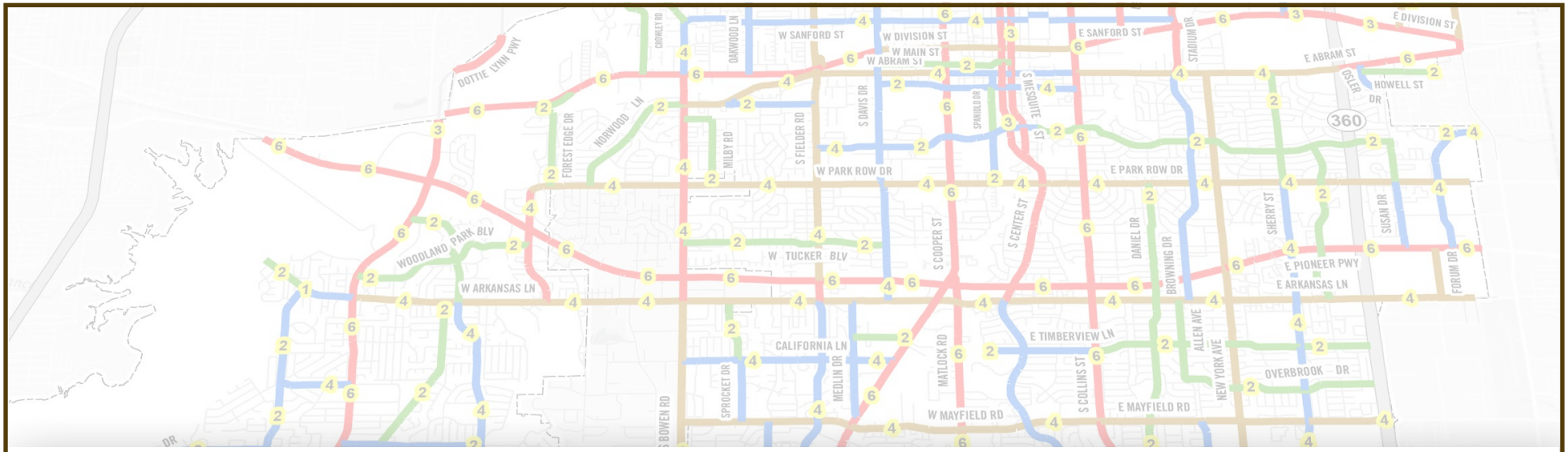
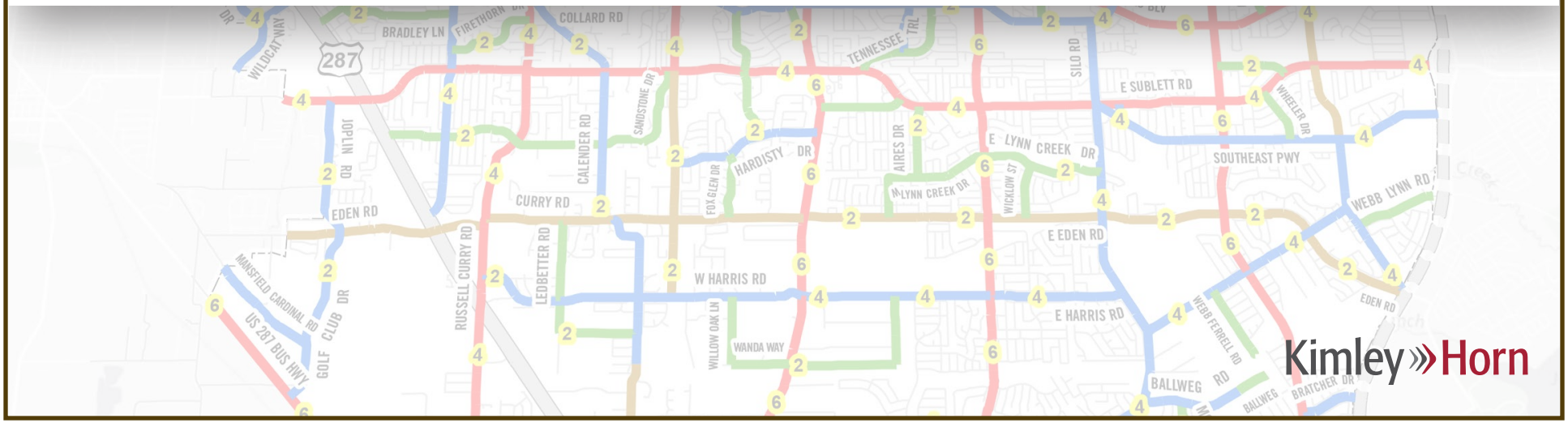


City of Arlington
Thoroughfare Development Plan

April 2017

ARLINGTON
THE AMERICAN DREAM CITY



Kimley»Horn

Acknowledgments

Mayor & City Council

Mayor Jeff Williams

Council Member Charlie Parker, District 1

Council Member Sheri Capehart, Mayor Pro Tem, District 2

Council Member Robert Rivera, District 3

Council Member Kathryn Wilemon, District 4

Council Member Lana Wolff, District 5

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Arlington Thoroughfare Development Plan

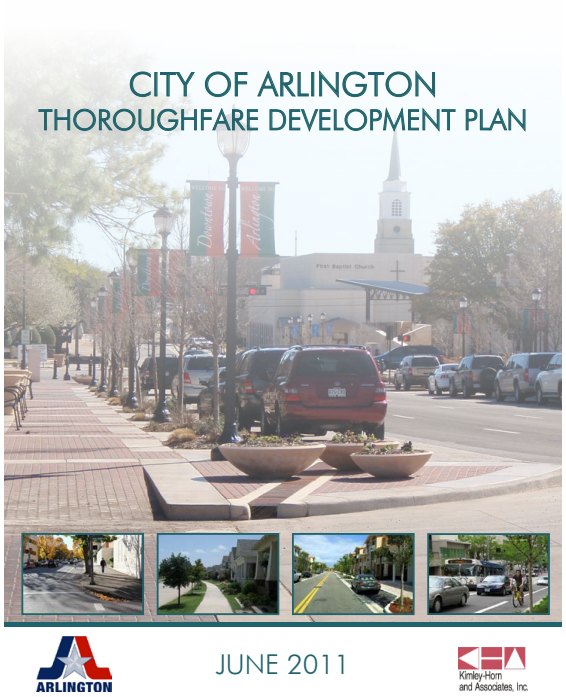
Contents

Appendix

Maps

Introduction

The Thoroughfare Development Plan (TDP) is a long-range plan that identifies the location and type of roadway facilities that are needed to meet projected long-term growth within the City of Arlington. The TDP serves as a tool to enable the City to preserve future corridors for transportation system development as the need arises. It also forms the basis for Arlington's roadway capital improvement program, roadway impact fees, and developer requirements. The TDP includes detailed information related to roadway classification, right-of-way requirements, design criteria, and number of through travel lanes for each thoroughfare within the City.



Overview

The purpose of this report is to provide the City of Arlington with recommendations to update the Thoroughfare Development Plan (TDP). The previous TDP, adopted in 2011, was based on anticipated growth within the City of Arlington and surrounding Cities through the year 2035. This update was initiated to account for changing travel patterns and updated socioeconomic data, as well as to evaluate roadway alternatives to the transportation network with projections to the year 2040.

The TDP utilized the Arlington TransCAD Subarea Model (ATCSM) as part of the technical component for the plan. The ATCSM provides average daily volume projections, level of service, and vehicle miles traveled (VMT) information which help inform decision makers in the planning of transportation infrastructure. The travel demand model in this application is used as a decision support tool, and to best reflect the impact of changing land uses, the ATCSM was updated to include the latest socioeconomic data. This report will focus on the recommendations from the traffic forecast. In addition, the **Appendix** outlines the ATCSM travel model update process and validation effort.

A major objective of the 2017 Thoroughfare Development Plan update is to evaluate the roadway network for recommended changes. The Thoroughfare Development Plan is a tool that assists the City of Arlington to make decisions regarding the transportation network and test transportation scenarios, including the impact that new land use and demographic information would have on the number of lanes, level of service, delay, connectivity, and other measures of effectiveness. The recommendations are summarized in this report.

Focus

The focus of the TDP update is to identify and evaluate future transportation needs to support the comprehensive land use vision and economic opportunities within the City of Arlington. There is a direct relationship between land use and transportation infrastructure that shapes everyday life. The planning decisions made to implement and build transportation infrastructure are important for the success of the City.

Report Layout

Recommended TDP Modifications
Each thoroughfare update included the 2017 TDP has an individual summary page in the report. These recommendations are based on travel demand model analysis.

Appendix
A. Model Basics
This section outlines the travel demand model update process and validation effort.

B. TransCAD Input Data
This section explains the network and land use data inputs that were updated and utilized in the travel demand model analysis.

C. Level of Service Overview
One of the primary outputs of a travel demand model is a level of service (LOS) assessment, used to quantify traffic congestion along specific thoroughfares and assigning a level of service score of A through F to city streets to reflect how well they operate. This section provides an overview of this thoroughfare analysis tool and how it is used to determine modifications to the Arlington thoroughfare network.

D. Flexible Design Strategies & Matrix (from 2011 TDP)
This section discusses the use of flexible design strategies to create unique, corridor-specific design characteristics on thoroughfares. This section explains street context specific to the City of Arlington and includes detailed design elements in the form of a flexible design matrix.

E. Planning Process (from 2011 TDP)
This section provides the framework for a planning process which results in an integrated approach to roadway design. It reviews the five steps that are used to take a project from the conceptual phase through final design under the flexible design approach.

F. Prioritization Process (from 2011 TDP)
This section details a prioritization process used to determine the most effective timing for mobility investments. It also discusses additional steps necessary for successful implementation of the TDP.

Maps
Maps included in the report summarize recommended modifications to the TDP and the capacity status of the 2017 TDP update, as well as a summary of results from the updated 2040 travel demand model.

City of Arlington
Thoroughfare Development Plan Update
Recommended Updates

Thoroughfares

- Existing
- Future
- Existing Highway
- Future Highway

2017 Updates

- Modified Functional Class
- Modified Number of Lanes
- New Roadway
- Remove Roadway from TDP
- City Limits

Date: 3/22/2017

*See page 20 for more detail

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Summary of Recommended Modifications

Map ID	Road Segment	Limits	Existing Classification	Recommended Change	Justification
1	Washington Dr	Cooper St to Collins St	Major Collector (4 lanes)	Major Collector (2 lanes)	This roadway is in a built out residential area, and a significant increase in volumes is not expected. The roadway is currently only marked for 2 lanes and is expected to adequately serve future volumes.
2	Baird Farm Rd	Brown Blvd to Lamar Blvd	Major Collector (4 lanes)	Major Collector (2 lanes)	Baird Farm Road is currently constructed as 2-lane roadway with a continuous turn lane and bike lanes. Future volumes do not warrant restriping to 4 lanes for additional capacity.
3	Lamar Blvd	I-30 Ramps to Ryan Plaza Dr	Major Arterial (6 lanes)	Major Arterial (4 lanes)	Lamar Boulevard is currently built as a 4-lane roadway. 4 lanes are expected to support future volumes. Maintaining a consistent 4-lane corridor is recommended, considering the planned 3-lane cross section and future urban residential and mixed-use development east of Ryan Plaza Dr, as well as the 4-lane classification west of the I-30 ramps to Fielder Road.
4	N Bowen Rd	Westwood Dr to Sanford Dr	Major Collector (4 lanes)	Minor Collector (2 lanes)	North Bowen Road is currently built as a 2-lane roadway. 4 lanes would require widening the roadway in a built out residential area, and future model volumes support maintaining 2 lanes.
5	Randol Mill Rd	Fielder Rd to Cooper St	Major Arterial (6 lanes)	Minor Arterial (4 lanes)	Randol Mill Road is currently built as a 4-lane roadway. Forecasted volumes indicate Randol Mill will be near capacity at 4 lanes by 2040. However, 6 lanes would be difficult to implement given current right-of-way and development constraints.
6	Nolan Ryan Expy	Randol Mill Rd to Cowboys Way	Major Collector (4 lanes)	Remove from TDP	This segment of Nolan Ryan Expressway primarily serves internal circulation of the existing Rangers Stadium and parking sites. Removing this roadway segment from the TDP to accommodate redevelopment has minimal impact on the surrounding thoroughfares, and the trips (8,000 veh/day) are expected to load directly onto adjacent arterials with available capacity (Ballpark Way and Randol Mill Rd).
7	Great Southwest Pkwy	N. City Limits to S. City Limits	Major Arterial (6 lanes)	Major Arterial (4 lanes)	Great Southwest Parkway is currently built as a 4-lane roadway. Future volumes are not expected to increase. Frontage roads along I-30 and improved access to SH 360 will act as circulation relief for this area.
8	Abram St	Cooper St to Collins St	Minor Arterial (4 lanes)	Major Collector (2 lanes)	Abram Street between Cooper and Collins has been redesigned as a 2-lane roadway with turn lanes at intersections. Construction is slated to begin in 2017. Reducing Abram Street to a 2-lane roadway shifts ~6,000 vehicles to adjacent roadways as compared to the 4-lane existing TDP scenario. Other east-west thoroughfares with available capacity (Border St, Division St and Mitchell St) are expected to absorb this small difference in volumes without issue.

Summary of Recommended Modifications

Map ID	Road Segment	Limits	Existing Classification	Recommended Change	Justification
9	New York Ave	Abram St to Park Row Dr	Minor Arterial (4 lanes)	Minor Arterial (2 lanes)	New York Avenue is currently built as a 2-lane roadway with a continuous turn lane. Maintaining a 2-lane cross section is consistent with the New York Ave Corridor Plan recommendations and planned roadway improvements. Future traffic volumes are not anticipated to significantly increase, and additional capacity is not warranted.
10	Bowman Springs Rd/ W. Pleasant Ridge Rd	I-20 to Poly Webb Rd	Minor Arterial (4 lanes)	Major Collector (2 lanes)	Bowman Springs Road is currently built as a 2-lane roadway from Interstate 20 to Enchanted Bay Boulevard. This area is predominantly built out and future volumes are not expected to significantly increase. A major collector cross section would be appropriate for the residential context.
11	Bardin Rd	Center St to Collins St	Major Arterial (4 lanes)	Remove from TDP	The removal of Bardin Road from the TDP between Center Street and Collins Street distributed east-west trips onto surrounding thoroughfares with available capacity, including the I-20 frontage road and Green Oaks Boulevard. Volumes on Bardin Road east of Collins Street either were reduced or remained the same.
12	Petra Dr	Wimbledon Dr to Tennessee Trl	Major Collector (4 lanes)	Major Collector (2 lanes)	Petra Drive is currently built as a 2-lane roadway. This roadway is in a built out residential area, and a significant increase in volumes is not expected. The roadway is currently only marked for 2 lanes and would require pavement widening for 4 lanes in some sections.
13	Golf Club Dr*	Eden Rd to Business 287	Not currently on TDP	Add to TDP as a 2-lane Major Collector	Golf Club Drive from Eden Road to Business 287 should be added as a Major Collector to provide additional north-south connectivity in the area. The Golf Club Drive extension will be better served with an improved connection to Business 287 near Hudson Cemetery Road. With this connection, the segment of Mansfield Cardinal Road south of Hudson Cemetery will not be needed.
	*For safety reasons, the alignment of Golf Club Drive shall be shifted to the west in the area of Tierra Verde Practice Hole No. 1. The roadway shall be located a minimum of 200 feet west of the golf course property line at a distance of approximately 1,000 feet south of the golf course entry drive. The existing roadway (150 feet south of the golf course drive) and the intersection of Mansfield Cardinal Road shall remain at the current alignment. The roadway should be constructed as a 2-lane divided Major Collector with medians for the full length of Golf Club Drive.				
14	N Walnut Creek Dr	South of Turner Warnell Rd	Major Collector (2 lanes)	Minor Arterial (4 lanes)	Currently built as a 4-lane Minor Arterial, and this classification matches the Mansfield Thoroughfare Plan.
15	Loretta Day Dr	Ballweg Rd to S Collins St	Major Collector (4 lanes)	Remove from TDP; downgrade to local street and keep connectivity to S. Collins	Loretta Day Drive (north of Collins Street) serves a limited residential area which is not expected to generate a significant number of trips in the future as the area is built out. The 2040 projected volume of approximately 1,000 vehicles per day is within the capacity of a 2-lane local street.
16	Loretta Day Dr	S Collins St to Ragland Rd	Major Collector (4 lanes)	Minor Collector (2 lanes)	Projected volumes do not warrant a 4-lane Major Collector, but Minor Collector connectivity will be beneficial to serve circulation between future development and Debbie Lane/SH 360.

