# AGENDA

## TOWN OF FLOWER MOUND
## TRANSPORTATION COMMISSION MEETING

## FEBRUARY 13, 2018

## FLOWER MOUND TOWN HALL
## 2121 CROSS TIMBERS ROAD
## FLOWER MOUND, TEXAS

## 6:30 P.M.

**********
**AN AGENDA INFORMATION PACKET IS AVAILABLE ONLINE**
**WWW.FLOWER-MOUND.COM/AGENDACENTER**
**********

**A. CALL REGULAR MEETING TO ORDER – 6:30 PM**

**B. PLEDGE OF ALLEGIANCE**

**C. PUBLIC PARTICIPATION**

Please fill out an "Appearance Before Transportation Commission" form in order to address the Transportation Commission, and turn the form in prior to Public Participation, or by 6:30 p.m. to the Town staff. Speakers are normally limited to three minutes. Time limits can be adjusted by the Chair as to accommodate more or fewer speakers.

The purpose of this item is to allow the public an opportunity to address the Transportation Commission on issues that are not the subject of a public hearing. Any item requiring Public Hearing will allow the public to speak at the time that the item appears on this agenda as indicated as a "Public Hearing".

**D. TRAFFIC ENGINEER REPORT**

- Update status report related to operational issues, capital improvement projects, and TxDOT projects
- Future Transportation Commission meeting dates

**E. CONSENT AGENDA – Consent Items**

This agenda consists of non-controversial or "housekeeping" items and may be approved with a single motion. A member of the Transportation Commission may request an item(s) be withdrawn from the consent agenda and moved to regular agenda for discussion by making such request prior to a motion and vote on the Consent Agenda.

1. Consider approval of minutes from the regular meeting of the Transportation Commission held on January 9, 2018.

**F. REGULAR ITEMS**

2. Consider a recommendation regarding a Thoroughfare Plan Amendment for the section of Silveron Boulevard from approximately 400 feet east of Long Prairie Road (FM 2499) to approximately 500 feet east of the Tarrant/Denton County Line to the Town Council.

3. Consider a recommendation regarding a Thoroughfare Plan Amendment for Morriss Road from Flower Mound Road (FM 3040) to Justin Road (FM 407) to the Town Council.

4. Consider a recommendation for a permanent speed limit reduction on Morriss Road between Flower Mound Road (FM 3040) to Cross Timbers Road (FM 1171) from 40 mph to 35 mph.

**G. ADJOURNMENT**

**Matthew Hotelling, Traffic Engineer**

I do hereby certify that the Notice of Meeting was posted on the bulletin board in Town Hall of the Town of Flower Mound, Texas, a place convenient and readily accessible to the general public at all times and said Notice was posted on the following date and time: February 9, 2018 at 5:00 PM, at least 72 hours prior to the scheduled time of said meeting.

**Delona Verplank, Administrative Assistant**

**The Flower Mound Town Hall and Council Chambers are wheelchair accessible. Requests for accommodations or interpretive services must be made at least 48 hours prior to this meeting by contacting Delona Verplank, Administrative Assistant at 972-874-6317. Reasonable accommodations will be made to assist your needs.**

## TRANSPORTATION COMMISSION AGENDA ITEM NO. 1

## CONSENT ITEM

**DATE:** February 13, 2018

**FROM:** Matthew J. Hotelling, P.E., PTOE, Traffic Engineer

**ITEM:** **Consider approval of the minutes from the regular meeting of the Transportation Commission held on January 9, 2018.**

**BACKGROUND INFORMATION:** This agenda item is to consider approval of the minutes from the January 9, 2018 regular meeting of the Transportation Commission.

**CITIZEN FEEDBACK:** N/A

**ALTERNATIVES/OPTIONS:** N/A

**FISCAL IMPACT:** N/A

**LEGAL REVIEW:** N/A

**ATTACHMENTS:**

1. Draft minutes from the January 9, 2018 regular meeting of the Transportation Commission.

**RECOMMENDATION:** Move to approve the minutes from the January 9, 2018 regular meeting of the Transportation Commission.

**THE FLOWER MOUND TRANSPORTATION COMMISSION REGULAR MEETING HELD ON THE 9TH DAY OF JANUARY, 2018 IN THE FLOWER MOUND TOWN HALL, LOCATED AT 2121 CROSS TIMBERS ROAD, IN THE TOWN OF FLOWER MOUND, COUNTY OF DENTON, TEXAS AT 6:30 P.M.**

The Transportation Commission met in regular session with the following members present:

| | |
|---|---|
| Thomas Walker | Chair |
| Chris Reed | Vice Chair |
| Robert Gunter | Commissioner, Place 1 |
| Ron Hogue | Commissioner, Place 3 |
| Brian Smiley | Commissioner, Place 4 |
| Donald Gilmore | Commissioner, Place 5 |
| Ed Horne | Commissioner, Place 8 |
| Drew Larson | Commissioner, Place 9 |

Constituting a quorum with the following members absent:

| | |
|---|---|
| Robert Caput | Commissioner, Place 2 |

*(Places 8 and 9 of the Commission do not vote on items unless they sit in place of one of the regular members; Places 1-7.)*

With the following members of the Town Staff participating:

| | |
|---|---|
| Matthew Hotelling | Traffic Engineer |
| Delona Verplank | Administrative Assistant |

## A. CALL TO ORDER - REGULAR SESSION – 6:30 P.M.

## B. PLEDGE OF ALLEGIANCE

## C. PUBLIC PARTICIPATION

Paul Stone, 4100 Broadway, Flower Mound, TX
Mr. Stone wanted to make the Commission aware that the Morriss-Gerault Phase II project is scheduled as an upcoming agenda item at the January 18 Town Council meeting.

## D. TRAFFIC ENGINEER REPORT

- Update status report related to operational issues, capital improvement projects, and TxDOT projects

- Future Transportation Commission meeting dates

## E. CONSENT AGENDA

1. Consider approval of minutes from the regular meeting of the Transportation Commission held on December 12, 2017.

Commissioner Gunter made a motion to approve the December 12, 2017 minutes as presented. Vice Chair Reed seconded the motion.

**VOTE ON THE MOTION** *Motion passed*

**AYES:** All in favor

**NAYS:** None

**ABSTAIN:** None

**ABSENT:** Caput

## F. REGULAR ITEMS

2. Next steps regarding the airbag recall and options for outreach through the Town and the Transportation Commission.

**Presenter**
Ken Benson, Consultant to the Airbag Recall North Texas Coalition

Commissioner Gunter made a motion to become a partner with the Airbag Recall North Texas Coalition and to impower a three-person subcommittee, comprised of Commissioners Gilmore and Larson and Vice Chair Reed, to create a plan that outlines the activities and actions of that partnership. Vice Chair Reed seconded the motion.

**VOTE ON THE MOTION** *Motion passed*

**AYES:** Gilmore, Hogue, Gunter, Reed, Smiley, Horne

**NAYS:** None

**ABSTAIN:** None

**ABSENT:** Caput

## G. WORKSESSION ITEMS

3. Presentation and discussion related to list of potential Transportation Commission work topics for 2018.

**H. ADJOURNMENT – 8:20 P.M.**

TOWN OF FLOWER MOUND
TRANSPORTATION COMMISSION

_____
Thomas Walker, Chairman

ATTEST:

_____
Delona Verplank, Administrative Assistant

**TRANSPORTATION COMMISSION AGENDA ITEM NO. 2**

**REGULAR ITEM**

**DATE:** February 13, 2018

**FROM:** Matthew J. Hotelling, P.E., PTOE, Traffic Engineer

**ITEM:** **Consider a recommendation regarding a Thoroughfare Plan Amendment for the section of Silveron Boulevard from approximately 400 feet east of Long Prairie Road (FM 2499) to approximately 500 feet east of the Tarrant/Denton County Line to the Town Council.**

**BACKGROUND INFORMATION:** This item is to consider changes to the Master Transportation Plan, more specifically the Thoroughfare Plan regarding Silveron Boulevard between approximately 400 feet east of Long Prairie Road (FM 2499) to approximately 500 feet east of the Tarrant/Denton County Line. A copy of the existing Thoroughfare Plan is included as Attachment 1. This section of Silveron Boulevard is currently built to the current Thoroughfare Plan designation of an Urban Minor Arterial (4 lane divided roadway that flares to a six lane divided arterial at the intersection of Long Prairie Road (FM 2499) to match up with Lakeside Village on the west side of Long Prairie Road (FM 2499). The Town initiated a Thoroughfare Plan Analysis for this section of roadway to determine if a 2 lane divided roadway with either parallel or angled parking would be sufficient to handle the anticipated traffic through this section of Silveron Boulevard. The section of Silveron northeast of this location would remain an Urban Minor Arterial (4 lane divided roadway). The traffic study for this location is included as Attachment 2.

