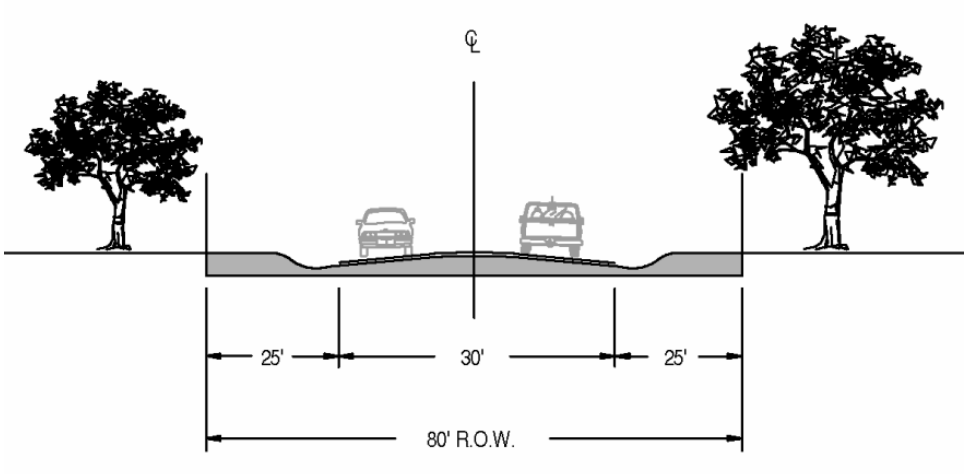
Illustration 6
Type "D" Minor Collector



- **Type "E" Rural Collector** – low to moderate volume facilities within very low-density residential areas whose primary purpose is to collect traffic from smaller streets within an area to convey to the nearest principal or secondary arterial. Average daily volume should not exceed 5,000 vehicle trips per day. Provides for two moving lanes of traffic on 30 feet of pavement within 80 feet of right-of-way. Rural collectors should be shorter than one-mile in length. The following standards should be used to determine if rural streets are appropriate:

  - Residential density does not exceed 2.5 dwelling units per acre for the area to be served;
  - Proper swale design; and
  - Concrete edges.

Illustration 7
Type "E" Rural Collector



Local/Residential Streets

The alignment of residential streets should be either of curvilinear, discontinuous, looped, cul-de-sac or court configurations. Limited traffic is attracted to residential streets and they may have narrower rights-of-way and pavement widths.

- **Type "F" Local Residential Street** – usual minimum paving width is 30 feet within a minimum right-of-way of 50 feet. These streets are designed to accommodate up to 500 vehicle trips per day. The Town of Argyle Town Development Standards should provide for an option to use either a standard curb and gutter section or a lay-back/lay-down curb section.

- **Type "G" Rural Street** – utilized in areas with minimum lot sizes of 1 acre. The usual minimum paving width is 24 feet within a minimum right-of-way of 60 feet. The following standards should be used to determine if rural streets are appropriate:

    - Proper swale design; and
    - Concrete edges.

Other Transportation Elements

Certain roadways can be designed to include extra pavement and/or right-of-way width to accommodate bicycle lanes/routes. Argyle has several natural drainage or creek areas that could be used to develop an off-street trail system, but it will likely require the utilization of roadway rights-of-way in many locations in order to create a fully integrated bicycle trail system. In many areas, the use of street pavement and/or right-of-way for bicycle transportation purposes will be possible if the roadways are properly sized and designed. For collectors or arterials that are designed as part of the bicycle route system, extra right-of-way may be required to accommodate bike lanes. Wider sidewalks may be used on arterials and collectors to accommodate hike and bike trails as an alternative to on-street bike lanes for safety.

LEVEL OF SERVICE AND TRAFFIC CAPACITY

Capacity is the measure of a street's ability to accommodate the traffic volume along the street. *Level of Service* (LOS) is a phrase representative of several factors, including speed, travel time, traffic interruptions, and operating cost of a traffic facility (roadway), used to measure the quality of the facility. In addition, a roadway link refers to a specific length of roadway, usually between two intersections. Levels of service "A" through "F", from best scenario to worst scenario, are defined in the following table.