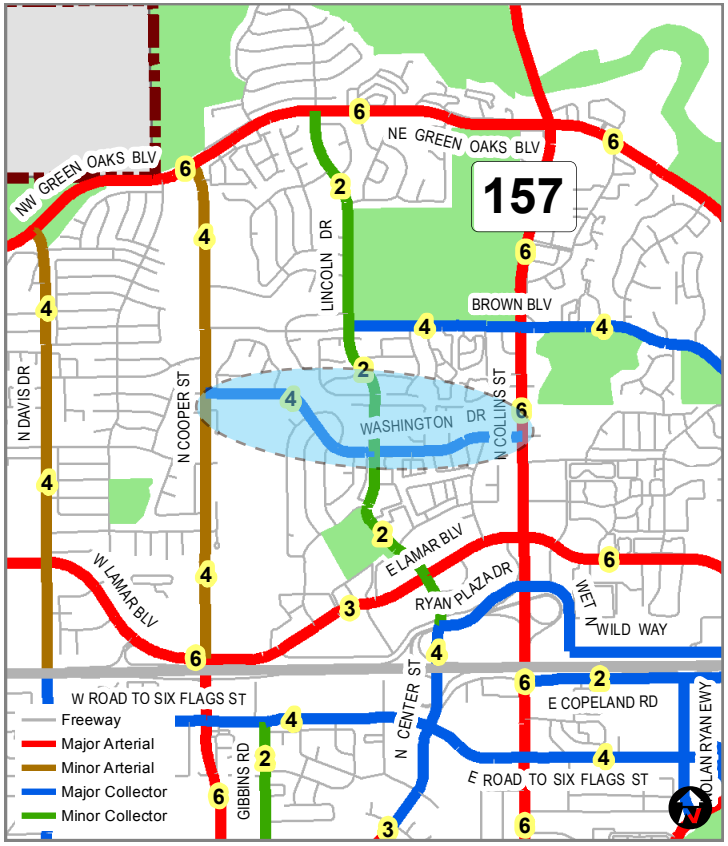
Recommended Modification

Washington Drive (Cooper Street to Collins Street)

Thoroughfare Evaluation

Existing Functional Class	Major Collector (4 lanes)
Land Use Context	Suburban Residential
Base Year Volume	3,000 veh/day
Base Year Level of Service	Acceptable (A-B-C)

2040 Projected Volume	4,000 veh/day
2040 Level of Service (4 lanes)	Acceptable (A-B-C)
2040 Volume/Capacity Ratio (4 lanes)	0.1
2040 Level of Service (2 lane Alternative)	Acceptable (A-B-C)
2040 Volume/Capacity Ratio (2 lane Alternative)	0.4



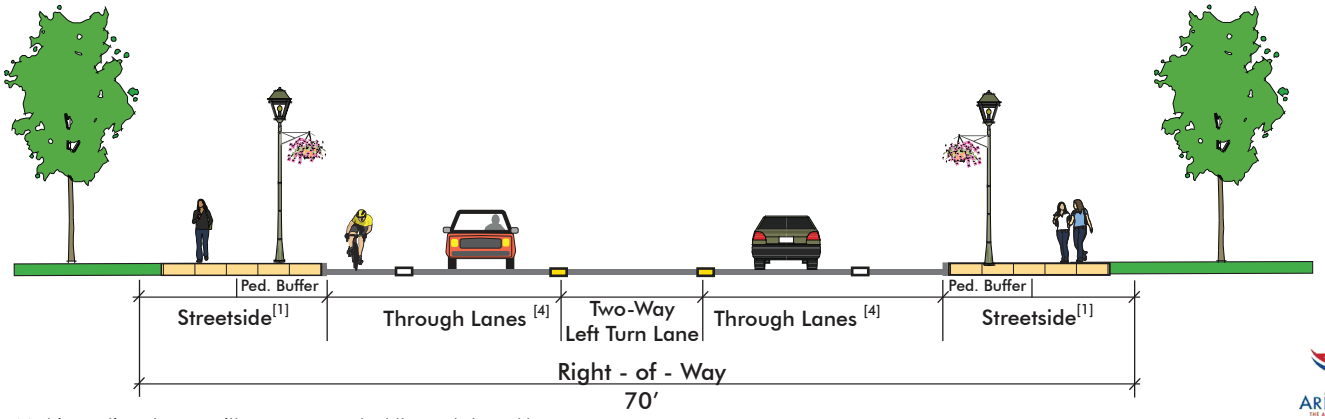
Existing TDP Functional Class & Number of Lanes

Roadway Observations

- This roadway is in a built out residential area, and a significant increase in volumes is not expected. The roadway is currently only marked for 2 lanes and is expected to adequately serve future volumes.
- **Recommendation: Downgrade classification to a Major Collector (2 lanes)**

Recommended Cross Section (for example/illustrative purposes only)

2-Lane Major Collector



Note: Typical TDP Flexible Design Matrix section shown with recommended through travel lanes.

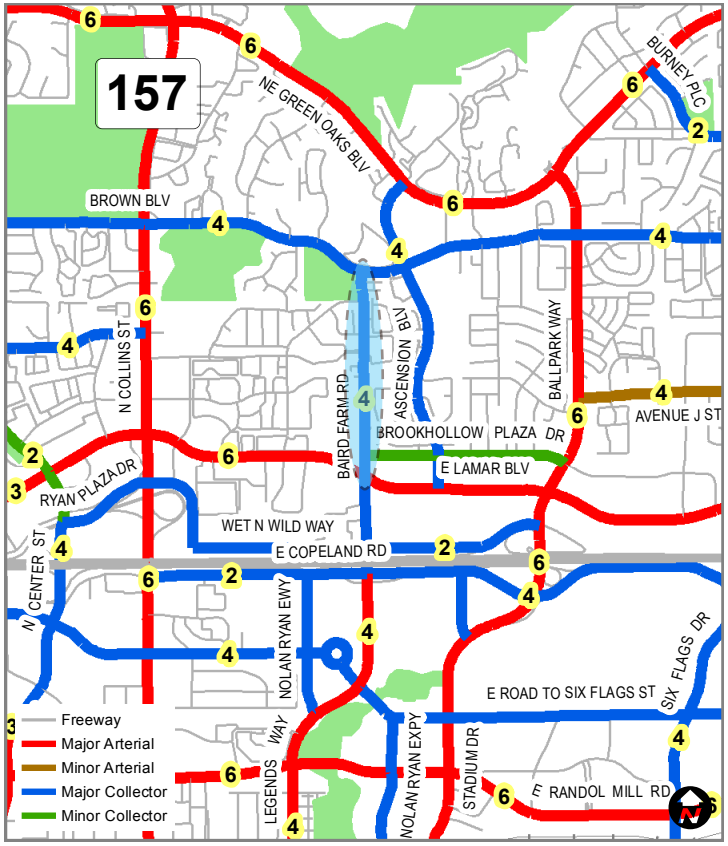
Recommended Modification

Baird Farm Road (Brown Boulevard to Lamar Boulevard)

Thoroughfare Evaluation

Existing Functional Class	Major Collector (4 lanes)
Land Use Context	Urban Residential
Base Year Volume	9,000-13,000 veh/day
Base Year Level of Service	Tolerable (D-E)

2040 Projected Volume	9,000-19,000 veh/day
2040 Level of Service (4 lanes)	Tolerable (D-E)
2040 Volume/Capacity Ratio (4 lanes)	0.4-0.7
2040 Level of Service (2 lanes)	Tolerable (D-E)
2040 Volume/Capacity Ratio (2 lanes)	0.5-0.8



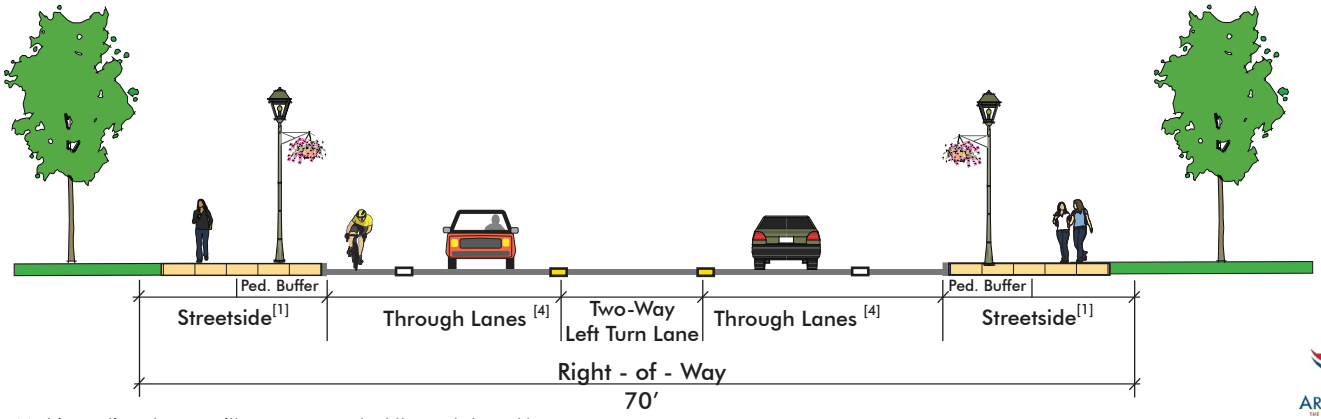
Existing TDP Functional Class & Number of Lanes

Roadway Observations

- Baird Farm Road is currently constructed as 2-lane roadway with a continuous turn lane and bike lanes. Future volumes do not warrant restriping to 4 lanes for additional capacity.
- **Recommendation: Downgrade classification to a Major Collector (2 lanes)**

Recommended Cross Section (for example/illustrative purposes only)

2-Lane Major Collector



Note: Typical TDP Flexible Design Matrix section shown with recommended through travel lanes.

Recommended Modification

Lamar Boulevard (I-30 Ramps to Ryan Plaza Drive)

Thoroughfare Evaluation

Existing Functional Class	Major Arterial (6 lanes)
Land Use Context	Commercial
Base Year Volume	27,000-29,000 veh/day
Base Year Level of Service	Tolerable (D-E)

2040 Projected Volume	22,000 veh/day
2040 Level of Service (6 lanes)	Acceptable (A-B-C)
2040 Volume/Capacity Ratio (6 lanes)	0.5
2040 Level of Service (4 lane Alternative)	Tolerable (D-E)
2040 Volume/Capacity Ratio (4 lane Alternative)	0.7

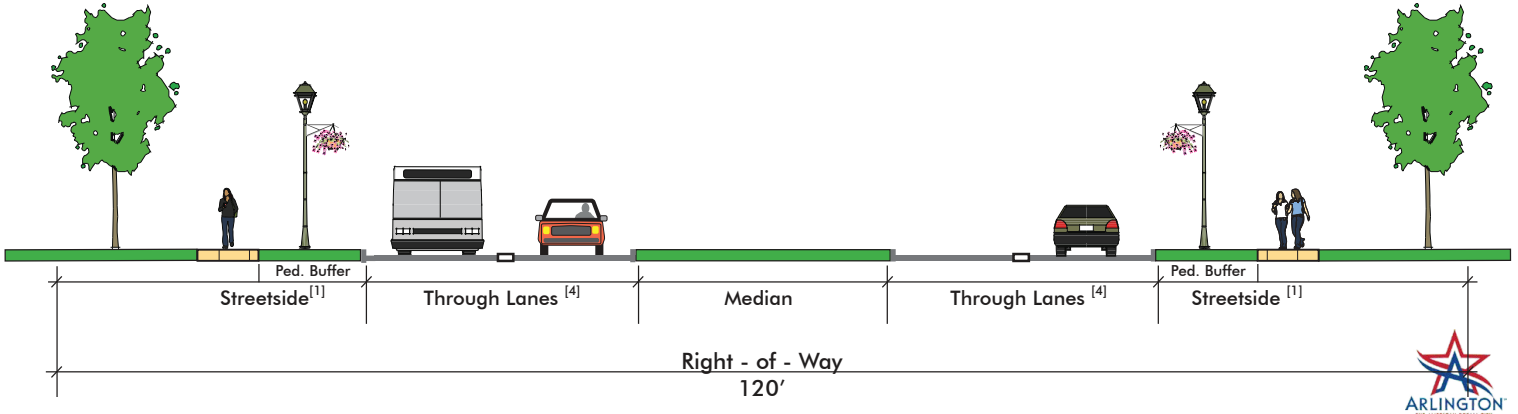
Existing TDP Functional Class & Number of Lanes

Roadway Observations

- Lamar Boulevard is currently built as a 4-lane roadway.
- 4 lanes are expected to support future volumes. Maintaining a consistent 4-lane corridor is recommended, considering the planned 3-lane cross section and future urban residential and mixed-use development east of Ryan Plaza Dr, as well as the 4-lane classification west of the I-30 ramps to Fielder Road.
- **Recommendation: Downgrade classification to a Major Arterial (4 lanes)**

Recommended Cross Section (for example/illustrative purposes only)

4-Lane Major Arterial



Note: Typical TDP Flexible Design Matrix section shown with recommended through travel lanes.

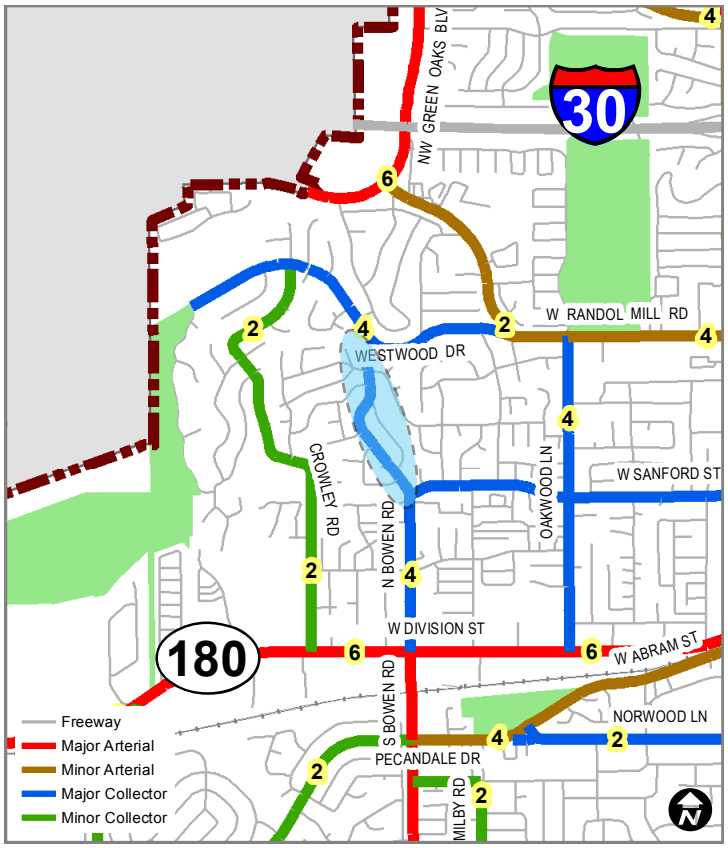
Recommended Modification

North Bowen Road (Westwood Road to Sanford Drive)

Thoroughfare Evaluation

Existing Functional Class	Major Collector (4 lanes)
Land Use Context	Suburban Residential
Base Year Volume	4,000 veh/day
Base Year Level of Service	Acceptable (A-B-C)

2040 Projected Volume	4,000 veh/day
2040 Level of Service (4 lanes)	Acceptable (A-B-C)
2040 Volume/Capacity Ratio (4 lanes)	0.1
2040 Level of Service (2 lane Alternative)	Acceptable (A-B-C)
2040 Volume/Capacity Ratio (2 lane Alternative)	0.4



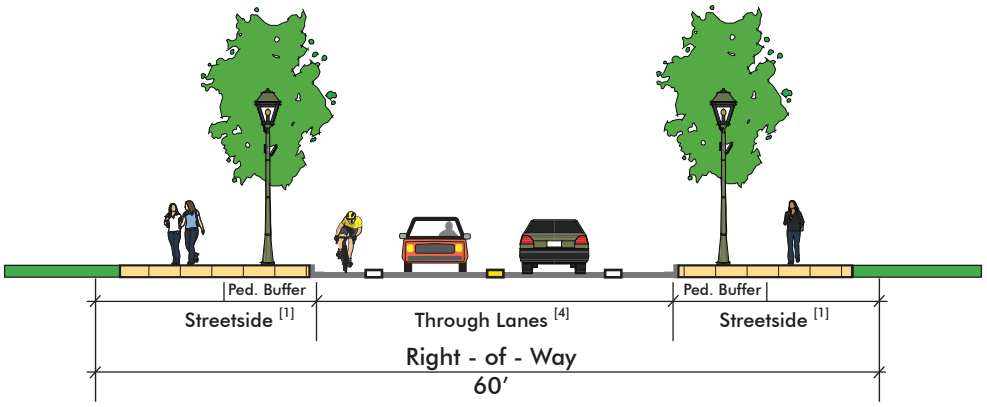
Existing TDP Functional Class & Number of Lanes

Roadway Observations

- North Bowen Road is currently built as a 2-lane roadway.
- 4 lanes would require widening the roadway in a built out residential area, and future model volumes support maintaining 2 lanes.
- **Recommendation: Downgrade classification to a Minor Collector (2 lanes)**

Recommended Cross Section (for example/illustrative purposes only)

2-Lane Minor Collector



Note: Typical TDP Flexible Design Matrix section shown with recommended through travel lanes.