The recently approved Point Development and an anticipated future development were used as part of this analysis to determine if this section of Silveron Boulevard would be satisfactory. The Town's TransCAD model was used to determine future volumes with a range of both high and low traffic volumes. Through the analysis, the anticipated build out of these two parcels fell within that range of traffic.

Council directed staff to examine pedestrian friendly designs that include on-street parking along this section of the roadway. The Town examined two options: 1) a 2 lane divided roadway with parallel parking, and; 2) a 2 lane divided roadway with angled parking. The purpose was to determine which design supported the best LOS while remaining pedestrian friendly. Currently, under design, is a traffic signal installation at the intersection of Long Prairie Road (FM 2499) that will provide pedestrian signals and crosswalks at that intersection. In the midblock location, there is currently no crosswalk or warning signs of a future crossing. They are not necessary at this time because there is no development on the ground currently. When the developments do break ground there is intended to be a private trail crossing at the median opening location to cross from the north side to the south side and vice versa. As a part of those development plans, Americans with Disabilities Act (ADA) ramps and warning signs will be installed. The Point Development has asked the Town to look at the possibility of converting the current outside travel lane to parallel parking. As part of the study both parallel and angled parking were studied. Both parallel and angled parking reduce the capacity of the adjacent travel lanes by approximately 20% and 10% respectively.

**THOROUGHFARE CAPACITY ANALYSIS:** The thoroughfare plan capacity analysis was used to determine if the new cross section would be acceptable or if the new cross section would fail Strategically Managed and Responsible Town Growth (SMARTGrowth). In order to determine if the new cross section would pass or fail, a new category within the Level of Service (LOS) Table was required. The new category would be an A2D (Arterial 2-lane Divided). The Town's acceptable LOS for arterial and collector's is LOS C. At LOS C, the upper limit for A2D was determined to be 650 vehicles without on-street parking. Therefore, and A2D with parallel parking would have an upper limit at LOS C of 520 vehicles and with angled parking an upper limit of 585.

Four scenarios were evaluated to determine if the LOS for the A2D would be acceptable. Those four scenarios are: Existing, Horizon, Model – Low, Model – High. Both of the model scenarios were based on

the Town's TransCAD model in year 2040. Using the existing configuration and current traffic volumes, the traffic condition of Silveron Boulevard is acceptable. Currently, there is very little traffic along this corridor but is anticipated to increase once the traffic signal is installed at Long Prairie Road (FM 2499 and Silveron Boulevard/Lakeside Village Boulevard).

Using the Horizon year (2021) of both the Point Development and the future development on the south side of Silveron Boulevard, both the current configuration and angled parking are within acceptable LOS. The conversion to parallel parking is beyond LOS C and would not pass SMARTGrowth. They would be tolerable to the fact that they have not made it to a LOS F.

Using the Model – Low volumes of the Town's TransCAD model, all scenarios are acceptable however, the analysis of the likelihood of how both of these properties developing would be at a higher level than those indicated by the Model – Low volumes.

Using the Model – High volumes of the Town's TransCAD model, only the current configuration of a 4 lane divided roadway would fall in the acceptable levels. Both types of parking scenarios would have failing (LOS F) sections of roadway. The directions that are not failing (LOS F) would not pass SMARTGrowth and would be beyond a LOS C.

**ALTERNATIVES/OPTIONS:** Leave Silveron Boulevard as is with additional pedestrian treatments or change to a different cross section.

**FISCAL IMPACT:** N/A

**LEGAL REVIEW:** N/A

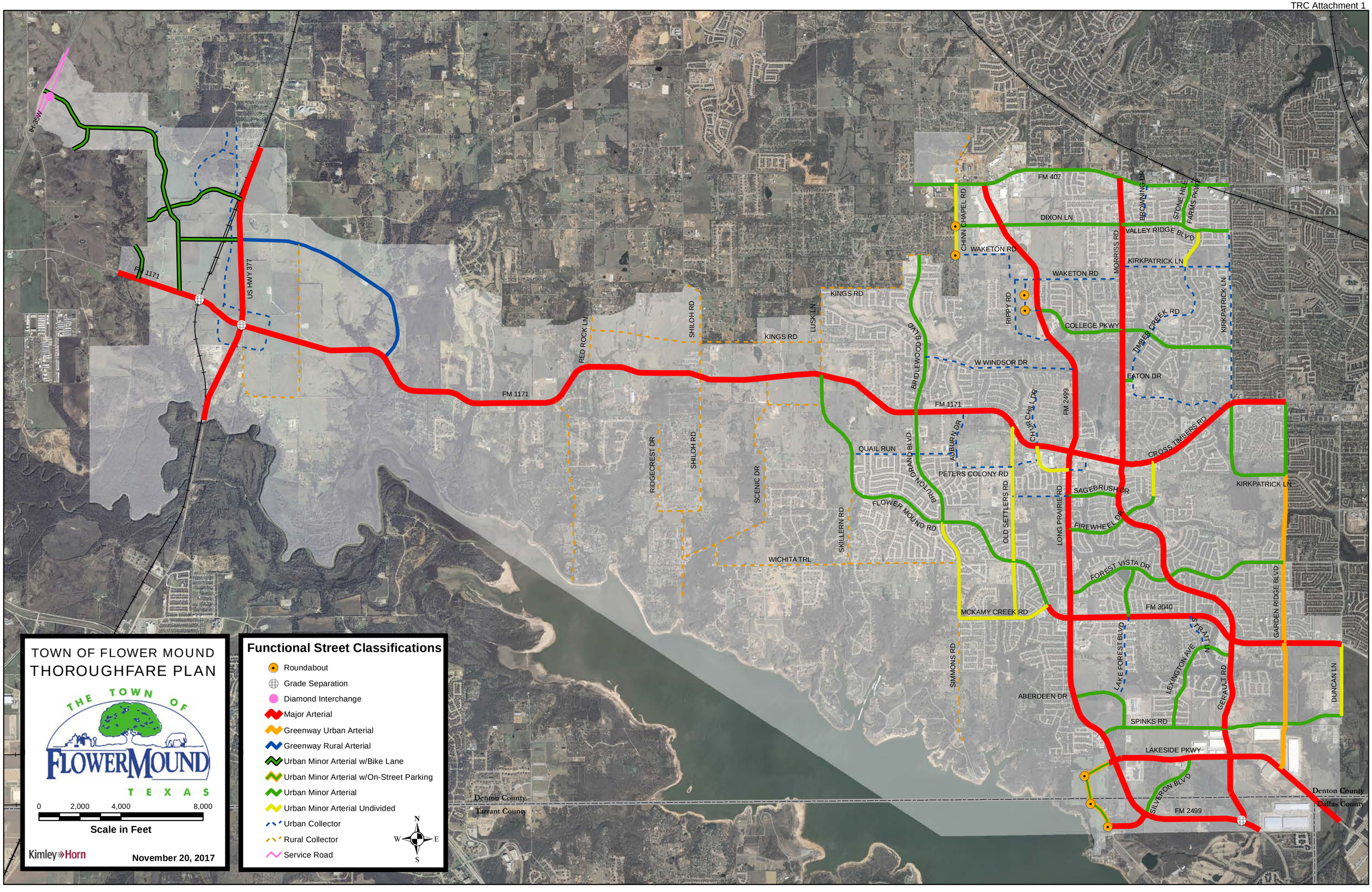
**ATTACHMENTS:**

1. Existing Thoroughfare Plan
2. Silveron Boulevard Thoroughfare Plan Analysis

**DRAFT RECOMMENDATIONS:** Move to recommend that Silveron Boulevard from approximately 400 feet east of Long Prairie Road (FM 2499) to approximately 500 feet east of the Tarrant/Denton County Line remain as currently shown on the Thoroughfare Plan.

Move to recommend that Silveron Boulevard from approximately 400 feet east of Long Prairie Road (FM 2499) to approximately 500 feet east of the Tarrant/Denton County Line be changed to a two lane divided arterial with angled parking on the Thoroughfare Plan.

Move to recommend that Silveron Boulevard from approximately 400 feet east of Long Prairie Road (FM 2499) to approximately 500 feet east of the Tarrant/Denton County Line be changed to a two lane divided arterial with parallel parking on the Thoroughfare Plan.