Table 1
Definition of Level of Service for Roadway Links

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 CBD Streets (at Peak Hours)
E	Operating conditions at 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 CBD 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.	Downtown Areas Usually in Larger Cities at the A.M. or P.M. Peak Hours

SOURCE: North Central Texas Council of Governments

Level of service “C” is generally the recommended level of service in most cities, and is also the recommended level for roadway design purposes. The thoroughfare system must be expanded as growth occurs to ensure that the overall roadway network continues to function at a level of service “C” or better.

THE THOROUGHFARE PLAN

A number of elements must be considered in the process of developing a Thoroughfare Plan, including the Land Use Plan, travel demands, traffic movement and access requirements, and existing physical constraints to roadway construction. The types of land uses that exist and are planned for an area affect the roadway capacity and access needs for that area. Moreover, special efforts will be required in the thoroughfare planning process to ensure that the integrity of residential neighborhoods is protected from unwanted and undesired vehicular traffic.

Balancing the movement and access functions of the thoroughfare system is another consideration in the planning process. Roadways serve two competing functions: the movement of traffic and access to individual properties. Inherent conflict exists where ingress and egress maneuvers from individual properties impede the efficient movement of traffic on major roadways and where high traffic volumes impede turning movements into and out of private driveways. Controlling access so that these two competing functions occur on separate sections of the thoroughfare system is a primary objective of the planning process.

The primary purpose of the Thoroughfare Plan is to provide a long-range plan to assist in thoroughfare facility planning and the dedication of needed rights-of-way to implement such a plan. The recommended Thoroughfare Plan is shown on Map 1. One of the benefits of the Thoroughfare Plan is the identification of streets upon which resources can be concentrated for improvements, ensuring that these monies are spent efficiently. The Thoroughfare Plan is designed to identify the proposed location of collector and arterial streets with the intent to facilitate movement and serve higher volumes of traffic that will occur with future development.

THOROUGHFARE PLANNING ISSUES

The following four broad issues have been considered in developing policies for the Thoroughfare Plan:

1. ***Maintaining an adequate, appropriate, and efficient roadway network.***
   Increased population as well as increased single-person trips will increase traffic on existing roadways, especially as growth continues along U.S. Highway 377. The system should include a hierarchy of streets, with each class of street designed to serve a specific function. Each class of street must be designed with relation to the anticipated use, speed and traffic volume. Increased development will mean increased demand and additional resources to expand the system to keep pace with growing needs.

2. ***Coordinating roadways and adjacent development.***
   Land use planning and thoroughfare planning are closely linked. Failure to successfully merge the two can drastically reduce the effectiveness of adjacent roadways and poorly planned roadways can reduce the viability of adjacent land uses.

3. ***Cost-effective infrastructure investment.***
   Building and maintaining an efficient street network requires significant investment of local resources. Careful planning is needed to ensure that the most cost-effective investments in the street network are made for the community as a whole. Funding is usually based on general obligation bonds and impact fees. Other funding sources should also be considered.

4. ***Network for non-automotive (multi-modal) transportation.***
   Through appropriate design and planning, a relatively low-cost system of trails and paths that encourage residents to travel by foot or bicycle can be developed throughout the community. Use of other modes of transportation would improve the health of local residents, and would have a positive impact upon the environment and community character.

TRANSPORTATION PLANNING POLICIES

The following statements describe the recommended policies to guide Argyle's transportation planning efforts:

1. **Map 1** shows the proposed major Thoroughfare Plan. This plan should be used 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 should be determined as part of any action on a preliminary plat, final plat, site plan or zoning case. Any plat, site plan or zoning case not in conformance with the Thoroughfare Plan should not be approved unless an acceptable alternative is developed and approved.

2. Argyle should use the detailed specifications found in the Town Development Standards to determine the appropriate design requirements for planned roadway improvements.

3. Argyle should seek to maintain a minimum level of service (LOS) standard of "C" on their respective roadways. This standard should be used in reviewing the transportation needs of future development proposals.

4. Transportation system improvements should be prioritized, phased and scheduled in accordance with the Comprehensive Plan and the ability to fund the improvements.

5. On-site local and collector streets constructed by developers must be in compliance with the Town's regulations. Argyle may also require off-site improvements needed to provide adequate access to the development.