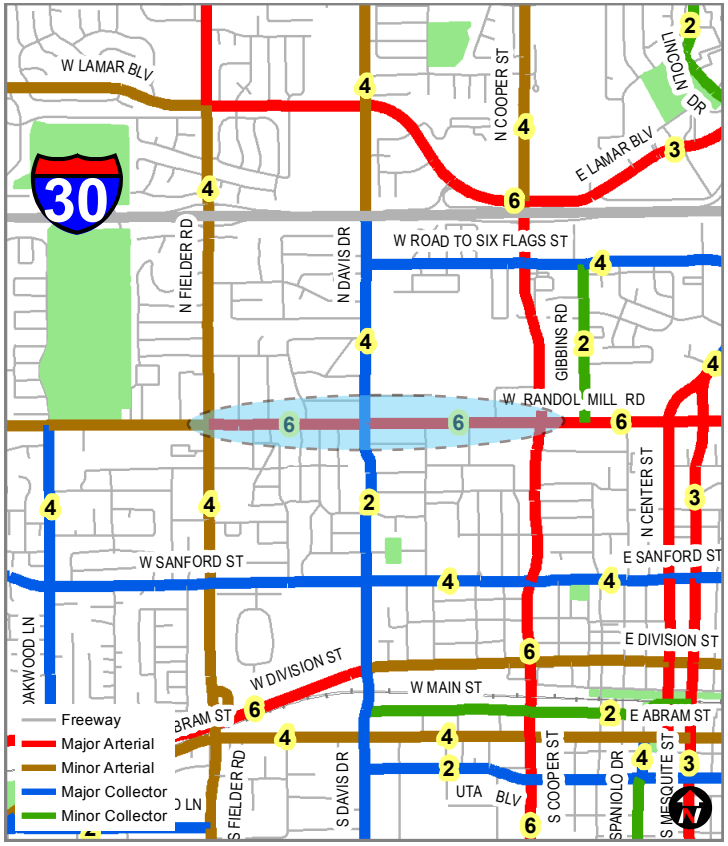
Recommended Modification

Randol Mill Road (Fielder Street to Cooper Street)

Thoroughfare Evaluation

Existing Functional Class	Major Arterial (6 lanes)
Land Use Context	Commercial/Residential
Base Year Volume	25,000 veh/day
Base Year Level of Service	Tolerable (D-E)

2040 Projected Volume	27,000 veh/day
2040 Level of Service (6 lanes)	Acceptable (A-B-C)
2040 Volume/Capacity Ratio (6 lanes)	0.6
2040 Level of Service (4 lane Alternative)	Tolerable (D-E)
2040 Volume/Capacity Ratio (4 lane Alternative)	0.9



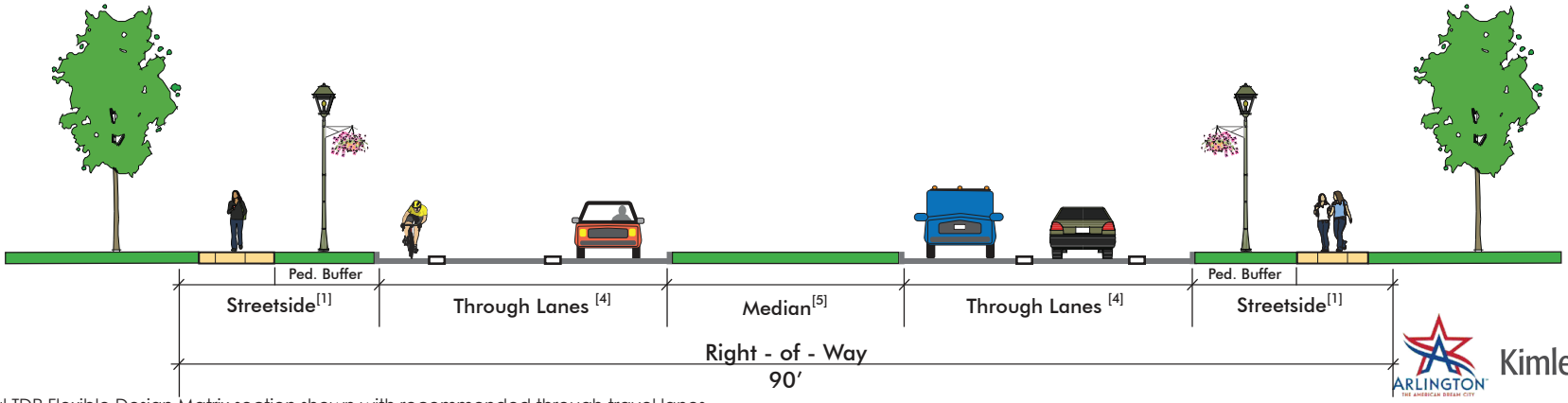
Existing TDP Functional Class & Number of Lanes

Roadway Observations

- Randol Mill Road is currently built as a 4-lane roadway.
- Forecasted volumes indicate Randol Mill will be near capacity at 4 lanes by 2040 but still within a tolerable level of service. However, 6 lanes would be difficult to implement given current right-of-way and development constraints.
- **Recommendation: Downgrade classification to a Minor Arterial (4 lanes)**

Recommended Cross Section (for example/illustrative purposes only)

4-Lane Minor Arterial



Note: Typical TDP Flexible Design Matrix section shown with recommended through travel lanes.

Recommended Modification

Nolan Ryan Expressway (Randol Mill Road to Cowboys Way)

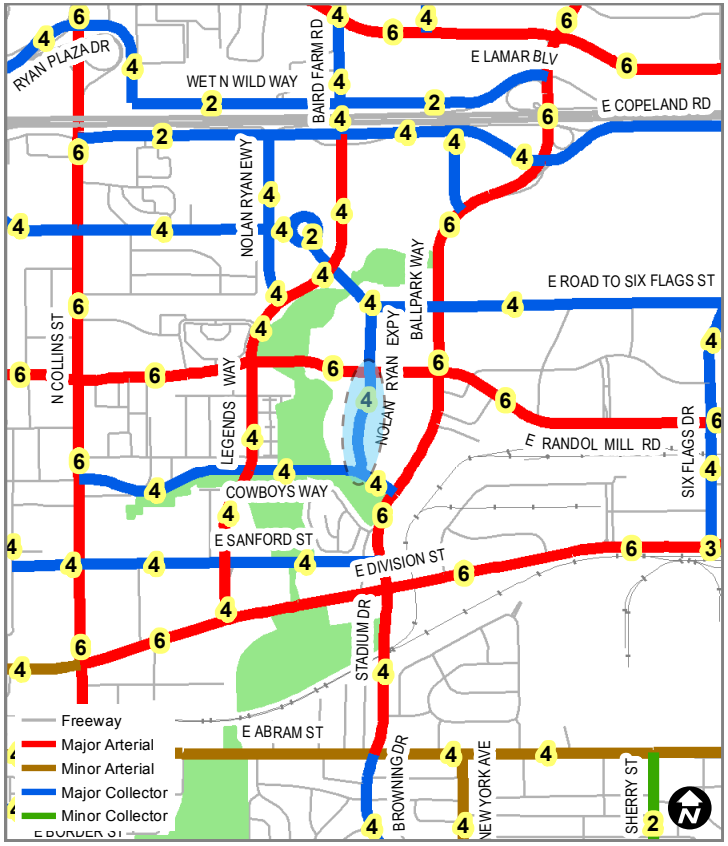
Thoroughfare Evaluation

Existing Functional Class	Major Collector (4 lanes)
Land Use Context	Entertainment Activity Center/Future Mixed-Use
Base Year Volume	7,000 veh/day
Base Year Level of Service	Acceptable (A-B-C)

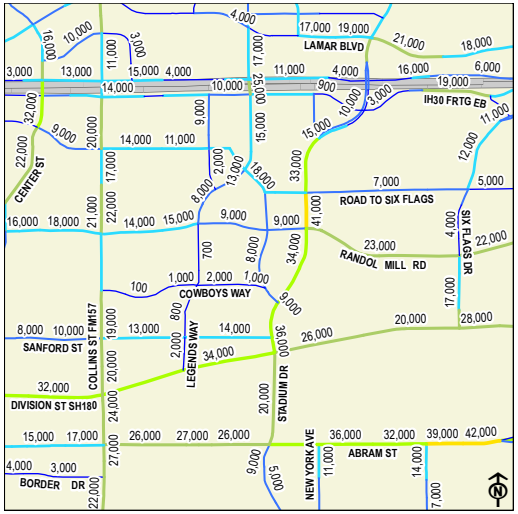
2040 Projected Volume	8,000 veh/day
2040 Level of Service	Acceptable (A-B-C)
2040 Volume/Capacity Ratio	0.4

Roadway Observations

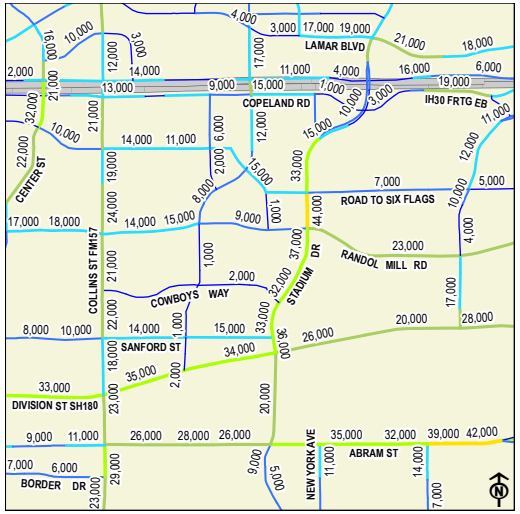
- This segment of Nolan Ryan Expressway primarily serves internal circulation of the existing Rangers Stadium and parking sites. Removing this roadway segment from the TDP to accommodate redevelopment has minimal impact on the surrounding thoroughfares, and the trips (8,000 veh/day) are expected to load directly onto adjacent arterials with available capacity (Ballpark Way and Randol Mill Rd).
- **Recommendation: Removal of Nolan Ryan Expressway from the TDP**



Existing TDP Functional Class & Number of Lanes



2040 Volumes with Nolan Ryan Expy



2040 Volumes without Nolan Ryan Expy

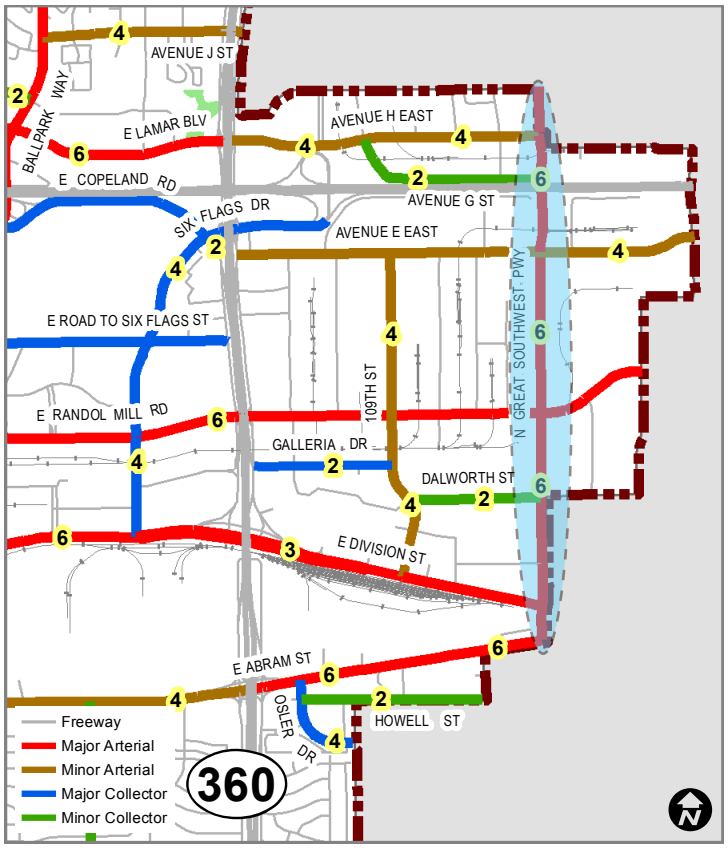
Recommended Modification

Great Southwest Parkway (North City Limits to South City Limits)

Thoroughfare Evaluation

Existing Functional Class	Major Arterial (6 lanes)
Land Use Context	Industrial
Base Year Volume	15,000-22,000 veh/day
Base Year Level of Service	Tolerable (D-E)

2040 Projected Volume	20,000 veh/day
2040 Level of Service (6 lanes)	Acceptable (A-B-C)
2040 Volume/Capacity Ratio (6 lanes)	0.4
2040 Level of Service (4 lane Alternative)	Tolerable (D-E)
2040 Volume/Capacity Ratio (4 lane Alternative)	0.7



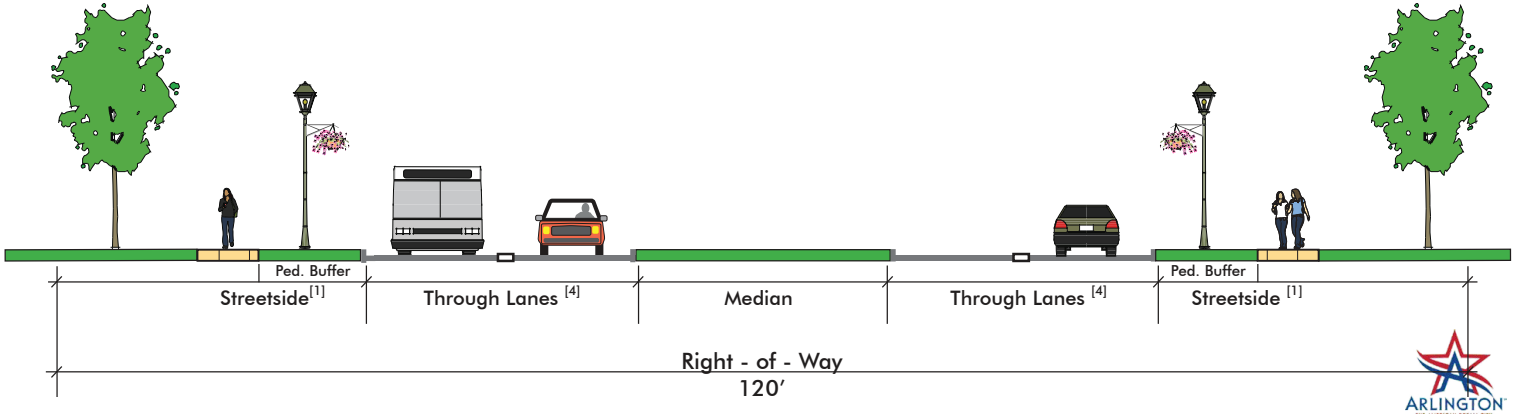
Existing TDP Functional Class & Number of Lanes

Roadway Observations

- Great Southwest Parkway is currently built as a 4-lane roadway.
- Future volumes are not expected to increase. Frontage roads along I-30 and improved access to SH 360 will act as circulation relief for this area.
- **Recommendation: Downgrade classification to a Major Arterial (4 lanes)**

Recommended Cross Section (for example/illustrative purposes only)

4-Lane Major Arterial



Note: Typical TDP Flexible Design Matrix section shown with recommended through travel lanes.

Recommended Modification

Abram Street (Cooper Street to Collins Street)

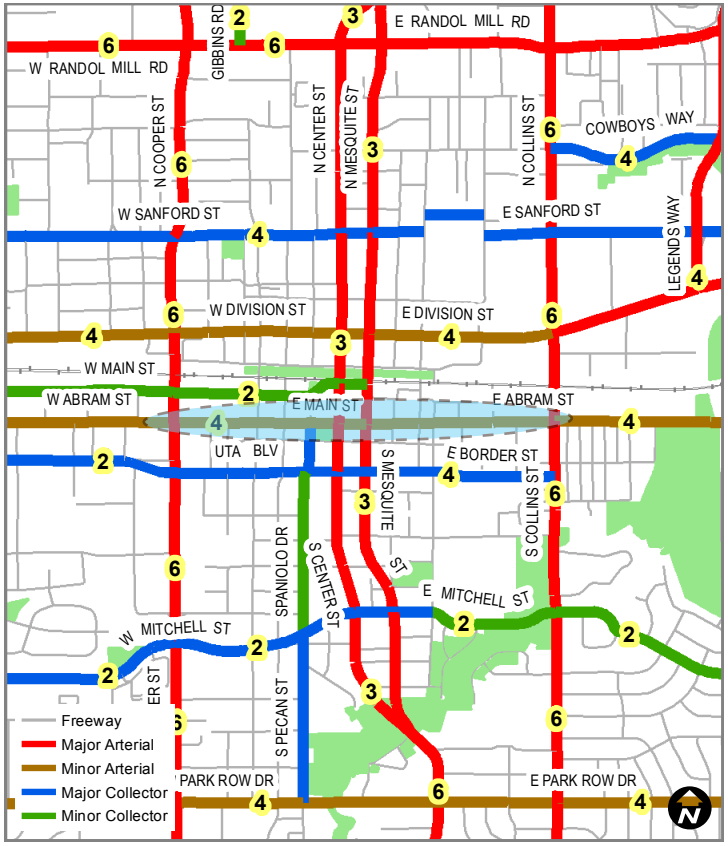
Thoroughfare Evaluation

Existing Functional Class	Minor Arterial (4 lanes)
Land Use Context	Downtown/Urban Center
Base Year Volume (4 Lanes)	10,000-18,000 veh/day
Base Year Level of Service	Tolerable (D-E)

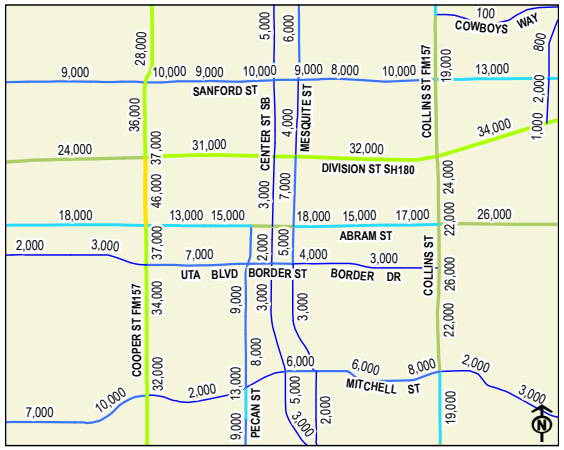
2040 Projected Volume (2 Lanes)	9,000-14,000 veh/ day
2040 Level of Service	Tolerable (D-E)
2040 Volume/Capacity Ratio	0.7