TOWN OF FLOWER MOUND
THOROUGHFARE PLAN

THE TOWN OF FLOWER MOUND TEXAS

0 2,000 4,000 8,000

Scale in Feet

Kimley»Horn

November 20, 2017

## Functional Street Classifications

- Roundabout
- Grade Separation
- Diamond Interchange
- Major Arterial
- Greenway Urban Arterial
- Greenway Rural Arterial
- Urban Minor Arterial w/Bike Lane
- Urban Minor Arterial w/On-Street Parking
- Urban Minor Arterial
- Urban Minor Arterial Undivided
- Urban Collector
- Rural Collector
- Service Road

N W E S

Kimley»Horn

## MEMORANDUM

1-29-2018


To: Matthew J. Hotelling, P.E., PTOE
Transportation Services
Town of Flower Mound, Texas

From: Jeff Whitacre, P.E., AICP, PTP
Kimley-Horn and Associates, Inc.
TBPE Registered Firm Number F-928

Date: January 29, 2018

Subject: Silveron Boulevard Cross Section Evaluation
Flower Mound, Texas

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## Introduction

Kimley-Horn was retained by the Town of Flower Mound to perform a cross section evaluation of Silveron Boulevard. The purpose of this study is to evaluate the impact of converting the outside lanes to on-street parking. The study area for this evaluation is from FM 2499 to the existing bridge approximately 1,500 feet east of FM 2499. Silveron Boulevard in the study area is currently a six-lane divided facility between FM 2499 and the existing median opening, and a four-lane facility between the existing median opening and the bridge. This evaluation will consist of an analysis of Existing (2017) and Horizon (2021) conditions. It is proposed that by the Horizon year (2021), the outside lanes of Silveron Boulevard in the study area be converted to on-street parking to serve future mixed-use development.

To estimate Horizon (2021) traffic volumes in the study area, the analysis will consider development that is anticipated to be occur along Silveron Boulevard. Northwest of Silveron Boulevard, The Point is a known development anticipated to be built out by 2019. A Traffic Impact Analysis (TIA) was conducted for The Point and submitted to the Town of Flower Mound in September 2017. This TIA will be referenced in this study. The development pattern southeast of Silveron Boulevard is currently unknown. Estimates for future land uses were provided by the Town based on an anticipated growth pattern of mixed-use development, similar to The Point. This development area will be referred to in this study as Future Development. A vicinity map of the study area can be found in **Exhibit 1**.

The following sections document the data collection and methodology used in evaluating Silveron Boulevard.

North

Not To Scale


**Exhibit 1**

Vicinity Map

Silveron Cross Section Analysis

Kimley»Horn

## Existing (2017) and Horizon (2021) Background Traffic Volumes

Twenty-four-hour recording machine tube counts were obtained on December 12, 2017 on Silveron Boulevard, east of FM 2499. These volumes are presented in **Exhibit 2.**

In order to estimate future background growth along Silveron Boulevard, a growth rate of 4% was used to grow the Existing (2017) volumes to the Horizon (2021) year. This growth rate was obtained from The Point TIA. The calculated Horizon (2021) Background volumes can be found in **Exhibit 3**.

## Horizon (2021) Total Traffic Volumes

The Horizon (2021) total traffic volumes were calculated by combining projected site traffic from The Point and Future Development with the Horizon (2021) Background volumes. Site traffic volumes for The Point are presented in **Exhibit 4**.

To estimate trips generated by the Future Development, average trip generation rates from the 10th edition of the *ITE Trip Generation Manual* were used. **Table 1** shows the trip generation rates for the proposed land uses.

*Table 1. Trip Generation Rates*

| Land Use Description | ITE Code | Units | Daily | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | AVG Rate | Split | | AVG Rate | Split | |
| | | | | | In | Out | | In | Out |
| Single Family | 210 | Units | 9.44 * (X) | 0.74 * (X) | 25% | 75% | 0.99 * (X) | 63% | 37% |
| Apartments (Multi-Family) | 221 | Rooms | 5.44 * (X) | 0.36 * (X) | 26% | 74% | 0.44 * (X) | 61% | 39% |
| Hotel | 310 | Rooms | 8.36 * (X) | 0.47 * (X) | 59% | 41% | 0.60 * (X) | 51% | 49% |
| Retail | 820 | 1000 ft$^2$ | 37.75 * (X) | 0.94 * (X) | 62% | 38% | 3.81 * (X) | 48% | 52% |
| Restaurant | 932 | 1000 ft$^2$ | 112.18 * (X) | 9.94 * (X) | 55% | 45% | 9.77 * (X) | 62% | 38% |
| Industrial | 110 | 1000 ft$^2$ | 4.96 * (X) | 0.70 * (X) | 88% | 12% | 0.63 * (X) | 13% | 87% |
| Office | 710 | 1000 ft$^2$ | 9.74 * (X) | 1.16 * (X) | 86% | 14% | 1.15 * (X) | 16% | 84% |
| Number of Trips Generated = Trip Rate * (Development Unit); X = Units | | | | | | | | | |

**Table 2** summarizes the total number of trips that are expected to be generated at build-out of the Future Development for daily and AM and PM peak periods. The variety and intensity of land uses were estimated based on coordination with Town staff. The number of trips generated represents the number of vehicles entering and exiting the proposed development to and from the adjacent street system.

*Table 2. Trip Generation Analysis*

| Land Use Description | ITE Code | Intensity | Units | Daily | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Split | | Total | Split | | Total |
| | | | | | In | Out | | In | Out | |
| Single Family | 210 | 250 | Units | 2360 | 46 | 139 | 185 | 156 | 92 | 248 |
| Apartments (Multi-Family) | 221 | 600 | Rooms | 3264 | 56 | 160 | 216 | 161 | 103 | 264 |
| Hotel | 310 | 90 | Rooms | 752 | 25 | 17 | 42 | 28 | 26 | 54 |
| Retail | 820 | 51,000 | $ft^2$ | 1925 | 30 | 18 | 48 | 93 | 101 | 194 |
| Restaurant | 932 | 87,120 | $ft^2$ | 9773 | 476 | 390 | 866 | 528 | 323 | 851 |
| Industrial | 110 | 30,000 | $ft^2$ | 149 | 18 | 3 | 21 | 2 | 17 | 19 |
| Office | 710 | 171,000 | $ft^2$ | 1666 | 170 | 28 | 198 | 32 | 165 | 197 |
| **Total** | | | | | 821 | 755 | 1576 | 1000 | 827 | 1827 |

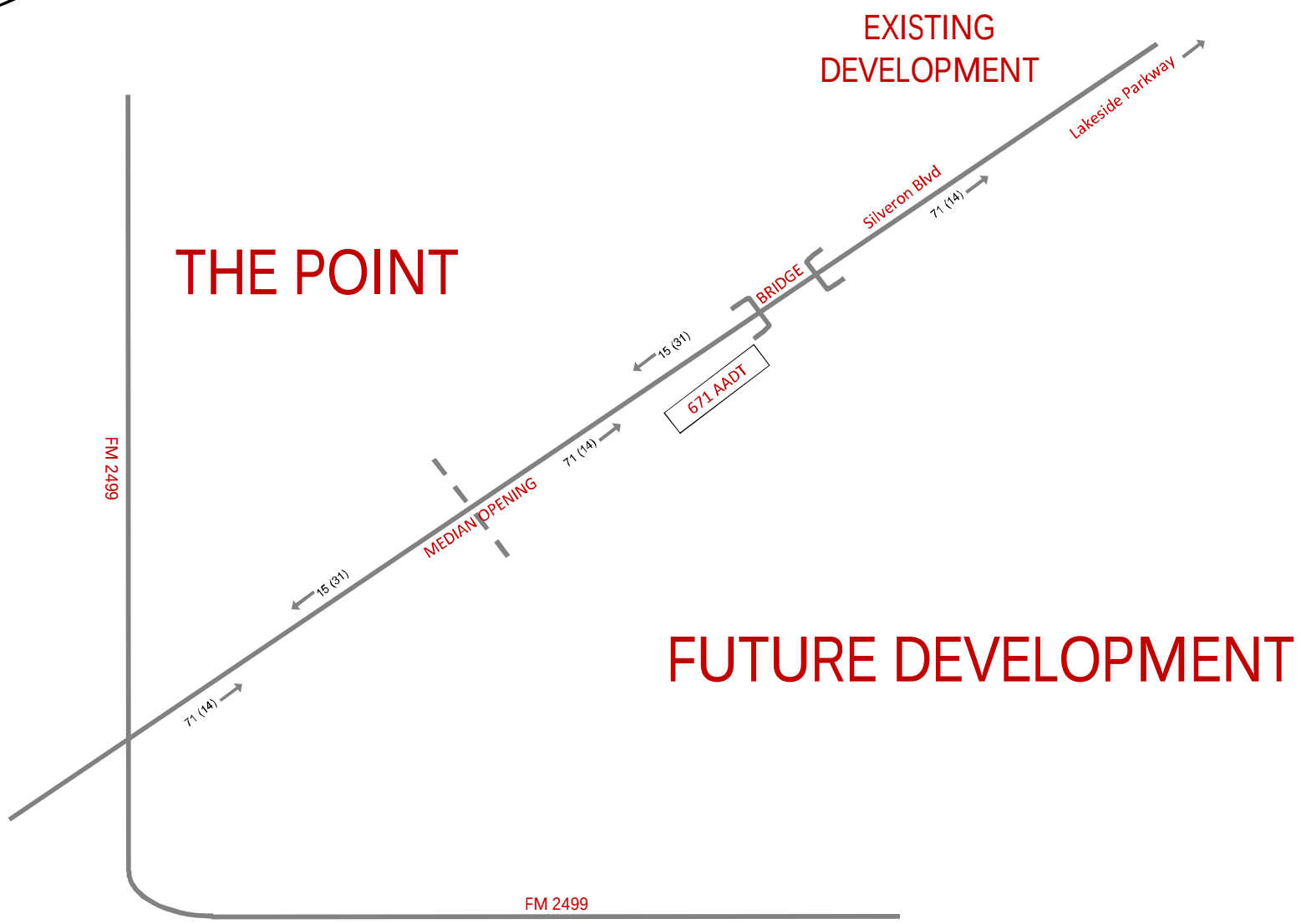
The distribution and assignment of site traffic to the study area roadway network were based on existing traffic patterns and the locations of the proposed driveway access to/from the site. The following percentages of trip distribution are assumed on the surrounding roadway network:

- 40% - FM 2499, south of the study area
- 30% - FM 2499 & Lakeside Village Boulevard intersection, southwest of the study area
- 30% - Lakeside Parkway, north of the study area

**Exhibit 5** presents the inbound and outbound directional distribution percentages for traffic during the Weekday AM and PM peak hours for the Future Development. **Exhibit 6** presents the site trip assignment during the Weekday AM and PM peak hours.

These site-generated traffic volumes were added to the 2021 Horizon Background traffic volumes along with site traffic from The Point to obtain the 2021 Total Traffic Volumes. These volumes are presented in **Exhibit 7**.

Based on **Exhibit 7,** the traffic projected west of the bridge would be approximately 7,600 vehicles per day.




LEGEND:

Stop = Stop Controlled Approach

= Travel Lane

North

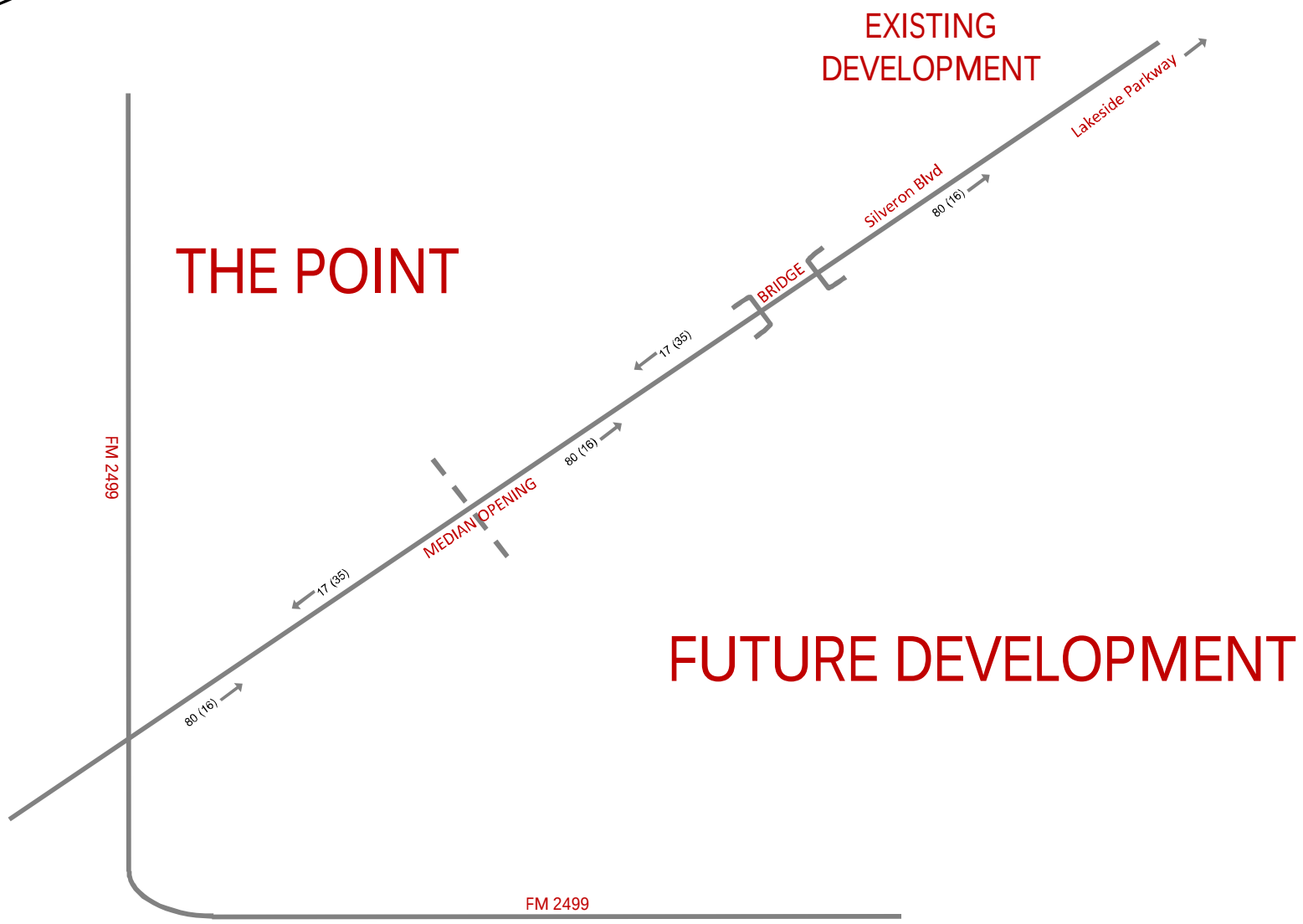
Not To Scale

**Exhibit 2**

Existing (2017) Traffic Volumes

Silveron Cross Section Analysis

Kimley»Horn




LEGEND:

Stop = Stop Controlled Approach

= Travel Lane

North

Not To Scale

**Exhibit 3**

Horizon (2021) Background Volumes

Silveron Cross Section Analysis

Kimley»Horn

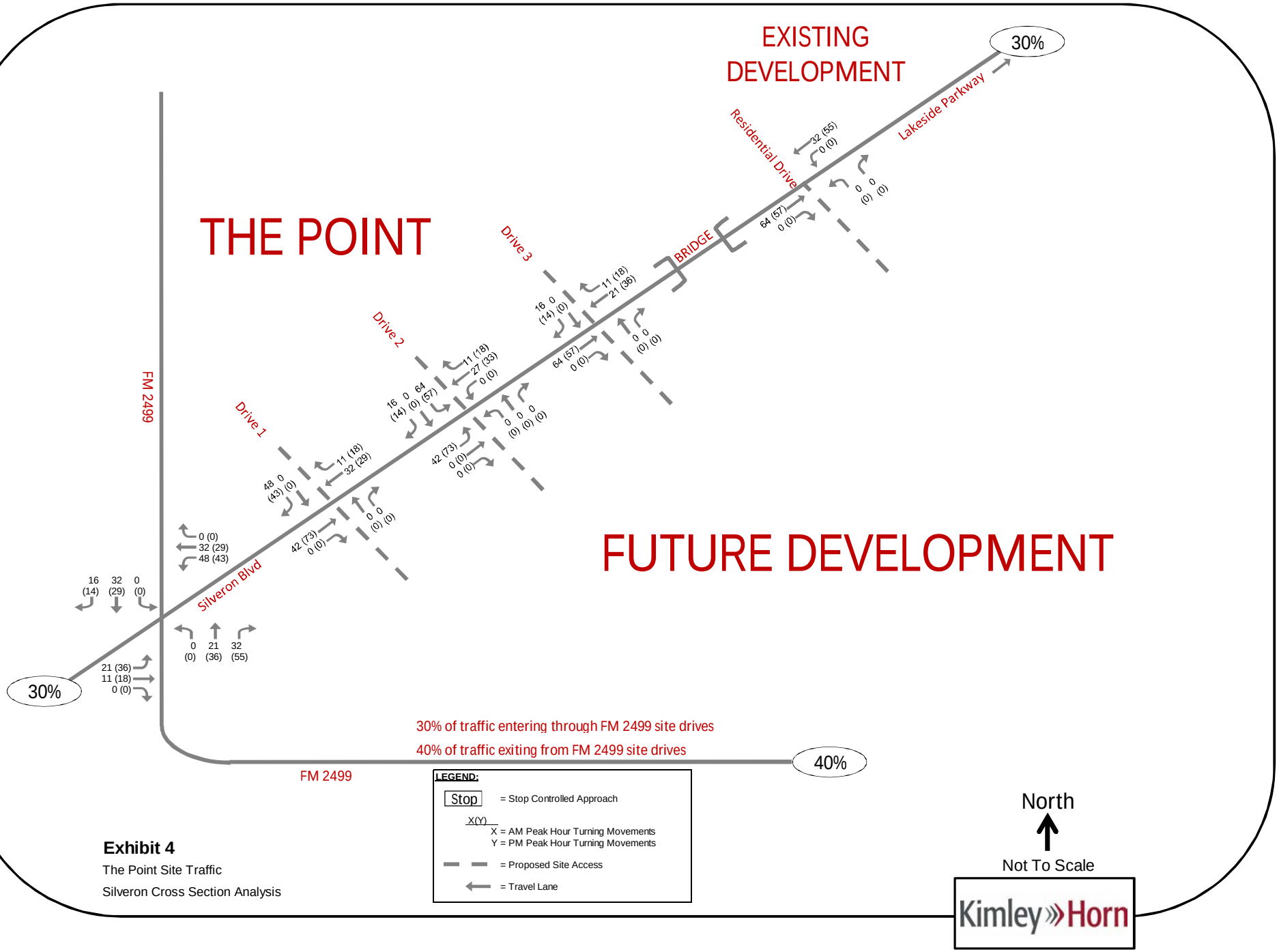



**Exhibit 4**

The Point Site Traffic

Silveron Cross Section Analysis

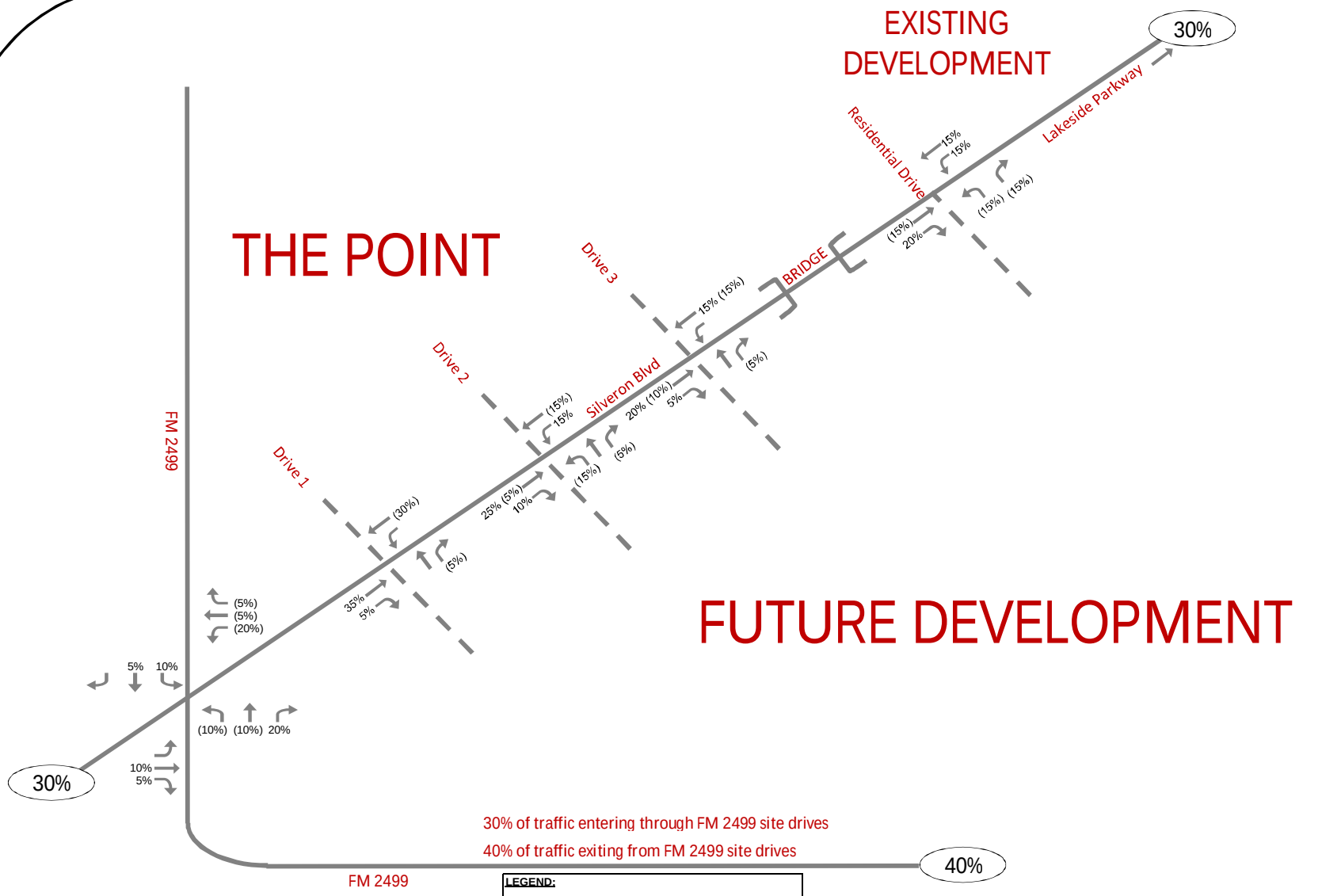



**Exhibit 5**

Future Development Trip Distribution

Silveron Cross Section Analysis

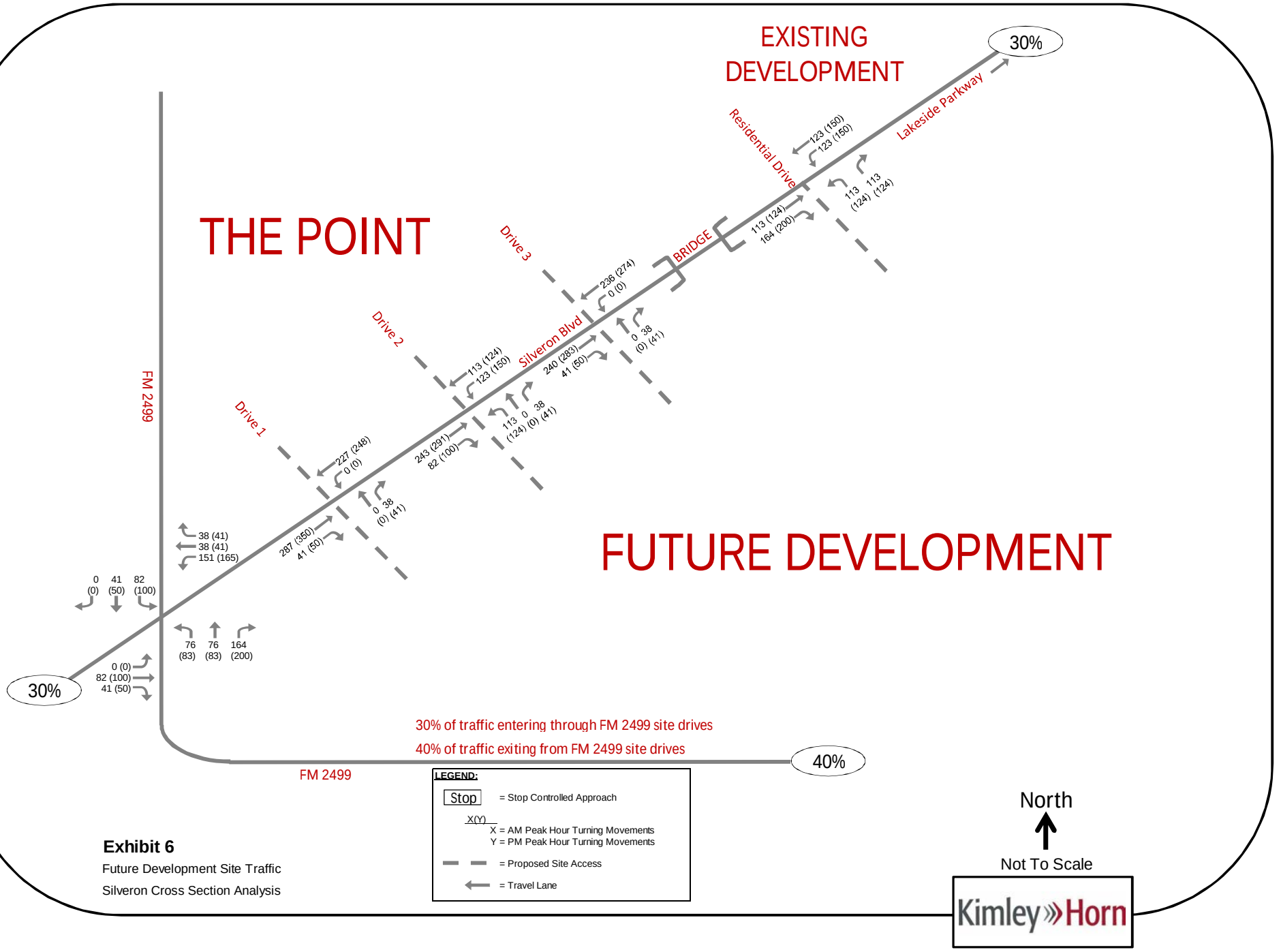



**Exhibit 6**

Future Development Site Traffic

Silveron Cross Section Analysis

Kimley»Horn

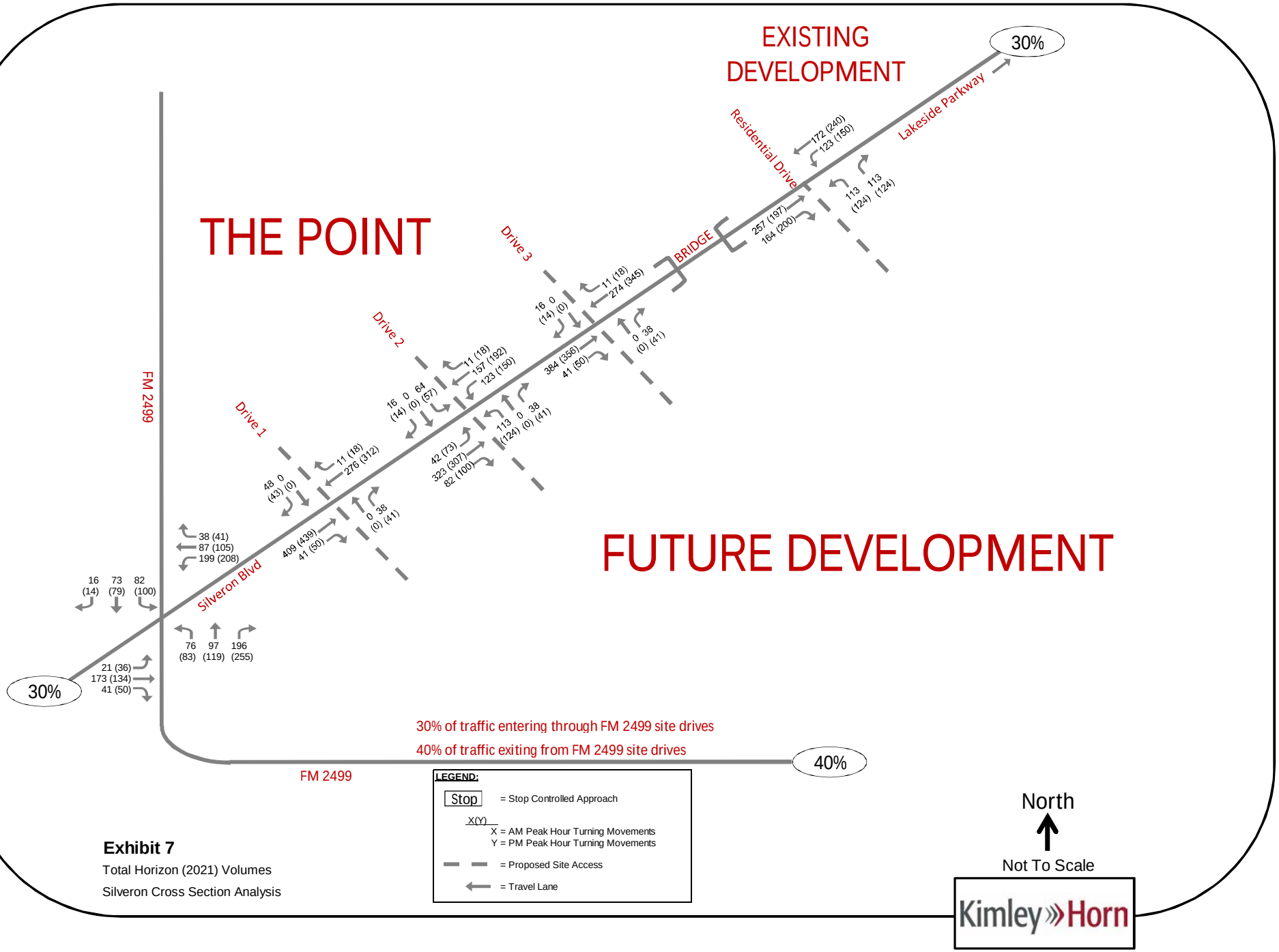



**Exhibit 7**

Total Horizon (2021) Volumes

Silveron Cross Section Analysis

## Future Model Volumes

Based on the model update for the 2014 Impact Fees, the future year ADT along Silveron Boulevard was forecasted to be approximately 3,000 vehicles per day. Recently, the DFW model was updated to reflect 2040 demographics and roadway network, and based on the updated model, the future year ADT along Silveron Boulevard is anticipated to be approximately 10,000 vehicles per day. Based on these two points of reference, it can be expected that the future year volume along Silveron Boulevard will be between 3,000 and 10,000 vehicles per day. Note the calculations in this traffic study were in this range (7,600 vehicles per day).

## Thoroughfare Capacity Analysis

To properly evaluate the effects of reducing the number of lanes on Silveron Boulevard, a thoroughfare capacity analysis was conducted. The analysis was completed using level of service criteria provided in Chapter 6 of the *Town of Flower Mound SMARTGrowth Manual*.

Capacity defines the volume of traffic that can be accommodated by a roadway at a specific "level of service," and is affected by various geometric factors including roadway type (divided vs undivided), number of lanes, lane widths, and grade. Level of service (LOS), which is a measure of the degree of congestion, ranges from LOS A (free flowing) to LOS F (a congested, forced flow condition). **Table 3** shows the *Town of Flower Mound SMARTGrowth Manual* level of service criteria for the thoroughfare capacity analysis. LOS C is the minimum acceptable level of service by the Town of Flower Mound for design and evaluation purposes.