6. Argyle should coordinate with TxDOT, the NCTCOG, Denton County and other local jurisdictions when planning transportation improvements.

7. Streets should be designed in a comprehensive fashion considering street trees, ADA-accessible pedestrian walkways, bike lanes, signage, lighting and air quality whenever any of those factors are applicable. Citizen involvement in major street-widening projects should be sought.

8. All alternatives for increasing roadway capacity should be considered before physical road widening is recommended for roadways within existing neighborhoods.

9. Commercial and other non-residential uses that generate high volumes of traffic should be limited to locations where arterial streets provide sufficient access for non-local traffic.

10. Except as specifically approved by the Town, all development should provide adequate on-site parking for normal operations. Exceptions to this condition can be made for specific areas such as special redevelopment or historic areas. This policy should be implemented through specific provisions in the Town Development Standards.

THOROUGHFARE IMPLEMENTATION

The proper administration of the Thoroughfare Plan will require the following actions:

- *Coordination of Capital Improvements*
  Many of the major thoroughfare improvements will involve cooperation with the NCTCOG and TxDOT. In many cases, these improvements will require some financial anticipation. Argyle will likely be required to assume the responsibility for constructing a reasonable portion of its thoroughfare system as it expands its physical boundaries. It should be understood that the system will be constructed on an incremental basis over an extended period of time (20 to 30 years).

- *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 (i.e. right-of-way) must be set aside at the time of platting so that adequate thoroughfares can be created without adversely impacting 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 reservation within the Town's ETJ is particularly significant.

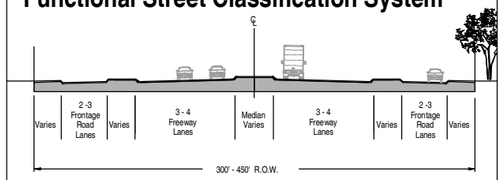
- *Zoning and Land Use Control*
  The adequacy of existing and planned thoroughfares must be taken into account in all changes of zoning and land use. When such changes occur, the space for street use (i.e. right-of-way) should be provided commensurate with the overall use contemplated within the area.

- *Geometric Design of Roads and Highways*
  While the Town's Thoroughfare Plan illustrates a general concept of arterials and collector streets, it is mandatory these roads are designed and constructed to meet the standards designated in AASHTO's *A Policy on Geometric Design of Highways and Streets, 2004*. Additional right-of-way may be required at the time of development and/or platting in order to meet the true intent of the Thoroughfare Plan.

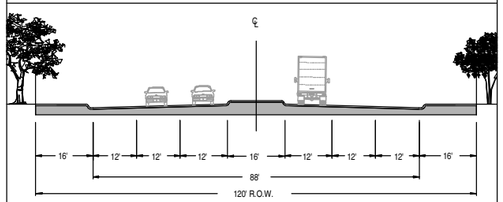
- *Building Lines*
  Where widening of an existing thoroughfare right-of-way is contemplated, buildings should be set back to allow for the planned widening to ensure that the use functions properly with the new thoroughfare after the proposed improvement is made. In some cases, it will be desirable to establish building lines by ordinance to help ensure the orderly and uniform development of thoroughfare frontage.

- *Other Considerations*
  Certain aspects of the Plan, such as access controls along major arterials, should be implemented through other design and technical standards that may or may not be included in the Town Development Standards. Examples of other standards that need to be implemented are sight and visibility standards and joint (i.e. shared) access standards. Impact fees should also be established under separate process.