Roadway Observations

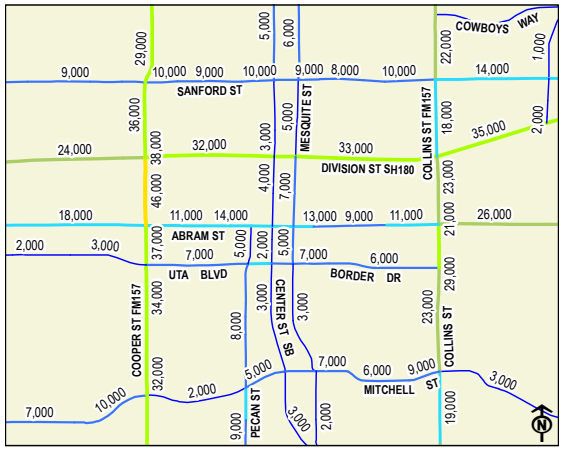
- Abram Street between Cooper and Collins has been redesigned as a 2-lane roadway with turn lanes at intersections. Construction is slated to begin in 2017.
- Reducing Abram Street to a 2-lane roadway shifts ~6,000 vehicles to adjacent roadways as compared to the 4-lane existing TDP scenario. Other east-west thoroughfares with available capacity (Border St, Division St and Mitchell St) are expected to absorb this small difference in volumes without issue.
- **Recommendation: Under the forecasted conditions, a 2-lane Major Collector section with turn lanes at intersections on Abram Street is anticipated to have adequate capacity.**



Existing TDP Functional Class & Number of Lanes



2040 Volumes with 4-Lane Abram Street



2040 Volumes with 3-Lane Abram Street

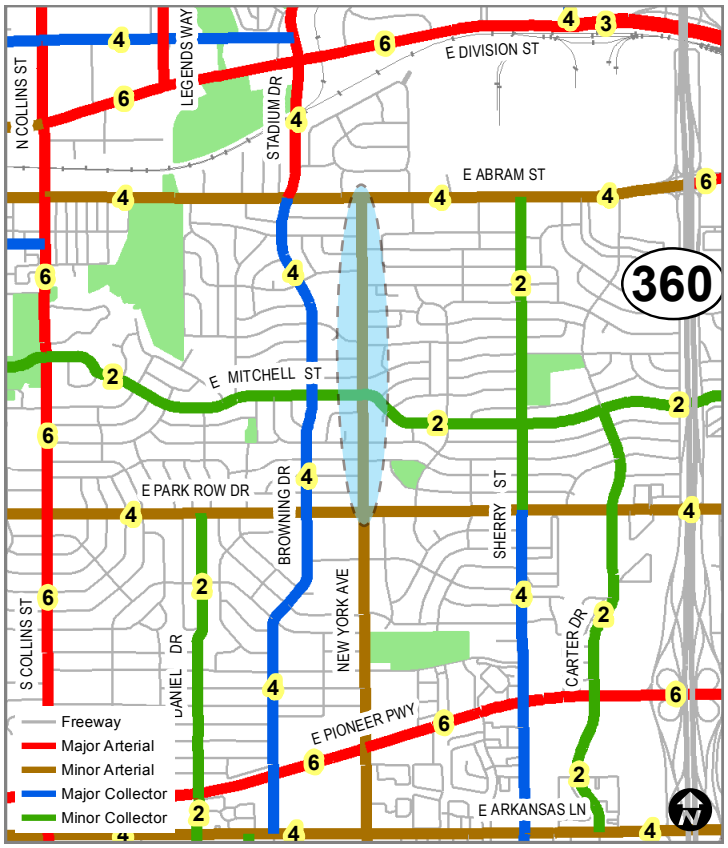
Recommended Modification

New York Avenue (Abram Street to Park Row Drive)

Thoroughfare Evaluation

Existing Functional Class	Minor Arterial (4 lanes)
Land Use Context	Residential
Base Year Volume	7,000-8,000 veh/day
Base Year Level of Service	Acceptable (A-B-C)

2040 Projected Volume	7,000-9,000 veh/day
2040 Level of Service (4 lanes)	Acceptable (A-B-C)
2040 Volume/Capacity Ratio (4 lanes)	0.3
2040 Level of Service (2 lane Alternative)	Acceptable (A-B-C)
2040 Volume/Capacity Ratio (2 lane Alternative)	0.5



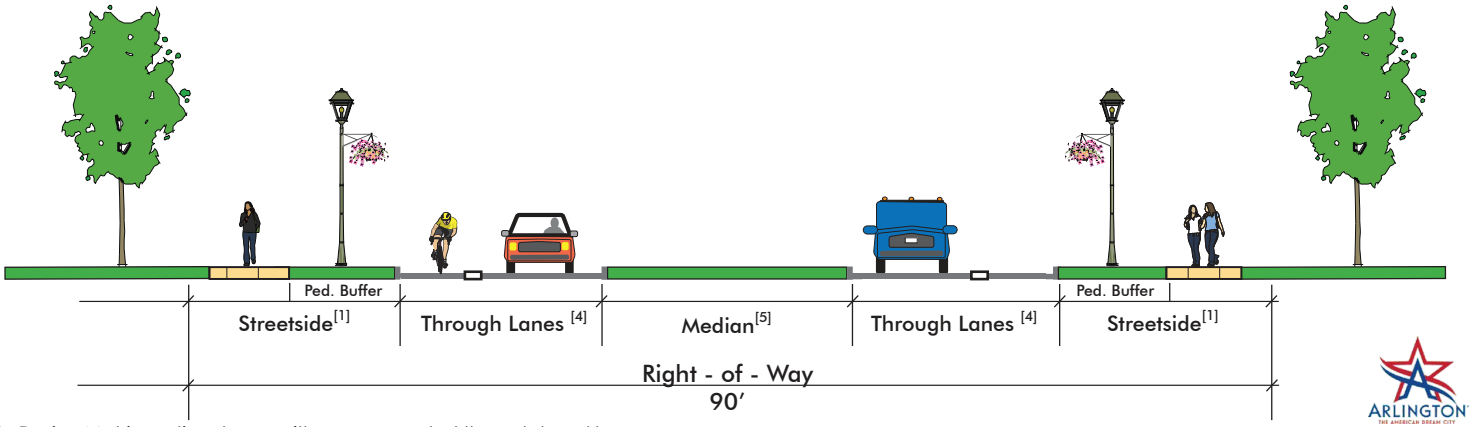
Existing TDP Functional Class & Number of Lanes

Roadway Observations

- New York Avenue is currently built as a 2-lane roadway with a continuous turn lane.
- Maintaining a 2-lane cross section is consistent with the New York Ave Corridor Plan recommendations and planned roadway improvements.
- **Recommendation: Downgrade classification to a Minor Arterial (2 lanes)**

Recommended Cross Section (for example/illustrative purposes only)

2-Lane Minor Arterial



Note: Typical TDP Flexible Design Matrix section shown with recommended through travel lanes.

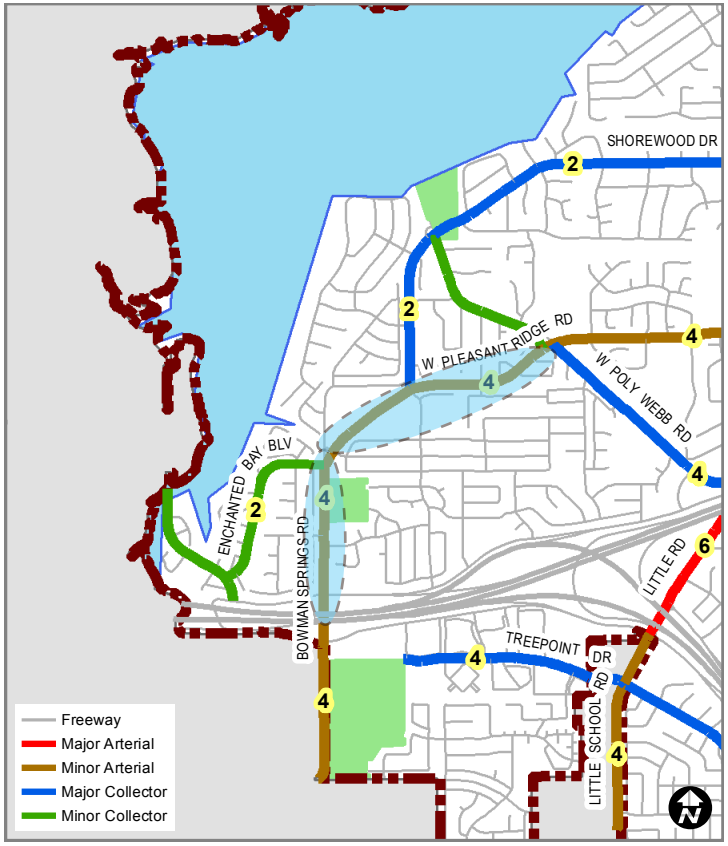
Recommended Modification

Bowman Springs Road/West Pleasant Ridge Road (I-20 to Poly Webb Road)

Thoroughfare Evaluation

Existing Functional Class	Minor Arterial (4 lanes)
Land Use Context	Suburban Residential
Base Year Volume (I-20 to Shorewood Dr)	1,000-5,000 veh/day
Base Year Level of Service	Acceptable (A-B-C)

2040 Projected Volume	7,000-11,000 veh/day
2040 Level of Service (4 lanes)	Acceptable (A-B-C)
2040 Volume/Capacity Ratio (4 lanes)	0.4
2040 Level of Service (2 lane Alternative)	Tolerable (D-E)
2040 Volume/Capacity Ratio (2 lane Alternative)	0.7



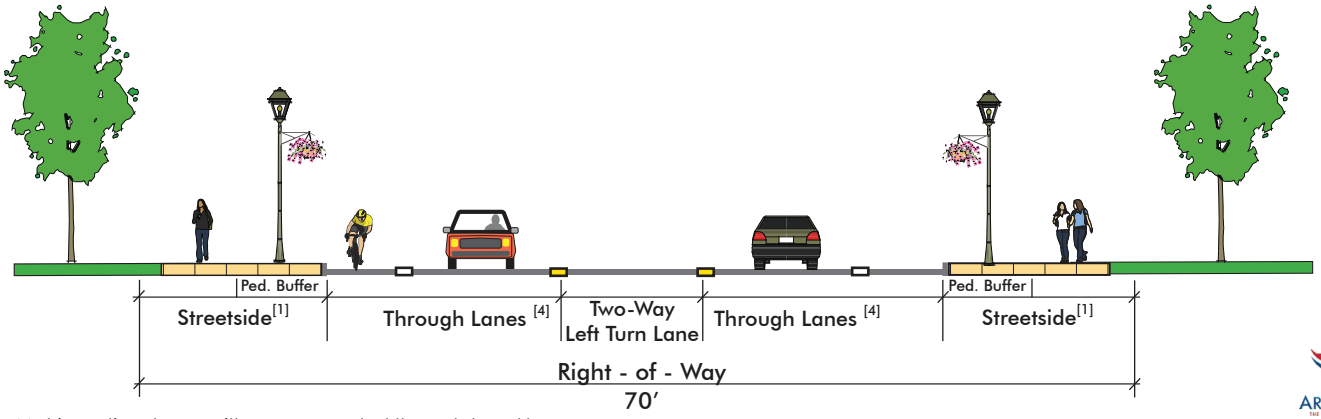
Existing TDP Functional Class & Number of Lanes

Roadway Observations

- Bowman Springs Road is currently built as a 2-lane roadway from Interstate 20 to Enchanted Bay Boulevard.
- This area is predominantly built out and future volumes are not expected to significantly increase. A major collector cross section would be appropriate for the residential context.
- **Recommendation: Downgrade classification to a Major Collector (2 lanes)**

Recommended Cross Section (for example/illustrative purposes only)

2-Lane Major Collector



Note: Typical TDP Flexible Design Matrix section shown with recommended through travel lanes.

Recommended Modification

Bardin Road (Center Street to Collins Street)

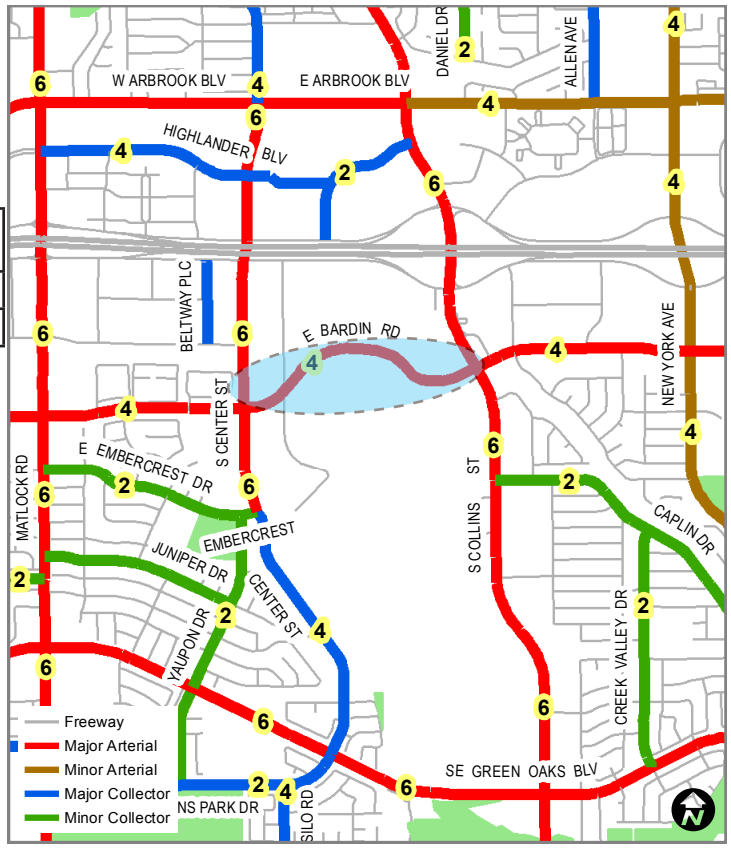
Thoroughfare Evaluation

Existing Functional Class	Major Arterial (4 lanes)
Land Use Context	Commercial
Base Year Volume Collins to 360:	9,000-16,000 veh/day
Base Year Level of Service	Acceptable (A-B-C)

2040 Projected Volume Center to Collins:	12,000 veh/day
2040 Level of Service	Acceptable (A-B-C)
2040 Volume/Capacity Ratio	0.5

Roadway Observations

- The removal of Bardin Road from the TDP between Center Street and Collins Street distributed east-west trips onto surrounding thoroughfares with available capacity, including the I-20 frontage road and Green Oaks Boulevard. Volumes on Bardin Road east of Collins Street either were reduced or remained the same.
- **Recommendation: Remove Bardin Road from the TDP (Center Street to Collins Street)**



Existing TDP Functional Class & Number of Lanes

2040 Volumes with Bardin Rd Connection

2040 Volumes without Bardin Rd Connection

Recommended Modification

Petra Drive (Wimbledon Drive to Tennessee Trail)

Thoroughfare Evaluation

Existing Functional Class	Major Collector (4 lanes)
Land Use Context	Suburban Residential
Base Year Volume	2,000 veh/day
Base Year Level of Service	Acceptable (A-B-C)

2040 Projected Volume	2,000 veh/day
2040 Level of Service (4 lanes)	Acceptable (A-B-C)
2040 Volume/Capacity Ratio (4 lanes)	0.1
2040 Level of Service (2 lane Alternative)	Acceptable (A-B-C)
2040 Volume/Capacity Ratio (2 lane Alternative)	0.2

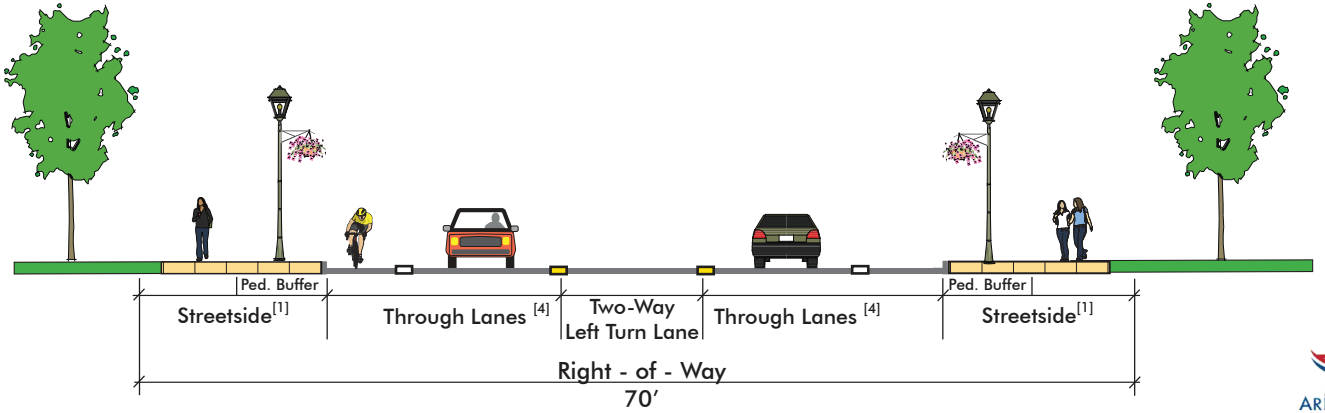
Existing TDP Functional Class & Number of Lanes

Roadway Observations

- Petra Drive is currently built as a 2-lane roadway.
- This roadway is in a built out residential area, and a significant increase in volumes is not expected. The roadway is currently only marked for 2 lanes and would require pavement widening for 4 lanes in some sections.
- **Recommendation: Downgrade classification to a Major Collector (2 lanes)**

Recommended Cross Section (for example/illustrative purposes only)

2-Lane Major Collector



Note: Typical TDP Flexible Design Matrix section shown with recommended through travel lanes.