*Table 3. SMARTGrowth Level of Service Thresholds for Thoroughfares*

| Roadway Type | Level of Service "C" | | Level of Service "D" | | Level of Service "E" | |
|---|---|---|---|---|---|---|
| | Daily Service Volumes* | Hourly Service Volume | Daily Service Volumes* | Hourly Service Volume | Daily Service Volumes* | Hourly Service Volume |
| A8D*** | 52,000 - 58,000 | 780 - 880** | 58,000 - 66,000 | 880 - 990** | 66,000 - 73,000 | 990 - 1,100** |
| A6D*** | 39,000 - 44,000 | 780 - 880** | 44,000 - 49,000 | 880 - 990* | 49,000 - 55,000 | 990 - 1,100** |
| A4D*** | 21,000 - 23,000 | 620 - 700** | 23,000 - 26,000 | 700 - 775** | 26,000 - 29,000 | 775 - 875** |
| MC4U | 17,000 - 18,000 | 500 - 550** | 18,000 - 21,000 | 550 - 625** | 21,000 - 23,000 | 625 - 675** |
| C4U | 15,000 - 17,000 | 440 - 500** | 17,000 - 18,000 | 500 - 550** | 18,000 - 21,000 | 550 - 625** |
| C2U | 6,000 - 7,000 | 350 - 425** | 7,000 - 8,000 | 425 - 500** | 8,000 - 9,500 | 500 - 575** |

** Level of service with "K" = 0.10 and "D" = 60%/40%*

*** Assumes signal progression; no parking; access management; increased intersection capacity and grade seperation*

**** Assumes 12' lanes and divided roadway; A8D = arterial 8 lane divided; A6D = arterial 6 lane divided; A4D = arterial 4 lane divided*

*Note: Metropolitian collector MC4U = 4 lane undivided (12' lanes); C4U = collector 4 lane undivided (11' lanes)*

*The Town of Flower Mound SMARTGrowth Manual* does not currently provide capacity values for two-lane divided roadways (A2D). It is anticipated that this classification will be added to the *SMARTGrowth Manual* in the near future. To estimate the appropriate hourly capacity for A2D facilities, existing NCTCOG and *SMARTGrowth* capacity values were referenced. It is estimated that a two-lane divided facility will provide more capacity than a standard undivided collector, but less than a traditional divided arterial due to the lack of a passing lane. Based on these assumptions, an hourly capacity of 650 vehicles was assumed for the A2D facilities at the LOS C threshold.