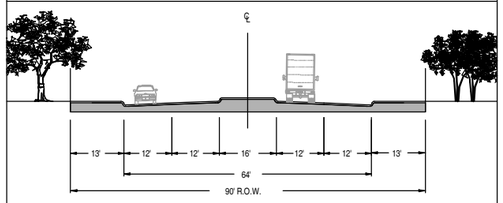
Functional Street Classification System



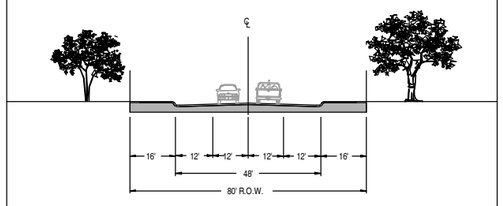
Controlled Access Freeway



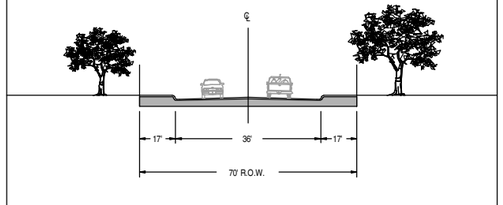
Type A Major Arterial



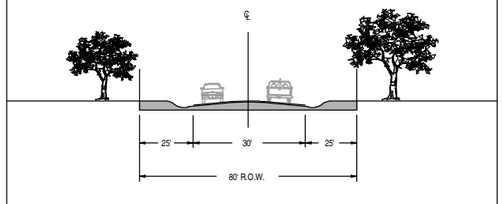
Type B Minor Arterial



Type C Major Collector



Type D Minor Collector



Type E Rural Collector

Denton
Northlake
Argyle
Corral City
Flower Mound
Northlake
Bartonville
Crawford Rd.
Country Club Rd.
Hickory Hill Rd.
Old Justin Rd.
Harpole Rd.
Sam Davis Rd.
Frenchtown Rd.
F.M. 407
F.M. 1830
Gibbons Rd.
Interstate Hwy. 35 W
C. Taylor Rd.
IH 35 FRONTAGE RD.
U.S. Hwy. 377
UP RR
Gateway Blvd.
Stonecrest Rd.
ROBSON RANCH RD.
OLD JUSTIN RD.
SAM DAVIS RD.
PRAIRIE MOUND CT.
KNOB HILL
VALLEY VIEW
SKYLINE
JOHNS WELL
SUNSET
SURREY
HERRIOTT
REDBUD
OAK
KAY
FRONT
EAGLE
VILLAGE WAY
HEARTH TERRACE
HARRISON
COLLINS
DALLAS
DENTON
RUSK
CHISHOLM
OREGON
OLD TOWN BLVD.
HICKORY RIDGE
SQUIRREL RUN
WESTOVER
TIMBERVIEW
COOK
BEN BOYD
BAINS
MEADOWWOOD
PARTRIDGE
PRIMROSE
WOODS
BIRCH
ROBIN
JOYCE
CHARYL LYNN
MANOR
FOREST
PRAIRIE
PIONEER
SHENANDOAH
RANCH
WINCHESTER
REMINGTON
KEITH
DANTE
GENOA
INDIAN
FATE
MEADOWVIEW
THOUSAND OAKS
CACTUS
OAKRIDGE
SUNRISE
STONECREST RD.
ROLLING ACRES
COCHRAN
DOVE CREEK
BADMINTON
DYER
ROADRUNNER
TRIPLE CROWN
APPALOOSA
PALOMINO
FOX
NOBLE CHAMPIONS
STONEBRIDGE
GOLD HILL
STEEPLECHASE
TUDOR
PECAN
PECAN ACRES
WHISPERING TRAILS
KNIGHT
FAIRWAY ACRES
QUAIL CREEK
BRIAR HILL
SPRING MEADOWAY
THORNRIDGE CIR
THORNRIDGE
WILDFLOWER
CREEKSIDE
COUNTRY LAKES
WOODLAND
SANDY
WOODED
CROOKED
HIDDEN
OAK RIDGE
FINCHER
CEDAR CREEK
GRANITE
SHADY OAK
SHADY OAKS
WHITEBRIDGE
HUNTER HILL
HICKORY CR
COSMOS
NATURE
BRITT
JEFF
TAWAKONI
EAGLE MOUNTAIN
BROOKSIDE
PALMORE
HAVENWAY
LAKEWAY
ORANGEWOOD
TRAILWOOD
PERIMETER
INDENWOOD
35W
377

Legend

- Argyle Town Limits
- Argyle ETJ
- Depicts existing thoroughfare
- Depicts proposed thoroughfare
- Thoroughfares in Adjoining Municipalities
- Areas of Further Study

Map 1

Town of Argyle, Texas

Thoroughfare Plan

An Element of the Comprehensive Plan

December 2009
Amended April 2010

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