Recommended Modification

Golf Club Drive (Eden Road to Business 287)

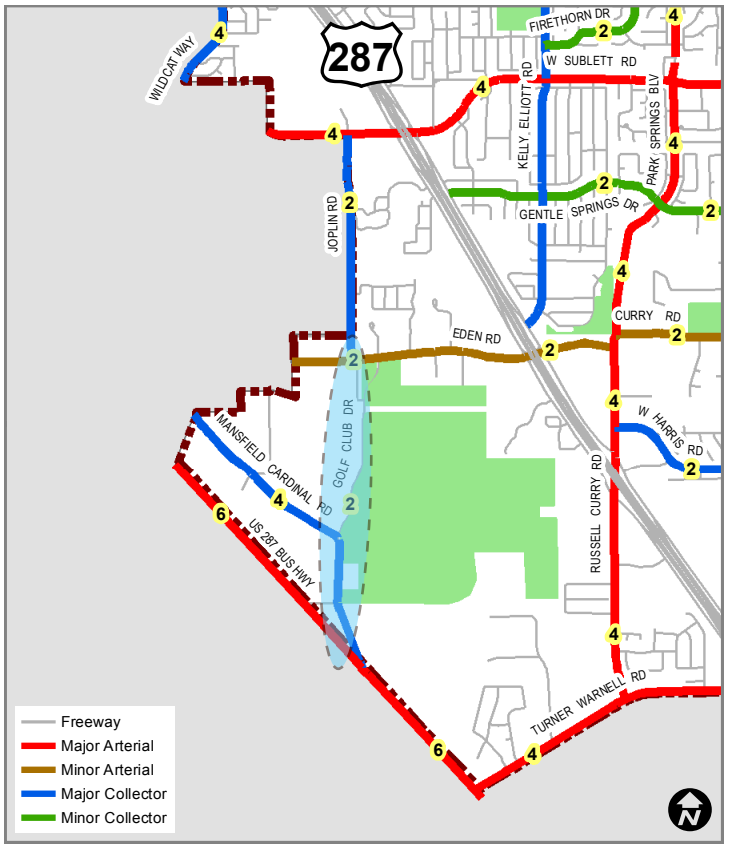
Thoroughfare Evaluation

Existing Functional Class	N/A (Future Road)
Land Use Context	Suburban Residential
Base Year Volume	N/A (Future Road)
Base Year Level of Service	N/A (Future Road)

2040 Projected Volume	2,000-5,000 veh/day
2040 Level of Service	Acceptable (A-B-C)
2040 Volume/Capacity Ratio	0.5

Roadway Observations

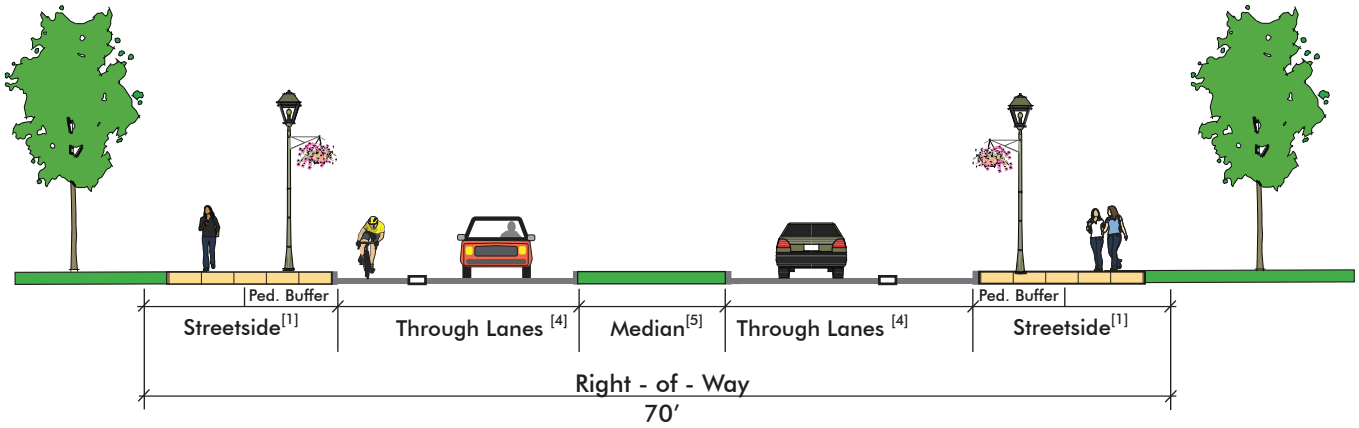
- As identified in the US 287 Corridor Strategic Plan, the remaining vacant land south of Eden Road and west of US 287 has potential for increased residential development, along with areas with redevelopment potential. An additional thoroughfare connection would help meet the future land use and mobility needs of this area.
- **Recommendation: Golf Club Drive to Business 287 should be added as a Major Collector to provide additional north-south connectivity in the area.**
- The Golf Club Drive extension will be better served with an improved connection to Business 287 near Hudson Cemetery Road. With this connection, the segment of Mansfield Cardinal Road south of Hudson Cemetery will not be needed.



Existing TDP Functional Class & Number of Lanes

Recommended Cross Section (for example/illustrative purposes only)

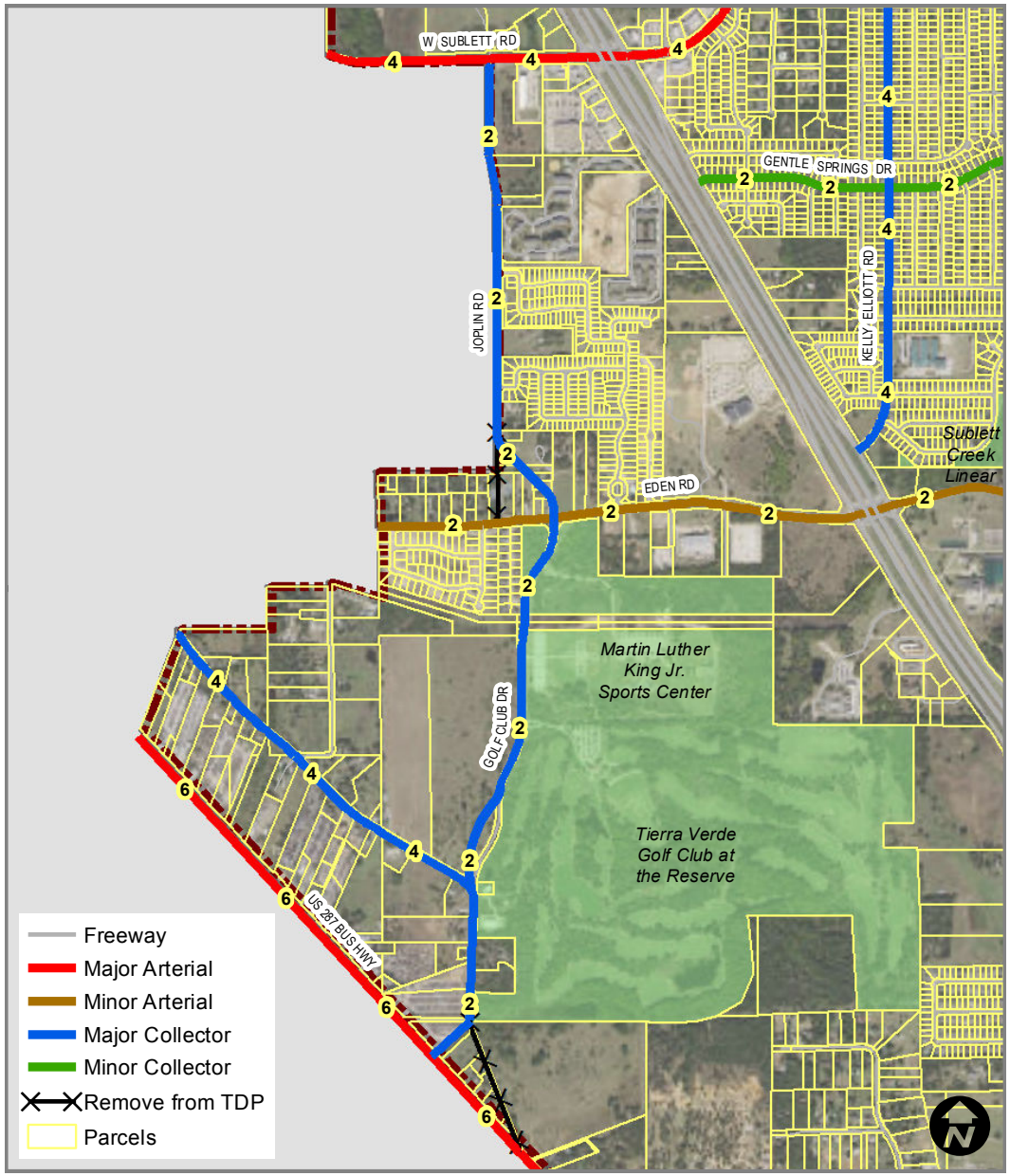
2-Lane Major Collector



*For safety reasons, the alignment of Golf Club Drive shall be shifted to the west in the area of Tierra Verde Practice Hole No. 1. The roadway shall be located a minimum of 200 feet west of the golf course property line at a distance of approximately 1,000 feet south of the golf course entry drive. The existing roadway (150 feet south of the golf course drive) and the intersection of Mansfield Cardinal Road shall remain at the current alignment.

Recommended Modification

Golf Club Drive (Eden Road to Business 287)



Recommended Modification

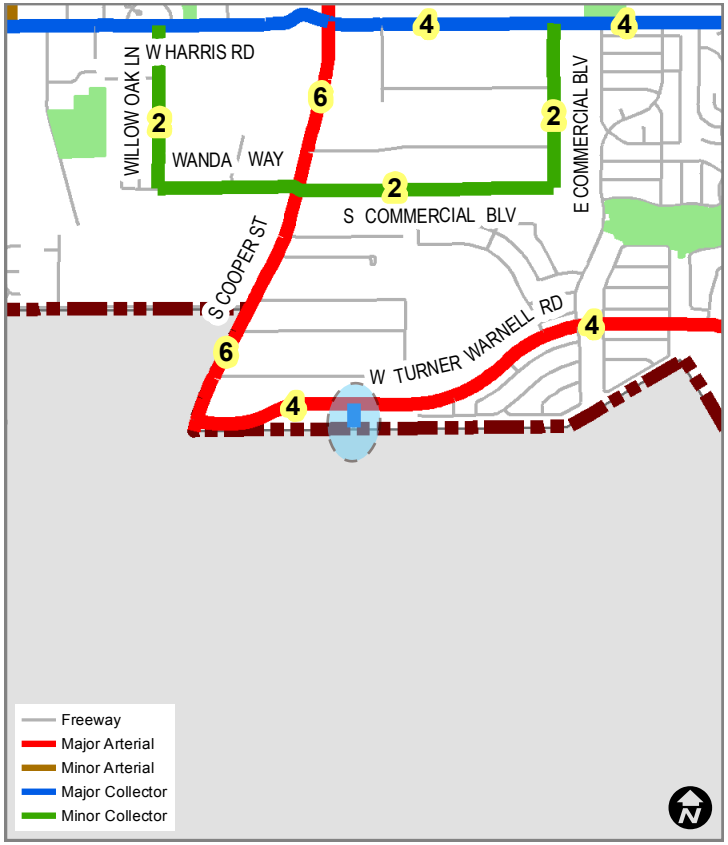
North Walnut Creek Drive (South of Turner Warnell Road)

Thoroughfare Evaluation

Existing Functional Class	Major Collector (2 lanes)
Land Use Context	Suburban Residential
Base Year Volume	5,000 veh/day
Base Year Level of Service	Acceptable (A-B-C)

Roadway Observations

- This roadway is currently built as a 4-lane Minor Arterial, and this classification is consistent with the Mansfield Thoroughfare Plan.
- **Recommendation: Modify classification to a Minor Arterial (4 lanes)**



Existing TDP Functional Class & Number of Lanes

Recommended Modification

Loretta Day Drive (Ballweg Road to South Collins Street)

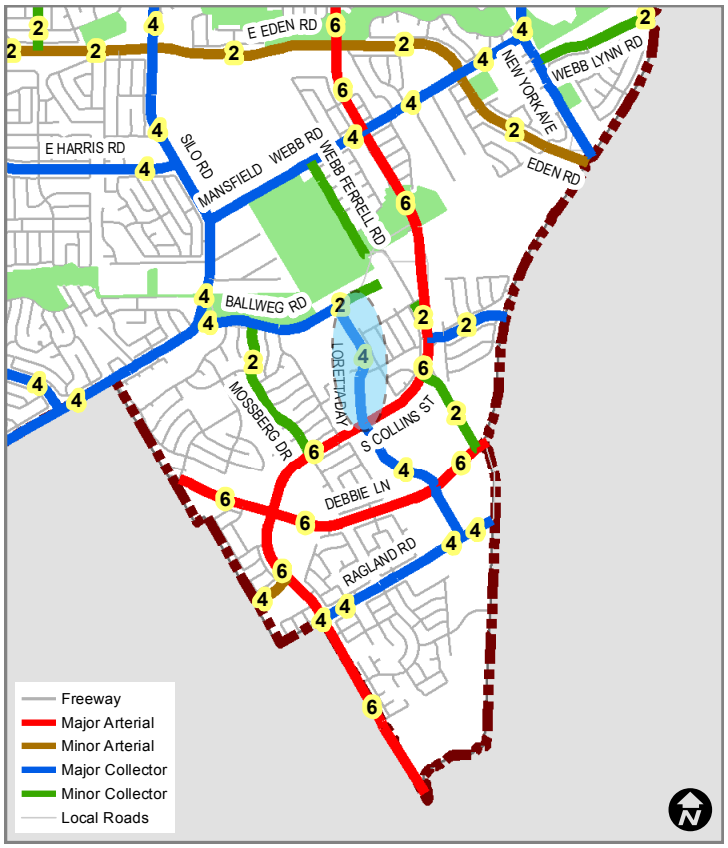
Thoroughfare Evaluation

Existing Functional Class	Major Collector (4 lanes)
Land Use Context	Suburban Residential
Base Year Volume	N/A (Future Road)
Base Year Level of Service	N/A (Future Road)

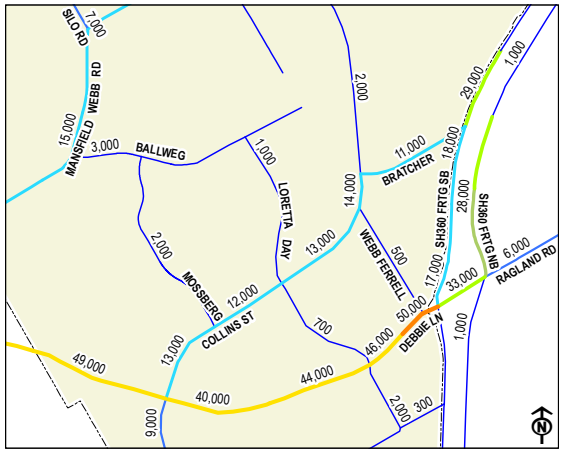
2040 Projected Volume	1,000 veh/day
2040 Level of Service	Acceptable (A-B-C)
2040 Volume/Capacity Ratio	0.1

Roadway Observations

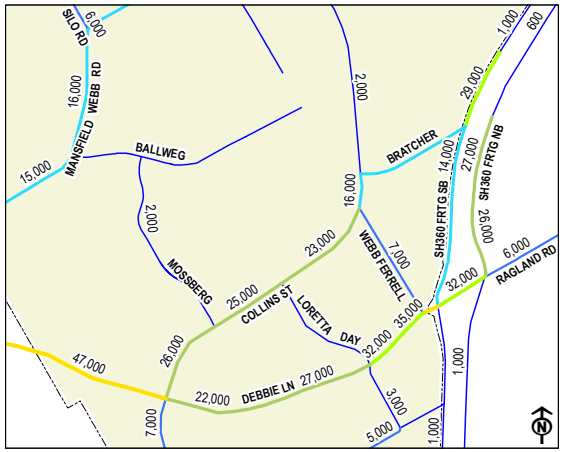
- Loretta Day Drive (north of Collins Street) serves a limited residential area which is not expected to generate a significant number of trips in the future as the area is built out. The 2040 projected volume of approximately 1,000 vehicles per day is within the capacity of a 2-lane local street.
- **Recommendation: Loretta Day Drive is projected to have low volumes and could function as a local street and is recommended for removal from the TDP. However, the local street connection should maintain neighborhood access to Collins Street and existing Loretta Day Drive.**



Existing TDP Functional Class & Number of Lanes



2040 Volumes with Loretta Day Dr



2040 Volumes without Loretta Day Dr

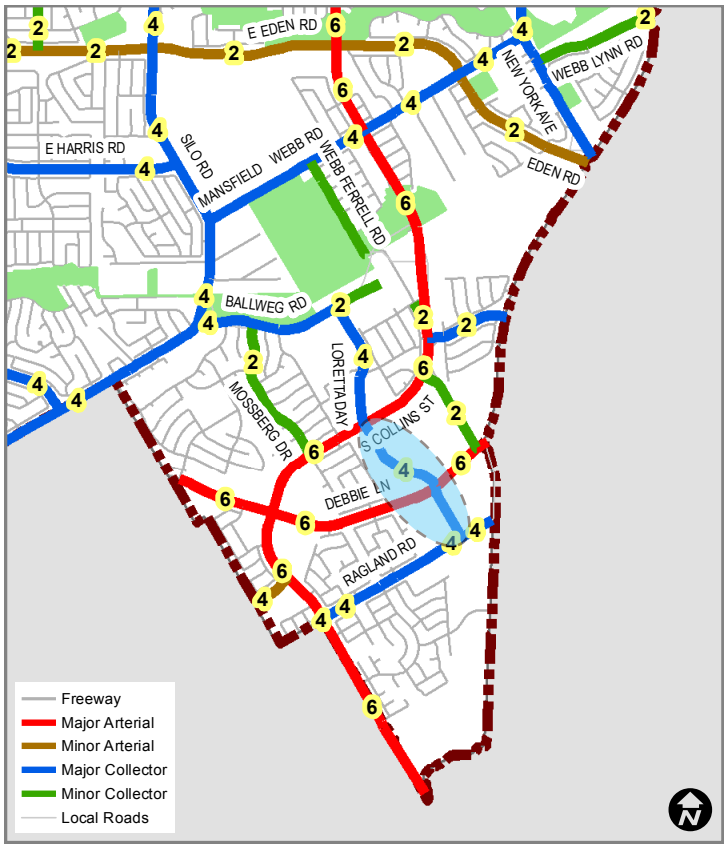
Recommended Modification

Loretta Day Drive (South Collins Street to Ragland Road)