**Table 4** provides a summary of directional and two-way thoroughfare capacity analysis for Silveron Boulevard in Existing (2017), Horizon (2021), and Model volume conditions. The Model Volume analysis was split into two scenarios: a low-end scenario, and a high-end scenario. The low-end scenario is based on a daily volume of 3,000 vehicles, and the high-end scenario is based on a daily volume of 10,000 vehicles. The analysis evaluates the following lane configurations:

- Existing lane configuration
- Outside lanes converted to parallel parking
- Outside lanes converted to parallel parking from FM 2499 to the existing median opening, and angled parking between the median opening and the bridge

**Effects of On-Street Parking**

It is generally accepted that the presence of on-street parking has many different impacts on a roadway, including the portion of right-of-way not used for vehicular travel. On-street parking is widely recommended as a method of enhancing a street because it provides a barrier between vehicular and pedestrian traffic, acts as a traffic calming measure, and can help to boost the economic activity of the surrounding area.

The impact of on-street parking on traffic flow can vary widely depending on the type of parking that is provided and the expected hourly turnover. Studies have estimated that on-street parking can decrease roadway capacity by up to 17% in areas with high-turnover and parking configurations requiring reverse maneuvers. This reduction in capacity can also be as little as 2% in areas with low turnover and parking configurations that result in fewer reverse maneuvers. For the purposes of this analysis, conservative reduction factors of 10% and 20% were applied to the SMARTGrowth capacity values to account for the impacts of angled parking and parallel parking, respectively. As shown in the table, both roadway segments in Existing (2017) and Horizon (2021) scenarios are anticipated to perform at acceptable operations throughout the corridor.

**Results**

Based on the results of the thoroughfare capacity analysis presented in **Table 4,** Silveron Boulevard is anticipated to operate at LOS C or better for all scenarios except for the high-end model volume scenario along the two lane section west of the bridge. This scenario shows a potential for LOS D operation during the AM and PM peak hours in the direction of

peak hour flow. This represents the maximum growth along Silveron Boulevard based on the travel demand model. It is more likely that Silveron Boulevard will experience growth that is somewhere between the high and low end scenarios.

*Table 4. Thoroughfare Capacity Analysis Summary*

| Scenario | Segment | Lane Configuration | Class (Section) | SMART-Growth Capacity | Capacity with On-Street Parking | Direction | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Vol | V/C | Traffic Condition | Vol | V/C | Traffic Condition |
| Existing (2017) | East of FM 2499 | 6 Lanes Divided | Urban Minor Arterial | 880 | - | EB | 71 | 0.03 | Acceptable | 14 | 0.01 | Acceptable |
| | | | | | | WB | 15 | 0.01 | Acceptable | 31 | 0.01 | Acceptable |
| | | | | | | Total | 86 | 0.02 | Acceptable | 45 | 0.01 | Acceptable |
| | West of Bridge | 4 Lanes Divided | Urban Minor Arterial | 700 | - | EB | 71 | 0.05 | Acceptable | 14 | 0.01 | Acceptable |
| | | | | | | WB | 15 | 0.01 | Acceptable | 31 | 0.02 | Acceptable |
| | | | | | | Total | 86 | 0.03 | Acceptable | 45 | 0.02 | Acceptable |
| Horizon (2021) | East of FM 2499 | 4 Lanes Divided with Parallel Parking** | Urban Minor Arterial | 700 | 560 | EB | 447 | 0.40 | Acceptable | 480 | 0.43 | Acceptable |
| | | | | | | WB | 270 | 0.24 | Acceptable | 316 | 0.28 | Acceptable |
| | | | | | | Total | 717 | 0.32 | Acceptable | 796 | 0.36 | Acceptable |
| | West of Bridge | 2 Lanes Divided with Parallel Parking** | Urban Minor Arterial | 650 | 520 | EB | 361 | 0.69 | Tolerable | 348 | 0.67 | Tolerable |
| | | | | | | WB | 274 | 0.53 | Acceptable | 345 | 0.66 | Tolerable |
| | | | | | | Total | 635 | 0.61 | Acceptable | 693 | 0.67 | Tolerable |
| | West of Bridge | 2 Lanes Divided with Angled Parking* | Urban Minor Arterial | 650 | 585 | EB | 361 | 0.62 | Acceptable | 348 | 0.59 | Acceptable |
| | | | | | | WB | 274 | 0.47 | Acceptable | 345 | 0.59 | Acceptable |
| | | | | | | Total | 635 | 0.54 | Acceptable | 693 | 0.59 | Acceptable |
| Model (Low End) | East of FM 2499 | 4 Lanes Divided with Parallel Parking** | Urban Minor Arterial | 700 | 560 | EB | 180 | 0.16 | Acceptable | 120 | 0.11 | Acceptable |
| | | | | | | WB | 120 | 0.11 | Acceptable | 180 | 0.16 | Acceptable |
| | | | | | | Total | 300 | 0.13 | Acceptable | 300 | 0.13 | Acceptable |
| | West of Bridge | 2 Lanes Divided with Parallel Parking** | Urban Minor Arterial | 650 | 520 | EB | 180 | 0.35 | Acceptable | 120 | 0.23 | Acceptable |
| | | | | | | WB | 120 | 0.23 | Acceptable | 180 | 0.35 | Acceptable |
| | | | | | | Total | 300 | 0.29 | Acceptable | 300 | 0.29 | Acceptable |
| | West of Bridge | 2 Lanes Divided with Angled Parking* | Urban Minor Arterial | 650 | 585 | EB | 180 | 0.31 | Acceptable | 120 | 0.21 | Acceptable |
| | | | | | | WB | 120 | 0.21 | Acceptable | 180 | 0.31 | Acceptable |
| | | | | | | Total | 300 | 0.26 | Acceptable | 300 | 0.26 | Acceptable |
| Model (High End) | East of FM 2499 | 4 Lanes Divided with Parallel Parking** | Urban Minor Arterial | 700 | 560 | EB | 600 | 0.54 | Acceptable | 400 | 0.36 | Acceptable |
| | | | | | | WB | 400 | 0.36 | Acceptable | 600 | 0.54 | Acceptable |
| | | | | | | Total | 1,000 | 0.45 | Acceptable | 1,000 | 0.45 | Acceptable |
| | West of Bridge | 2 Lanes Divided with Parallel Parking** | Urban Minor Arterial | 650 | 520 | EB | 600 | 1.15 | Failing | 400 | 0.77 | Tolerable |
| | | | | | | WB | 400 | 0.77 | Tolerable | 600 | 1.15 | Failing |
| | | | | | | Total | 1,000 | 0.96 | Tolerable | 1,000 | 0.96 | Tolerable |
| | West of Bridge | 2 Lanes Divided with Angled Parking* | Urban Minor Arterial | 650 | 585 | EB | 600 | 1.03 | Failing | 400 | 0.68 | Tolerable |
| | | | | | | WB | 400 | 0.68 | Tolerable | 600 | 1.03 | Failing |
| | | | | | | Total | 1,000 | 0.85 | Tolerable | 1,000 | 0.85 | Tolerable |

* A 10% reduction of SMARTGrowth capacity volumes was assumed for Angled On-Street Parking capacity in the Horizon and Model scenarios.
** A 20% reduction of SMARTGrowth capacity volumes was assumed for Parallel On-Street Parking capacity in the Horizon and Model scenarios.

## Conclusion

Based on the results of the Silveron Boulevard cross section analysis, we offer the following conclusions and recommendations:

- Based on an analysis of anticipated development, Silveron Boulevard is projected to grow to a peak hour volume of 700 - 800 vehicles by the Horizon (2021) year.

- Based on a model volume analysis, Silveron Boulevard is project to grow to a peak hour volume of 300 - 1,000 vehicles by the year 2040.

- It is anticipated that Silveron Boulevard in the study area will operate at LOS C or better in the Horizon (2021) and Low-End Model Volume Scenarios if the outside lanes are converted to on-street parking. If volumes approach the 2040 high-end model volume scenario (10,000-11,000 daily), it is anticipated that operating conditions in the study area will shift to LOS D.