Thoroughfare Evaluation

Existing Functional Class	Major Collector (4 lanes)
Land Use Context	Suburban Residential
Base Year Volume	N/A (Future Road)
Base Year Level of Service	N/A (Future Road)

2040 Projected Volume	1,000-4,000 veh/day
2040 Level of Service	Acceptable (A-B-C)
2040 Volume/Capacity Ratio	0.2



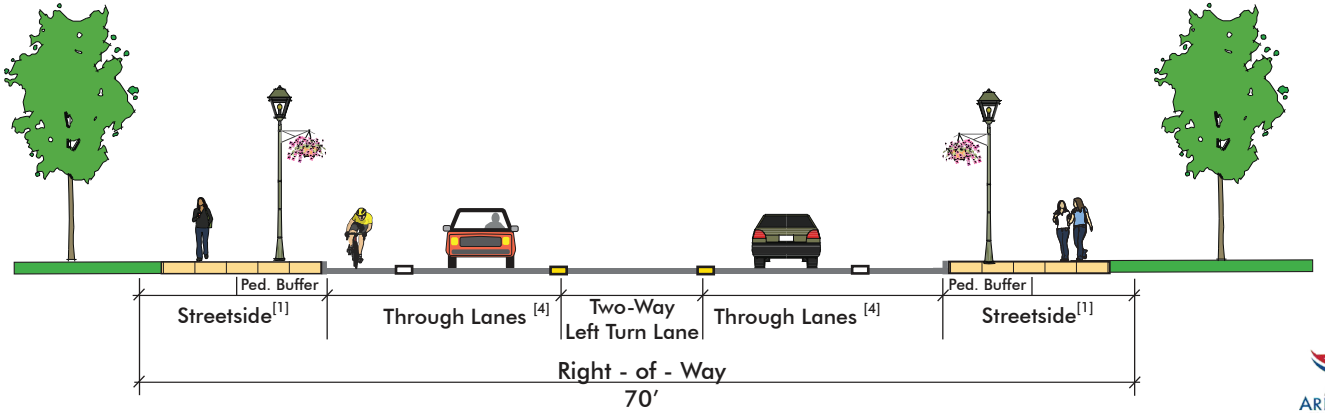
Existing TDP Functional Class & Number of Lanes

Roadway Observations

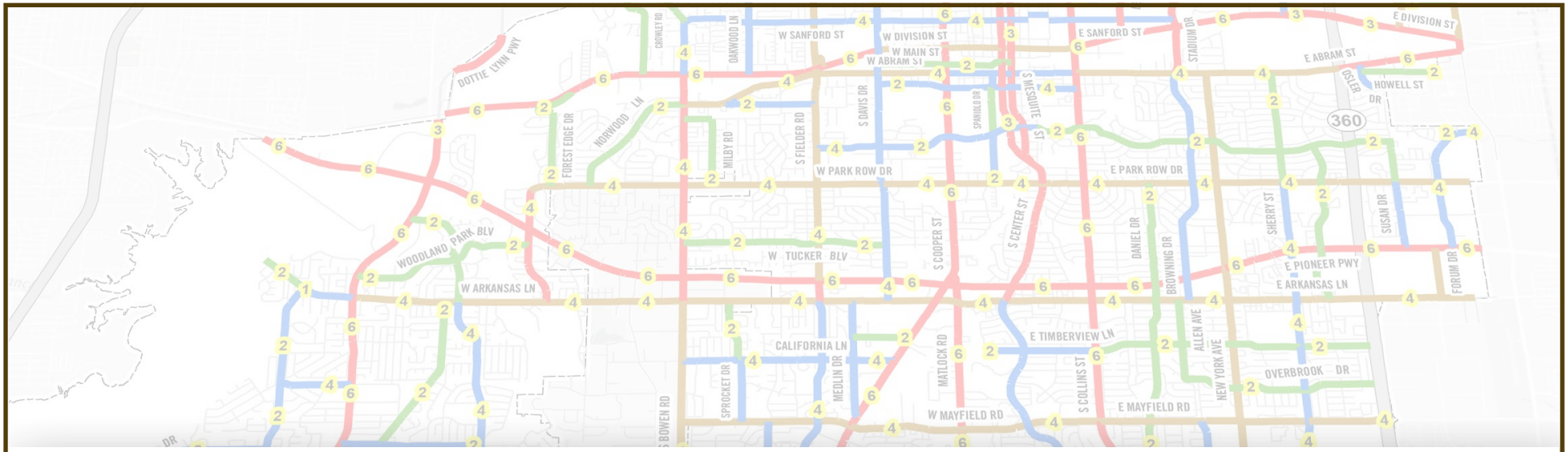
- Projected volumes do not warrant a 4-lane Major Collector, but Minor Collector connectivity will be beneficial to serve circulation between future development and Debbie Lane/SH 360.
- **Recommendation: Downgrade classification to a 2-lane Minor Collector**

Recommended Cross Section (for example/illustrative purposes only)

2-Lane Minor Collector



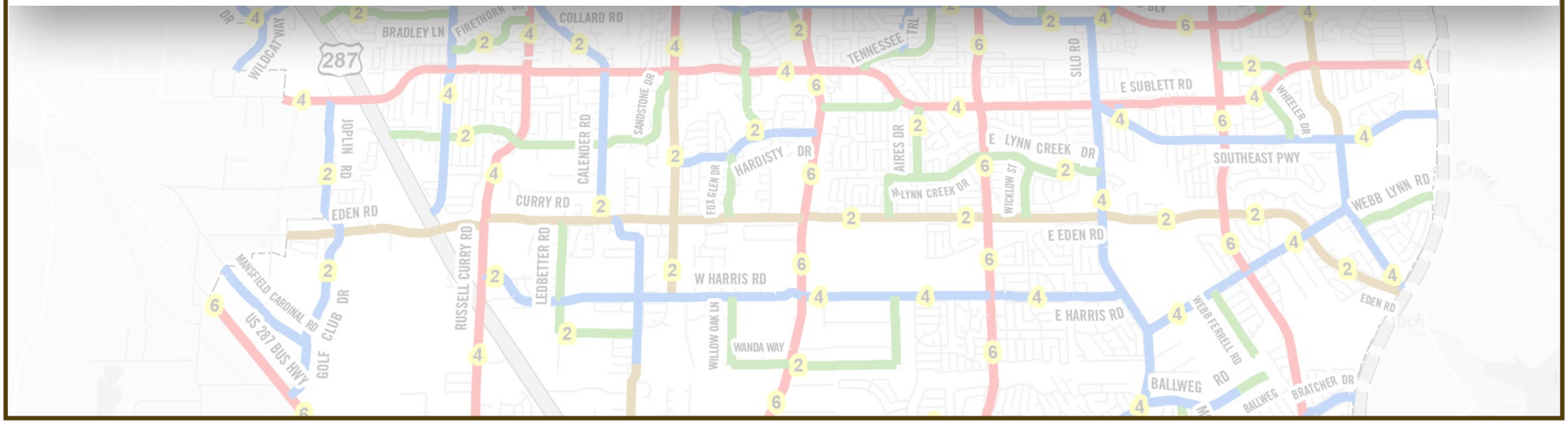
Note: Typical TDP Flexible Design Matrix section shown with recommended through travel lanes.



Thoroughfare Development Plan

Appendix

ARLINGTON
THE AMERICAN DREAM CITY



A. Model Basics

This Appendix describes the development and calibration of the Arlington TransCAD Subarea Model (ATCSM) used to evaluate existing travel conditions and forecast future year traffic for the City of Arlington. The ATCSM is a macroscopic region-wide travel demand model that forecasts future travel demand and its associated travel patterns. The update to the ATCSM included expanding the boundary of the model to include Denton, Tarrant, Collin, and Dallas County. The expanded model boundary required the Transportation Analysis Zone (TAZ) structure to change. To best incorporate census data, TAZ boundaries are now represented by the Census blocks. Each TAZ represents an area of development or activity that will generate trips. The ATCSM model has several levels of geographic boundaries. The levels of aggregation are shown below:

Transportation Analysis Zone (TAZ) level

Local Analysis District (LAD) level

Regional Analysis Area (RAA) level

Transportation Analysis District (TAD) level

Jurisdiction (JUR) level

The TAZ level is the smallest area of detail supported by the ATCSM model. The LADs include several TAZs and are used for summarizing the performance measures, RAAs contain several LADs, and so on, with the highest level of aggregation and lowest level of detail being the Jurisdiction level. Therefore, within the ATCSM model, the TAZ can represent any of the five levels of aggregation shown above. The greatest level of zone detail (TAZ) is included in the areas within and adjacent to the City. The further from the City the zone is, the less its impact on the specific City roadways, and, therefore, the less detail in the aggregation. In the ATCSM model, the majority of the TAZs are at RAA level or finer.

Four Step Modeling Process

The Arlington TransCAD model is comprised of a series of mathematical models that simulate travel on the transportation system. This macroscopic process encompasses the four (4) primary steps taken to estimate travel demand from a given land use and transportation network. The four steps in this approach are as follows:

Trip Generation – calculates the number of trips made based on household, employment, and land use data.

Trip Distribution – the estimation of the number of trips between each zone pair.

Modal Split – the prediction of the number of trips made by each mode of transportation between each zone pair.

Traffic Assignment – the amount of travel (or number of trips) that is loaded onto the transportation network through path-building and used to determine network performance.

This four step process is described in detail in the subsequent sections. The following section describes the necessary input data to create an accurate travel demand model.

B. TransCAD Input Data

There are many inputs that go into a regional travel demand model; these data can be broken into two basic categories: network data and land use data. This section of the report will describe sources of input data, assumptions made regarding input data, and the data themselves.

Network Data

The link-node data provided by the North Central Texas Council of Governments (NCTCOG) were used as a basis to build roadway networks. Included in these roadway networks are links, nodes, centroids, and centroid connectors. A centroid is a node that represents a TAZ, while a centroid connector is a link that connects the centroid to the roadway network, and generally represents very minor local streets such as those within a subdivision or a local neighborhood street. All of these data create the roadway network onto which traffic will be distributed and assigned as described in the sections that follow.

Other input to the ATSCM model included speeds and travel times (free-flow and loaded), capacities, number of lanes, and area type. NCTCOG has guidelines for the capacities and speed for various roadways based upon the facility's functional classification, number of lanes, and area type. These guidelines were applied to the roadway system in the ATCSM model. Arlington thoroughfare types (as defined by the TDP) were also coded into a special link field, as well as special codes for undivided versus divided and type of median. A special embedded capacity and speed look-up table and macro-driven program was created for the ATCSM to enable the user to select either link-coded speeds and capacities or apply the global values in the look-up table, overriding the link-coded values.

Because the ATCSM model includes roads throughout the Dallas-Fort Worth region, the roads outside the intensive study area of Arlington were assumed to be coded correctly, as they were obtained from NCTCOG.

Land Use Data

For the area outside Arlington, a combination of Census, ESRI, and NCTCOG data were used for land use and demographic data. The demographic data used in the trip generation process included number of households, population, median income, and number of employees by type of employment (basic, service, and retail). Demographic data are forecasted by NCTCOG for future study years based on trends in development and current and previous growth patterns. The basis for the land use information comes from each city in the Dallas-Fort Worth region and their land use plans (existing and future).

For land included in the Arlington municipal limits, the Arlington Comprehensive Plan was used to make assumptions relative to the development that will occur by a given study year (both 2040 and "build out"). **Table 1** indicates the 2016 population, households, and employment demographics assumed by NCTCOG and Kimley-Horn for the City of Arlington area based on TAZ structure. The model used for the Arlington TDP analysis is a regional model that includes demographic projections for Arlington, as well as surrounding communities within the Dallas-Fort Worth region in order to appropriately forecast changes in both local and regional travel patterns. The demographics utilized as part of this TDP update are based on TAZ structure, not city limit boundaries, so population and employment totals account for existing development and growth in neighboring areas immediately outside Arlington.

Arlington TAZs	2016	2040
Population	406,504	460,740
Households	148,512	165,856
Employment	149,523	288,009

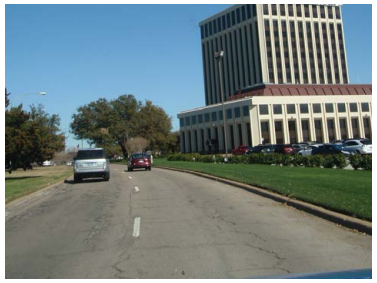
Table 1: Arlington TAZ Demographic Assumptions

C. Level of Service Overview

Congestion levels and Level of Service (LOS) are two performance measures that are used to evaluate how well the transportation network is functioning. The congestion level of each roadway is related to both the traffic volumes and the capacity of the roadway. Future traffic volumes are one of the primary outputs of the ATCSM that help project transportation demand. Present-day traffic volumes are used to calibrate the model to ensure it is as accurate as possible and then future traffic volumes are then generated for each link (roadway segment) within the model. Capacity refers to the amount of daily traffic a particular roadway can handle. For example, a minor collector such as Lincoln Drive will have less traffic capacity than a major arterial such as Matlock Road.

Level of Service (LOS) is a tool that is used to quantify traffic congestion along specific roadways and within the entire transportation network. LOS is calculated by dividing the peak hour traffic volume by the available capacity (V/C). Roadways are designated as LOS A, B, C, D, E or F. LOS A represents a roadway where traffic volumes are much lower than the capacity for that roadway and LOS F represents a roadway where traffic volumes are greater than the capacity of the roadway. LOS A roadways are free flowing while LOS F roadways are extremely congested. The City of Arlington aims to maintain a LOS C or D on most roadways except in specific areas where slower moving traffic will help to create a vibrant, safe, and pedestrian-friendly environment. The Appendix includes a map that displays the volume to capacity ratio (V/C) for the City of Arlington in the year 2040.

LEVEL OF SERVICE



LOS A/B

Traffic flow in the A/B category moves at or above the posted speed limit. Travel time in this category is not hindered as a result of congestion because traffic volumes are much less than the actual capacity of the thoroughfare.

LOS C/D

This category is slightly more congested than LOS A/B, however traffic volumes are beginning to reach their capacity of the thoroughfare. Traffic moves along at an efficient rate and posted speeds are maintained.

LOS E/F

Congestion is apparent in this Level-of Service category. Traffic flow is irregular and speed varies. The posted speed limit is rarely, if ever, achieved in this category. In more congested corridors traffic can be at a mere standstill with limited progression.

C. Level of Service Overview

Supply and Demand of Transportation Networks

Much like the principles of economics, our transportation network also relies on the principles of supply and demand. For example, if a particular municipality neglects to appropriately manage capacity (supply) in an area that is expected for increased population or employment growth (demand), the transportation network will not function well. On the other hand, municipalities with depleting growth are finding reduced levels of congestion within their transportation network because less people are using the same transportation corridors that were once meant for a larger population.

A primary goal of the TDP is to plan for a future thoroughfare system that balances supply and demand so that resources are maximized and the system functions safely and efficiently. The results from the ATCSM provide an opportunity for the transportation network to be analyzed as a comprehensive system so that adjustments can be made where necessary to ensure there is neither too much or too little capacity to handle future traffic volumes. Adjustments to Arlington's future roadway system were based on the following issues related to supply and demand:

1) A roadway that is projected to experience traffic volumes greater than its capacity may need to be adjusted to allow for increased capacity.

2) A roadway that is planned for increased capacity improvements without the backing of increased traffic volume projections should be adjusted to match the demand.

3) A roadway may require increased capacity, but expansion may be limited by site-specific constraints such as right-of-way. In this instance, improvements on parallel facilities and throughout the entire network should be examined to mitigate the demand.

4) Increased use of alternate modes of transportation, such as transit or bicycling, could reduce vehicular demand on thoroughfare roadways over time.

The Appendix includes a map that shows daily traffic volumes expected by 2040. The four freeways that run through the City maintain the highest traffic volumes at greater than 100,000 vehicles per day. Major Arterials that carry the most local north-south traffic will include Matlock Road, Cooper Street and Collins Street, while Pioneer Parkway, Division Street and Randol Mill Road will carry the most East-West traffic.

The technical analysis, conducted through the TDP development process, validates proposed recommendations for future growth and expansion in Arlington. It allows for future conflicts to be anticipated and resolved or minimized, while at the same time adjusting the roadways that do not need improvements between 2015 and 2040. While the TDP contains plans for increased capacity in the form of roadway expansion for certain areas of the City, the analysis completed through this update identified approximately 30 lane miles that are no longer necessary based on projected demand. A comparison of total TDP lane miles between the previous 2011 TDP and the current 2017 TDP is included in **Table 2**.

Functional Class	Existing	2011 TDP TOTAL	2011 TDP Left to Build	2017 TDP TOTAL	2017 TDP Left to Build
Major Arterial	564.5	688.3	123.9	661.7	97.2
Minor Arterial	249.0	269.0	20.0	273.0	24.0
Major Collector	258.1	320.0	61.9	310.1	52.0
Minor Collector	122.5	122.5	0.0	124.7	2.2
TOTAL	**1194.1**	**1399.9**	**205.8**	**1369.5**	**175.4**

Table 2: Arlington TDP Lane Miles Summary

D. Flexible Design Strategies & Matrix (from 2011 TDP)

Introduction

Flexible Thoroughfare Design is a relatively new concept that is being embraced by municipalities across the country. Flexible design allows for transportation planners and roadway designers to create unique characteristics specific to individual corridors. The changing dynamic that is causing this shift toward a more flexible approach to thoroughfare design is two-fold:

1) alternative modes such as transit, cycling and walking are being requested and utilized more often by citizens, necessitating a shift away from designs that focus solely on the automobile, and

2) it is now recognized that transportation decisions must not be made in a vacuum, and that other elements such as adjacent land uses types, land use densities and even socioeconomic characteristics can affect the way a thoroughfare operates.

By utilizing this new state of practice, Arlington can continue to increase mobility within the City while providing its residents and visitors increased livability and sense of community.

Functional Classification

Most cities use a traditional functional classification system to group roadways according to the type of service they are intended to provide. This organized system assists citizens and developers in understanding the types of roadways that are planned for the City's transportation system and what those roadways might look like. Historically, street classification systems have been rigid and uncompromising, allowing little to no flexibility in their application. Street design characteristics have typically been limited to the area from curb-to-curb and focused solely on the vehicle.

However, this concept of rigidity has evolved over time as the relationship between transportation and land use has become more influential in the design and operation of our streets. Thoroughfare design practice has begun to involve a number of different design considerations that often include the streetside area (located between the building front and the curb) and that affect not only automobile users, but also pedestrians and cyclists.

While the City of Arlington has historically utilized the traditional functional classification system for its roadways, this updated TDP introduces a new functional classification system that utilizes the existing terminology (Major Arterial, Minor Arterial, Major Collector, Minor Collector), but includes additional flexibility for the design characteristics of the roadway. This allows for each roadway to be designed in a way that adapts to the surrounding built environment and that benefits all users. The following pages illustrate and describe this new functional classification system in greater detail.

D. Flexible Design Strategies & Matrix (from 2011 TDP)

Street Context and Development Policy

Along with the more flexible functional classification design standards, the street context, or character of the area adjacent to the roadway will play an important role in the way a street looks. One type of street design will not satisfy all of the different needs within the City and therefore it is important that the design standards offer flexibility to allow for these distinctions. There is no "one size that fits all" in the framework of street design.

The City of Arlington is broken into three different context zones (Suburban, General Urban and Urban Core) to allow for flexible design standards to be applied to the various area types within the City (see Figure D.2 on the following page).

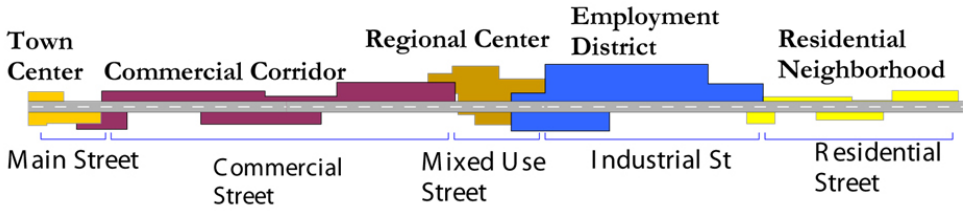


Figure D.1: "One Size Does Not Fit All" This graphic illustrates how a roadway may cross through a number of different context types. As the context changes, so should the street design.

Suburban

Distinguishing Characteristics: This zone consists of single-family residential homes and conventional multi-family apartments, along with an auto-oriented commercial development pattern. This zone also includes industrial areas and businesses that have potential to create adverse visual, noise, or other impacts to adjoining public and residential properties.

Typical Building Height: Structures can be 1 to 3 stories for residences, while commercial buildings are typically 1 to 2 stories. Industrial buildings are typically 2 to 3 stories with some variation.

Average Target Residential Density: Typical densities are around 3 to 8 units/acre (single family) and 16 units/acre (multi-family).

Type of Public Open Space: Parks and greenbelts dominate the open spaces.

General Urban

Distinguishing Characteristics: This zone includes a mix of housing types (including attached units), with a range of commercial and civic activity at the neighborhood and community scale.

Typical Building Height: Structures can be 2 to 4 stories.

Average Target Residential Density: Typical densities are around 8 to12 units/acre (single family) and 16 to 32 units/acre (multi-family).

Type of Public Open Space: Parks and greenbelts dominate the open spaces.

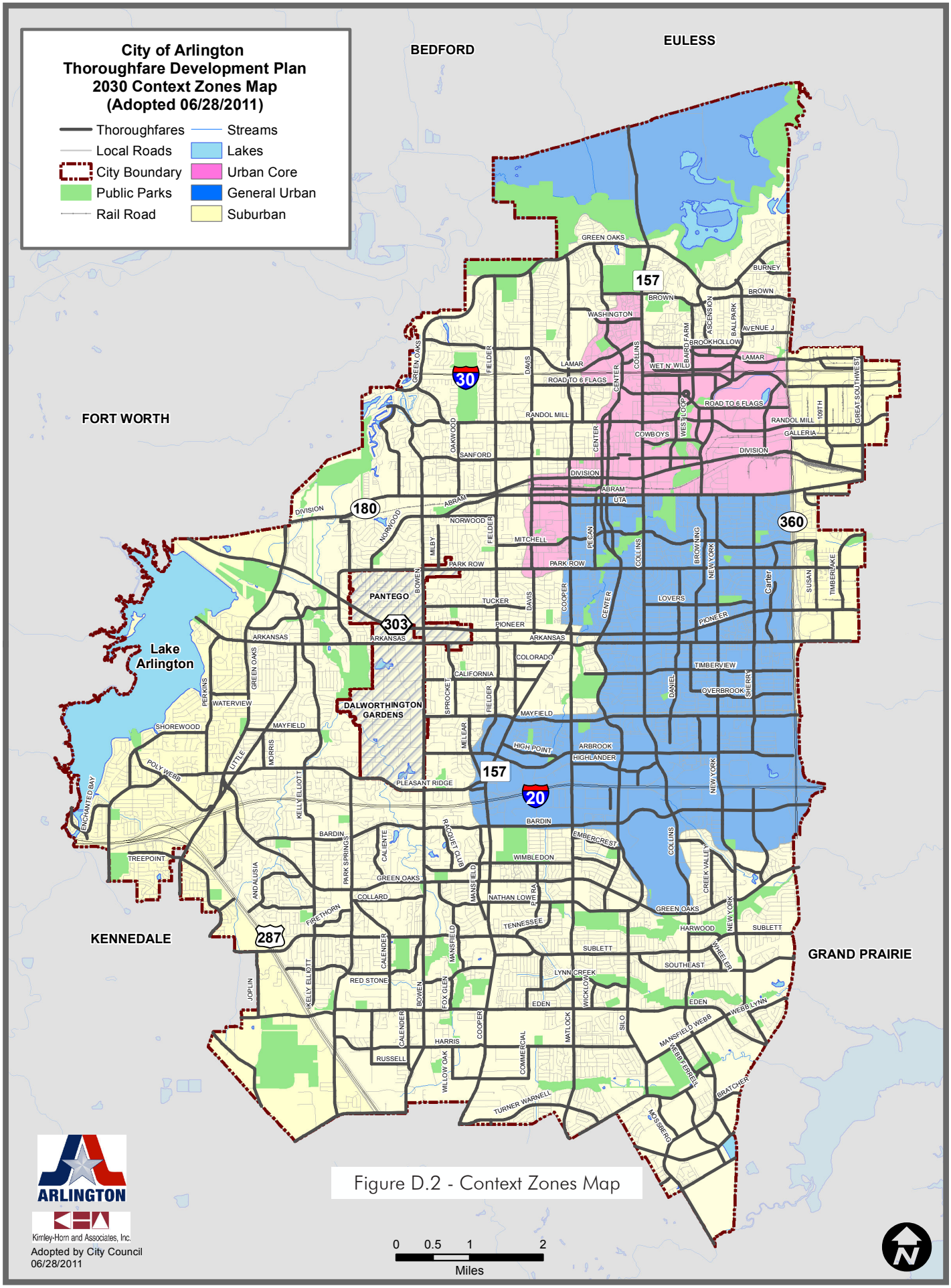


Figure D.2 - Context Zones Map

D. Flexible Design Strategies & Matrix (from 2011 TDP)

Urban Core

Distinguishing Characteristics: This zone includes attached housing types such as townhouses and apartments mixed with retail, workplace, civic activities, and walkable mixed-use developments.

Typical Building Height: Structures are typically 3 to 5 stories with some variation

Average Target Residential Density: Typical densities are around 8 to12 units/acre (single family) and 40 units/acre (multi-family).

Type of Public Open Space: Parks, plazas and squares, and boulevard median landscape dominate the open spaces.

Design Elements

As mentioned previously, street design has historically focused only on the area located between the curbs and has centered design criteria around the private automobile. However, emerging practice places emphasis on other aspects of the street in addition to the travel way. For example, pedestrian and bicycle infrastructure is being implemented more frequently in neighborhoods to encourage healthy living and exercise, and in more commercial locations to spur increased economic development.

When planning future thoroughfares, it is essential to identify all aspects of the corridor in order to maximize efficiency of the roadway system and the value of the surrounding property. Three separate realms have been identified within the Thoroughfare Development Plan to be taken into consideration when planning for roadways. These realms are the travel way realm, the pedestrian realm and the context realm, as shown in Figure D.3.

Each of the realms are identified in the flexible design matrix and have specific guidelines on how each of the thoroughfares can be designed. Flexibility is enabled in the design matrix to allow developers and roadway designers the ability to adapt their vision of the corridor to the surrounding built environment.

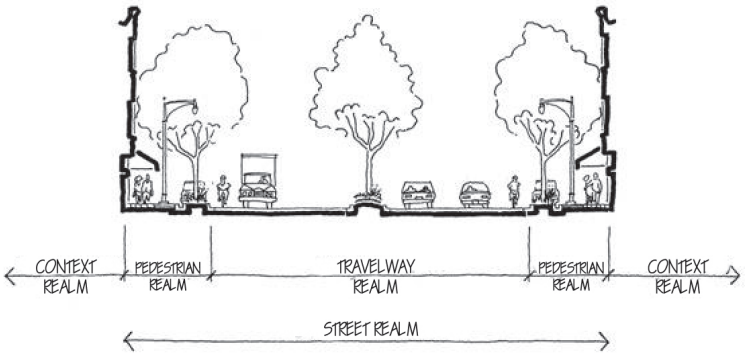
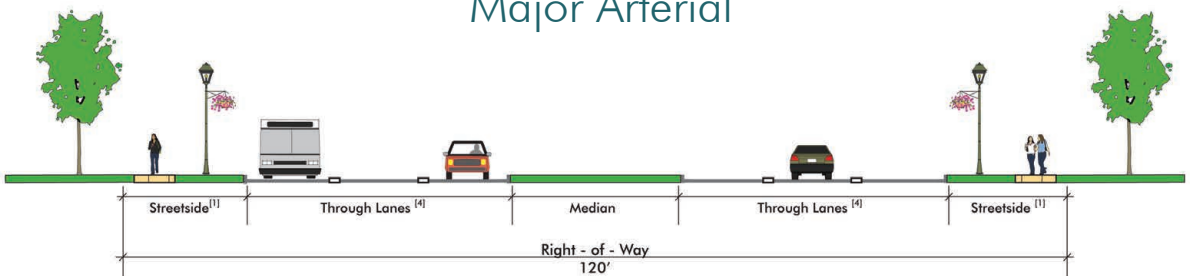


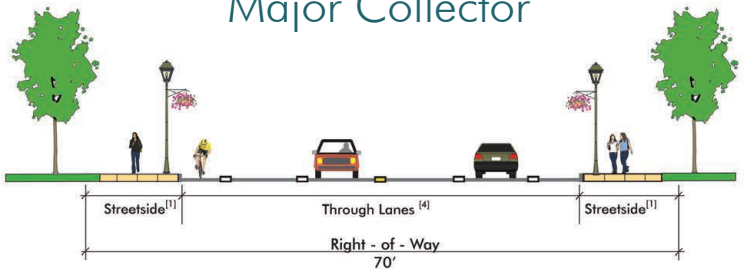
Figure D.3 – Anatomy of the Street, identifying the different realms

Flexible Design Matrix

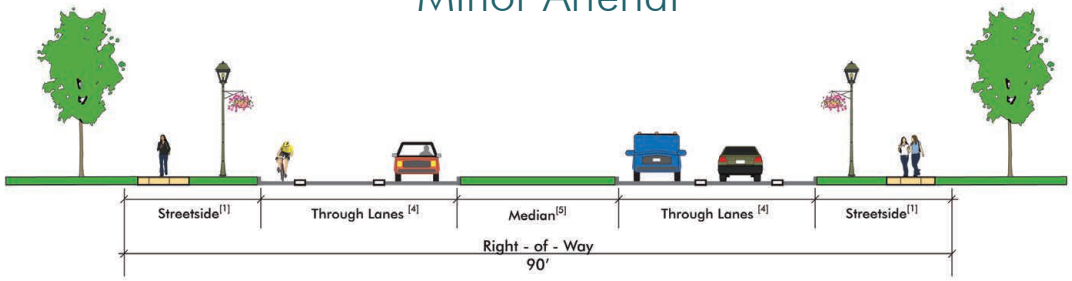
Major Arterial



Major Collector



Minor Arterial



Minor Collector

	Major Arterial			Minor Arterial			Major Collector			Minor Collector		
Pedestrian Realm	**Suburban***	**Urban***	**Urban Core***	**Suburban***	**Urban***	**Urban Core***	**Suburban***	**Urban***	**Urban Core***	**Suburban***	**Urban***	**Urban Core***
Recommended Streetside Width [1]	14 - 26 ft	15 - 27 ft	15 - 27 ft	9 - 23 ft	11 - 25 ft	11 - 25 ft	9 - 23 ft	9 - 25 ft	9 - 25 ft	9 - 19 ft	9 - 19 ft	9 - 19 ft
Recommended Sidewalk Width [2]	4 - 10 ft	6 - 12 ft	6 - 12 ft	4 - 10 ft	6 - 14 ft	6 - 16 ft	4 - 10 ft	4 - 14 ft	4 - 16 ft	4 - 8 ft	4 - 10 ft	4 - 12 ft
Recommended Pedestrian Buffer Width [3]	8 -14 ft	7 - 13 ft	7 - 13 ft	4 - 12 ft	4 - 10 ft	4 - 8 ft	4 - 12 ft	4 - 10 ft	4 - 8 ft	4 - 10 ft	4 - 8 ft	4 - 6 ft
Travel Way Realm												
Number of Through Lanes [4]	4 - 6	4 - 6	4 - 6	2 - 4	2 - 4	2 - 4	2 - 4	2 - 4	2 - 4	2 - 3	2 - 3	2 - 3
Target Speed (MPH)	35 - 45	35 - 45	35 - 45	30 - 40	30 - 40	30 - 40	25 - 35	25 - 35	25 - 35	30	30	30
Lane Width	11 - 12 ft	11 - 12 ft	11 - 12 ft	11 - 12 ft	11 - 12 ft	10 - 12 ft	11 - 12 ft	10 - 12 ft	10 - 12 ft	11 - 12 ft	10 - 12 ft	10 - 12 ft
Median Width [5]	16 - 20 ft	16 - 20 ft	16 - 20 ft	0 - 16 ft	0 - 16 ft	0 - 16 ft	0 - 16 ft	0 - 16 ft	0 - 16 ft	N/A	N/A	N/A
On-Street Parking Width [6]	8 - 9 ft	8 - 9 ft	8 - 9 ft	8 - 9 ft	8 - 9 ft	8 - 9 ft	8 - 9 ft	8 - 9 ft	8 - 9 ft	8 - 9 ft	8 - 9 ft	8 - 9 ft
Bike Lanes (minimum) [7]	6 ft	5 - 6 ft	5 - 6 ft	6 ft	5 - 6 ft	5 - 6 ft	5 - 6 ft	5 - 6 ft	5 - 6 ft	5 - 6 ft	5 - 6 ft	5 - 6 ft
Right-of-Way (ROW) [8]	120 ft	120 ft	120 ft	90 - 100 ft [9]	90 - 100 ft [9]	90 - 100 ft [9]	70 ft	70 ft	70 ft	60 ft	60 ft	60 ft
Anticipated Traffic Volumes	20,000 - 50,000	15,000 - 50,000	15,000 - 40,000	20,000 - 35,000	10,000 - 35,000	15,000 - 30,000	1,500 - 30,000	1,500 - 25,000	1,500 - 25,000	1,500 - 30,000	1,500 - 25,000	1,500 - 25,000

[1] Streetside width includes sidewalk, pedestrian buffer and 1' buffer on outside edge of sidewalk.
[2] Minimum width requirement for a suburban sidewalk is 4', however 6' is preferred as minimum if ROW permits.
[3] In suburban locations, buffer is typically fitted with landscaping such as grass, while in urban locations buffer can have tree wells. Buffer includes width needed for the curb.
[4] Number of through lanes for thoroughfares are identified on the TDP Map.
[5] Median for 2 lane option can be a two-way left turn lane if desired. No medians or center turn lanes are possible on minor collectors.
[6] When combined with bike lanes parallel parking can be 8', but 9' is preferred if ROW permits.
[7] For urban contexts, bike lanes can be 5' when combined with on-street parking, and 6' without adjacent on-street parking. Refer to Hike and Bike System Plan for additional details.
[8] Along roadways where previously dedicated right-of-way (ROW) is wider than the current required ROW, additional ROW may be required to transition road side elements (such as utilities) to the narrower roadway cross section.
[9] 100' of ROW is required only in specified instances; Eden Rd and Bowen Rd from Sublett to Calender Rd are the only thoroughfares designated as 100' (See TDP map for details).
[10] Lamar Blvd from Lincoln Dr to Ryan Plaza Dr is a 3 lane Major Arterial: 1 lane west-bound and 2 lanes east-bound.

E. Planning Process (from 2011 TDP)

Introduction

The following planning, design, and approval process provides the framework for developing a more integrated approach to roadway design by planners, engineers and designers. This process can be used for all new and retrofit street projects within the City. A single comprehensive design process that guides all aspects of street design allows for a convenient and streamlined process for everyone involved.

The land use and surrounding context should help direct the design for streets and street networks. The design should take into consideration a multi-modal approach based on the goals and priorities of each specific corridor. The City should take the following items into consideration when designing the transportation network:

- Safety and accessibility for all users
- Interconnected networks for all modes of transport
- Speed management
- Consideration of landmarks, views, vistas, and gateways
- Legibility and efficiency
- Environmental conditions

Identifying Priority Elements

The most difficult element of thoroughfare design is balancing the desired design elements with the right-of-way constraints. This balancing act is the reason flexibility is so important during the planning stage of thoroughfare design. In the past, the process of choosing the appropriate design standards for a particular roadway was simple because only one option was available for each roadway type. This simplified the process for the roadway designer, but lacked the flexibility that is often needed to provide multi-modal options for the thoroughfare. The priorities along a specific corridor are typically tied to the land use and development patterns found along the corridor. Two streets with the same number of lanes and right-of-way may have completely different priorities. The ITE Context Sensitive Solutions Manual states that, "Dimensions, whether for elements in the streetside, traveled way, or intersection, should not be applied arbitrarily but should be based on specific rationale". This rationale can be based on a number of different priority elements. Allowing flexibility in the design process ensures that the goals and priorities for each specific corridor are met.

The priority elements of a thoroughfare may be different depending on the road type and context. Higher-priority design elements are those that help the thoroughfare meet the vision and context sensitive objectives of the community. Lower-priority elements have less influence on achieving the objectives and can be relinquished in cases of insufficient right-of-way. Using the matrix on the following page can assist in choosing the appropriate priority elements for the design of roadways in the City of Arlington.

E. Planning Process (from 2011 TDP)

PRIORITY ELEMENTS

Design Elements	Street Types					
	Arterial			Collector		
	Urban Core	General Urban	Suburban	Urban Core	General Urban	Suburban
Travel Way Realm						
Number and width of travel lanes	High	High	High	Low	Low	Medium
Vehicular capacity	High	High	High	Low	Low	Medium
Design for large vehicles	Medium	High	High	Low	Low	Medium
Medians	Medium	Medium	High	Low	Low	Low
Bicycle lanes	Medium	Medium	Medium	High	High	High
Multimodal intersection design	Medium	Medium	Medium	High	High	High
Pedestrian Realm						
Wide sidewalks with amenities	Medium	Medium	Low	High	High	Medium
On-street parking	Medium	Medium	Low	High	High	Medium
Transit priority operations	High	High	Medium	Medium	Medium	Low
Context Realm						
High amenity transit facilities	High	High	Low	High	High	Low
Urban design features	High	High	Low	High	High	Low
Other Elements						
Interconnected street system	High	High	High	High	High	High
Access management	High	High	High	Medium	Medium	Medium

High Priority
Medium Priority
Low Priority

Note: Chart to be used in prioritizing the above design elements when Right-of-Way is limited.

Table E.1 - Priority Elements of the Street

Thoroughfare Design Stages

The thoroughfare design process is a simplified process that allows for a more flexible approach to roadway design. The process can include collaboration with the public, stakeholders and a multidisciplinary team of professionals (both public and private sectors) if needed, depending on the complexity of the surrounding context and needs. Within the City of Arlington, inter-departmental coordination needs to occur throughout the process to ensure that the goals and priorities of the corridor are achieved. The design process applies to all street design scenarios and entails five steps:

- Step 1: Determine TDP Functional Class and Number of Lanes
- Step 2: Determine Context Realms
- Step 3: Identify Right-of-Way (Existing and/or Future)
- Step 4: Select Priority Elements for Thoroughfare
- Step 5: Finalize Design

E. Planning Process (from 2011 TDP)

Step 1: Determine TDP Functional Class and Number of Lanes

The Thoroughfare Development Plan identifies every arterial and collector within the City of Arlington as either a major or minor facility. Together with the functional classification, the number of through travel lanes for each facility has also been specified based on the projected future needs acquired from the travel demand model.

Step 2: Determine Context Realms

Once the functional class and number of lanes have been identified, it is important to determine in which context realms the thoroughfare is located: Urban Core, General Urban or Suburban.

Step 3: Identify Right-of-Way (Existing and/or Future)

In this step, it must be determined whether the existing right-of-way is sufficient or if additional right-of-way must be acquired to fulfill the requirements of the corridor. During this step, use the flexible design matrix to determine potential dimensions of the thoroughfare.

Step 4: Select Priority Elements for Thoroughfare

This step will identify the characteristics of the travel way and the streetside based on the surrounding land uses and built environment. Coordination with relevant stakeholders is important during this stage of the planning process to ensure a community-supported and easily implementable design. The following list includes examples of questions that can be asked during this step to identify priorities.

- Is this a corridor heavily used by cyclists and pedestrians?
- Are commercial vehicles frequent?
- Are there businesses located on this corridor? Are they auto-oriented (big-box) or pedestrian-oriented (street frontage)?
- Is this a residential location with parks and schools near-by?
- Do people require on-street parking to access homes or businesses?
- Is transit used on this corridor?
- Is this thoroughfare affected by special event traffic?

Step 5: Finalize Design

The previous steps lead to the final step which is to finalize the new thoroughfare design of the studied corridor.

F. Prioritization Process (from 2011 TDP)

Introduction

Implementation of the TDP recommendations is key to making sure the City reaps all of the benefits associated with the Plan. It is expected that by 2040, an additional 175 lane miles of roadway will be needed to serve the increasing demand on the transportation network. It is important to note that this additional capacity was included in the previous TDP. This updated TDP recommends 30 fewer lane miles of roadway than the previous Plan, but still maintains acceptable levels of service and travel times. A map on page 4 shows the changes from the previous TDP.

Arlington Thoroughfare Prioritization Process

The Arlington thoroughfare prioritization process is a comprehensive approach used to evaluate roadway projects expected to occur between 2015 and 2040 based on criteria used to measure mobility, livability and environmental concerns. It allows the City to make smart, strategic mobility investments that involve multi-modal solutions. This process helps the community and the City recognize problems, select solutions and prioritize their implementation in both the short and long term.

The purpose of the prioritization process is to allow the City to have a clear understanding of the methodology for the prioritization of thoroughfare projects. Having a standardized process legitimizes the evaluation and puts every project at the same starting point. The following prioritization table identifies nine different evaluation criteria and their respective measures of effectiveness (MOEs) and potential scoring criteria that can be used to evaluate projects within Arlington. Initially, each of the nine evaluation criteria will be assigned an equal weight; however, the City will have the opportunity to adjust the weighting based on changing community goals and opportunities. For example, if one of the criteria, such as accident rate, becomes a more important goal, then the accident rate criteria can be weighted more heavily to adjust to the changing community desires. The resulting ranking will determine which projects provide the greatest benefit to the City based on factors such as mobility, cost-effectiveness, and air quality. It is important to note that the prioritization table is for illustrative purposes only to provide an example of how roadway projects can be evaluated and prioritized.

Implementation Steps

Interdepartmental Coordination: Implementation of this TDP must be a coordinated effort between the various departments at the City of Arlington to maximize resources and ensure desired outcomes for future thoroughfares and the transportation network as a whole. Coordinating TDP implementation with other roadway work such as utility, drainage and resurfacing projects will provide opportunities for cost effective, streamlined implementation. By including the Community Development and Planning, Public Works and Transportation, Parks and Recreation and other relevant departments in the implementation process, projects can be planned and constructed in a streamlined, efficient and effective manner.

Plan/Document Coordination: The development of the Hike and Bike System Master Plan was closely coordinated with the development of the 2011 TDP. Coordination should be continued over time as both the Hike and Bike System Master Plan and TDP are updated and implemented, along with consideration for other documents such as the Design Criteria Manual, the Roadway Impact Fee Program and the Capital Improvement Program.

TDP Update: The TDP should be updated every five years, at a minimum, to ensure the document is responding appropriately to changes in growth and development patterns. The latest demographic and land use data for the City and the region should be incorporated into every update. Close attention should be paid to transportation investments that have taken place or are anticipated in other parts of the Dallas-Fort Worth area.

F. Prioritization Process (from 2011 TDP)

	POINTS	10	8	6	4	2
1	Functional Classification	Major Arterial	Minor Arterial	Major Collector	Minor Collector	Residential
2	Accident Rate (within project limits)	50+	36 - 50	21 - 35	6 - 20	0 - 5
3	Traffic Volume Growth (VPD Increase)	20,000 +	15,000 - 20,000	10,000 - 15,000	5,000 - 10,000	0 - 5,000
4	Supports Multiple Modes (Cars, Bicycles, Pedestrians, Transit)	4 Modes		3 Modes		2 Modes
5	Funding	Funded by Other (Private or Public Entity)	Funded 25% by City	Funded 50% by City	Funded 75% by City	Funded by City
6	Congestion Reduction (% V/C Reduced)	50% reduction	40% reduction	30% reduction	20% reduction	10% reduction
7	Context Location	Urban Core		General Urban		Suburban
8	Coordination	Project limits are identified on Bike Plan		Project limits are identified on Sidewalk Plan		Project is on NCTCOG Long Range Plan
9	Connection to Amenities (schools, libraries, shopping, etc)	Within 1/4 mile	Within 1/2 mile	Within 1 mile	Within 2 miles	Within 5

Table F.1 - Example Prioritization Matrix for Arlington thoroughfares.

Note: This table is for illustrative purposes only to provide an example of how roadway projects can be evaluated and prioritized.

City of Arlington
Thoroughfare Development Plan Update
2017 TDP Capacity Status

2017 TDP	Capacity Status
Existing	Widening
Future	Striping
Existing Highway	Future
Future Highway	

Date: 2/10/2017

Capacity Status

Widening - Thoroughfare requires additional lanes and ROW for ultimate capacity.

Striping - Thoroughfare is built out but not striped for its ultimate section.

Future - Thoroughfare is not built.

City of Arlington
Thoroughfare Development Plan Update
2040 Traffic Volumes

2040 Traffic Volumes

- 0 - 5,000
- 5,001 - 11,000
- 11,001 - 19,000
- 19,001 - 28,000
- 28,001 - 38,000
- 38,001 - 49,000
- 49,001 - 67,000
- 67,001+
- City Limits

Date: 2/9/2017

FM157
GREEN OAKS BLVD
LINCOLN DR
BROWN BLVD
DAVIS DR
COOPER ST
SH360 FRTG NB
LAMAR BLVD
AVE H
IH30 FRTG EB
IH30 FRTG WB
AVE E
109TH ST
GIBBINS
COWBOYS WAY
STADIUM DR
SANFORD ST
DIVISION ST SH180
ABRAM ST
UTA BLVD
BORDER DR
CROWLEY RD
COUSIN LN
FIELDER RD
2ND ST
NORWOOD LN
MILBY
MITCHELL ST
NEW YORK AVE
SH360 FRTG SB
SUSAN ST
SP303 PIONEER PKWY
PARK ROW DR
COOPER ST FM157
BROWNING DR
SHERRY ST
CARTER
WOODSIDE DR
SMITH BARRY RD
TUCKER BLVD
LOVERS LN
SP303
ARKANSAS LN
ROOSEVELT DR
BOWEN RD
CALIFORNIA LN
MEDLIN DR
DANIEL DR
CENTER ST
SPROCKET
MELEAR DR
MAYFIELD RD
OAKS BLVD
GREEN
LITTLE RD
SHOREWOOD DR
PERKINS RD
MORRIS
HIGH POINT
ARBROOK BLVD
HIGHLANDER
PLEASANT RIDGE
LITTLE
ARBROOK
IH20 FRTG WB
IH20 FRTG EB
MATLOCK RD
BARDIN
BARDIN RD
EMBER CREST
CENTER
COLLINS ST
CAPLIN
SHERRY
GREEN OAKS BLVD SW
CALIENTE
WIMBLEDON DR
JUNIPER
YAUPON
CREEK VALLEY
GREEN OAKS BLVD
TREEPOINT DR
US287 FRTG NB
US287 FRTG SB
ANDALUSIA
BRADLEY
COLLARD RD
PETRA
TENNESSEE
CRAVENS PARK DR
CALENDAR RD
PARK SPRINGS BLVD
SANDSTONE
FOX HUNT
SUBLETT RD
WHEELER
REDSTONE DR
HARDISTY
AIRES
LYNN CREEK
SILO RD
SOUTHEAST PKWY
CURRY RD
FOX GLEN
WILLOW
EDEN
LEDBETTER RD
CALENDER RD
HARRIS RD
MANSFIELD WEBB RD
BU287
RUSSELL RD
WANDA
COMMERCIAL
TURNER WAY
BALLWEG
TURNER WARNELL RD
MOSSBERG
Cottonwood Creek
Joe Pool Lake
Walnut Creek
Tarrant
Dallas

ARLINGTON
THE AMERICAN DREAM CITY

Kimley»Horn

City of Arlington
Thoroughfare Development Plan Update
2040 Level of Service

2040 Level of Service

- Acceptable (ABC)
- Tolerable (DE)
- Undesirable (F)
- City Limits

Date: 2/9/2017

FM157
GREEN OAKS BLVD
LINCOLN DR
BROWN BLVD
ASCENSION BLVD
BALLPARK WAY
AVE J
WASHINGTON DR
SNOW
RANDY
BAIRD FARM RD
GREEN OAKS BLVD NW
LAMAR BLVD
COPELAND RD
IH30 FRTG WB
IH30 FRTG EB
AVE E
COOPER ST
COCHISE DR
ROAD TO SIX FLAGS
RANDOL MILL RD
WESTWOOD DR
OAKWOOD LN
COUSIN LN
DAVIS DR
SANFORD ST
COLLINS ST FM157
LEGENDS WAY
SIX FLAGS DR
SH360 FRTG SB
SH360 FRTG NB
109TH ST
DALWORTH ST
CROWLEY RD
DIVISION ST SH180
UTA BLVD
CENTER ST SB
ABRAM ST
STADIUM DR
HOWELL ST
EDGE DR
2ND ST
MESQUITE ST NB
PECAN ST
BROWNING DR
FOREST LN
NORWOOD LN
MILBY
MITCHELL ST
SP303 PIONEER PKWY
LYNNWOOD DR
PARK ROW DR
SUSAN ST
TIMBERLAKE DR
FIELDER RD
CENTER ST
CARTER
WOODLAND PARK BLVD
SMITH BARRY RD
TUCKER BLVD
LOVERS LN
SHERRY ST
ROOSEVELT DR
WESTCHESTER
ARKANSAS LN
COLLINS ST
SP303
BOWEN RD
CALIFORNIA LN
MEDLIN DR
TIMBERVIEW LN
DANIEL DR
WATERVIEW DR
SPROCKET
COOPER ST FM157
MAYFIELD RD
WOODSIDE DR
CURT DR
SHOREWOOD DR
LITTLE RD
MORRIS
MELEAR DR
HIGH POINT
ARBROOK BLVD
ALLEN AVE
NEW YORK AVE
PLEASANT RIDGE
PLEASANT RIDGE RD
HIGHLANDER
ARBROOK
POLY WEBB RD
LITTLE
IH20 FRTG WB
IH20 FRTG EB
BARDIN RD
PARK SPRINGS BLVD
BARDIN
RACQUET CLUB RD
EMBER CREST
CENTER
SHERRY
CAPLIN
HIGH BANK
WIMBLEDON DR
JUNIPER
GREEN OAKS BLVD SW
CALIENTE
MANSFIELD
YAUPON
CREEK VALLEY
TREEPOINT DR
ANDALUSIA
NATHAN LOWE RD
CRAVENS PARK DR
BRADLEY
US287 FRTG SB
FIRETHORN
CALENDAR RD
COLLARD
KELLY ELLIOTT RD
PETRA
TENNESSEE
SUBLETT RD
FOX HUNT
HARWOOD RD
MATLOCK RD
WHEELER
SANDSTONE
REDSTONE DR
HARDISTY
AIRES
LYNN CREEK
SOUTHEAST PKWY
US287 FRTG NB
CURRY RD
FOX GLEN
EDEN RD
WILLOW
SILO RD
EDEN
LEDBETTER RD
CALENDER RD
HARRIS RD
WARNELL WALSH RD
MANSFIELD WEBB RD
SH360 FRTG SB
RUSSELL CURRY
RUSSELL RD
WANDA COMMERCIAL
BU287
TURNER WAY
BALLWEG
BRATCHER
MOSSBERG
LORETTA
DAY
TURNER WARNELL RD
Cottonwood Creek
Wildcat Branch
Joe Pool Lake
Walnut Creek
Tarrant
Dallas

ARLINGTON
THE AMERICAN DREAM CITY

Kimley»Horn

City of Arlington
Thoroughfare Development Plan Update
2017 TDP

Functional Class

- Major Arterial
- Minor Arterial
- Major Collector
- Minor Collector

- Existing Highway
- Future Highway
- Local Roads
- City Limits

Date: 4/12/2017

ARLINGTON
THE AMERICAN DREAM CITY

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