## Attachments

1. Exhibit 1 – Vicinity Map
2. Exhibit 2 – Existing (2017) Volumes
3. Exhibit 3 – Horizon (2021) Background Volumes
4. Exhibit 4 – The Point Site Traffic
5. Exhibit 5 – Future Development Trip Distribution
6. Exhibit 6 – Future Development Site Traffic
7. Exhibit 7 – Total Horizon (2021) Volumes

## TRANSPORTATION COMMISSION AGENDA ITEM NO. 3

## REGULAR ITEM

**DATE:** February 13, 2018

**FROM:** Matthew J. Hotelling, P.E., PTOE, Traffic Engineer

**ITEM:** **Consider a recommendation regarding a Thoroughfare Plan Amendment for Morriss Road from Flower Mound Road (FM 3040) to Justin Road (FM 407) to the Town Council.**

**BACKGROUND INFORMATION:** This item is to consider changes to the Master Transportation Plan, more specifically the Thoroughfare Plan regarding Morriss Road between Flower Mound Road (FM 3040) and Justin Road (FM 407). A copy of the existing Thoroughfare Plan is included as Attachment 1. Morriss Road as it is currently built resembles a Greenway Urban Arterial and is designated as a Major Arterial on the current Thoroughfare Plan. The history of Morriss Road begins as it first appeared on the Town's Thoroughfare Plan in 1981 as a major arterial. It has continued as a major arterial through various adoptions of the Thoroughfare Plan in 1985, 1994, 2000, 2004 and the most recent comprehensive master plan amendment in 2009. There have been many minor adjustments to the Thoroughfare Plan since 2009 as well.

During the 2009 Master Transportation Plan update, Morriss/Gerault was evaluated and the following were the anticipated traffic volumes for Morriss/Gerault for the 2030 Model volumes, vehicles per day, where the expected Level of Service (LOS) was beyond LOS C:

- Morriss – FM 3040 to FM 1171 – 29,000 – 34,000
- Gerault – FM 3040 to Spinks – 33,500 – 38,500
- Gerault – Spinks to FM 2499 – 40,000 – 47,000

The 2030 LOS map, LOS beyond C volumes and map showing the 2030 modeled volumes is included as Attachment 2. This attachment is an excerpt from the 2009 Master Transportation Plan.

At the February 5, 2018, Town Council meeting, the direction from the Council was for the Transportation Commission to study the need for Morriss from FM 3040 to FM 407 to be a Major Arterial street. The agenda packet and video from this meeting can be found at the following links:

- Agenda Item, http://www.flower-mound.com/ArchiveCenter/ViewFile/Item/4005
- Video, http://flowermoundtx.swagit.com/play/02052018-1085

Results of the Town Council meeting were unanimous that the Council was not interested in building Morriss Road to its current Thoroughfare Plan cross section (6 lane divided arterial). The Town Council voted to keep Morriss Road as a 4 lane divided roadway. Discussion amongst the Council was to change it to one of the 4 lane arterial cross sections and asked the Transportation Commission to study Morriss Road and to give their recommendation.

**ALTERNATIVES/OPTIONS:** Leave Morriss Road as is, change to a Greenway Urban Arterial or as one of the Urban Minor Arterials.

**FISCAL IMPACT:** N/A

**LEGAL REVIEW:** N/A

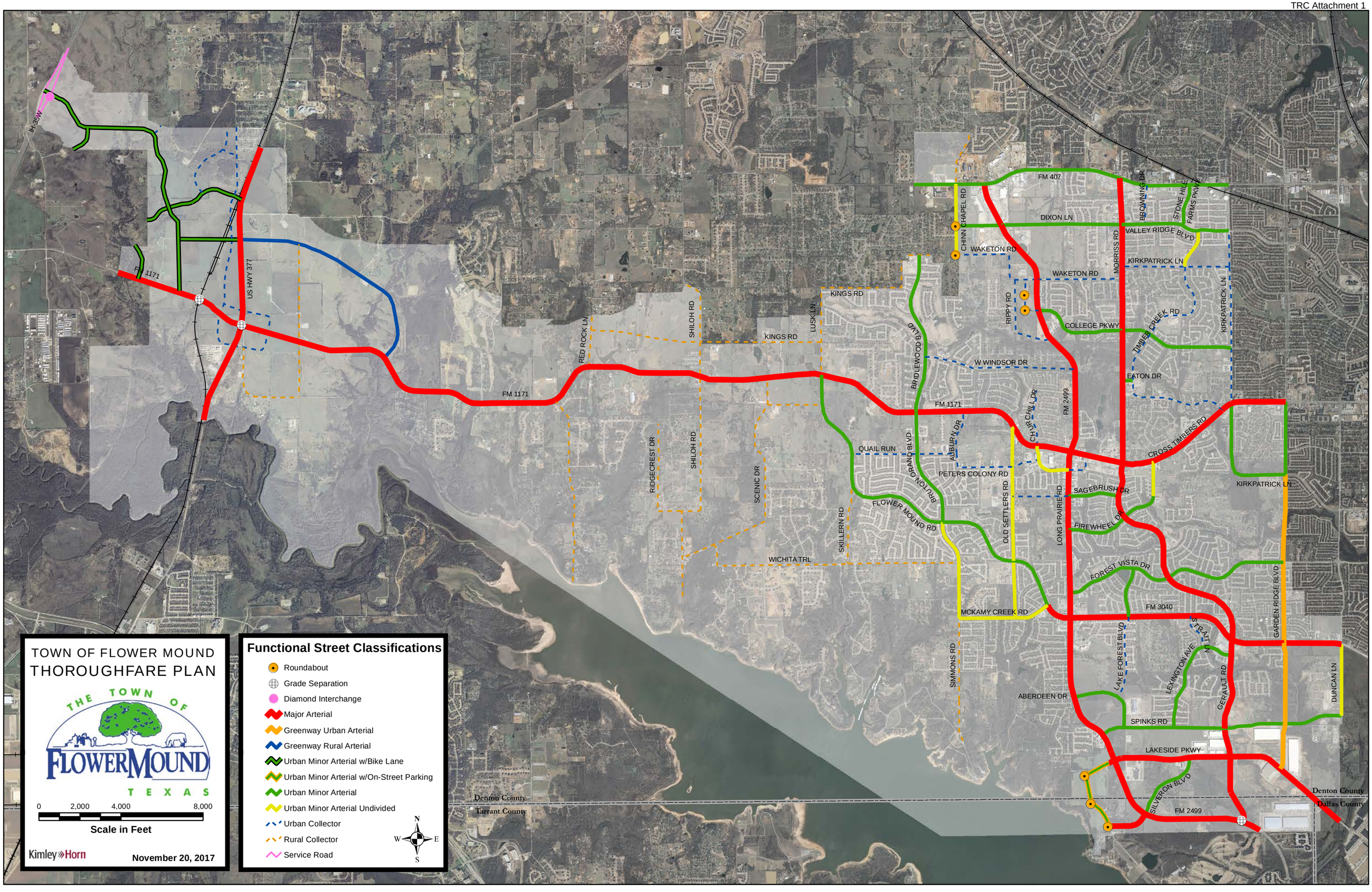
**ATTACHMENTS:**

1. Existing Thoroughfare Plan
2. Excerpt from the 2009 Master Transportation Plan

**DRAFT RECOMMENDATIONS:** Move to recommend that Morriss Road from Flower Mound Road (FM 3040) to Justin Road (FM 407) remain as currently shown on the Thoroughfare Plan to the Town Council.

Move to recommend that Morriss Road from Flower Mound Road (FM 3040) to Justin Road (FM 407) be changed to a Greenway Urban Arterial on the Thoroughfare Plan to the Town Council.

Move to recommend that Morriss Road from Flower Mound Road (FM 3040) to Justin Road (FM 407) be changed to an Urban Minor Arterial *(specify type)* on the Thoroughfare Plan to the Town Council.




TOWN OF FLOWER MOUND
THOROUGHFARE PLAN

THE TOWN OF FLOWER MOUND TEXAS

0 2,000 4,000 8,000

Scale in Feet

Kimley»Horn

November 20, 2017

## Functional Street Classifications

- Roundabout
- Grade Separation
- Diamond Interchange
- Major Arterial
- Greenway Urban Arterial
- Greenway Rural Arterial
- Urban Minor Arterial w/Bike Lane
- Urban Minor Arterial w/On-Street Parking
- Urban Minor Arterial
- Urban Minor Arterial Undivided
- Urban Collector
- Rural Collector
- Service Road

N W E S

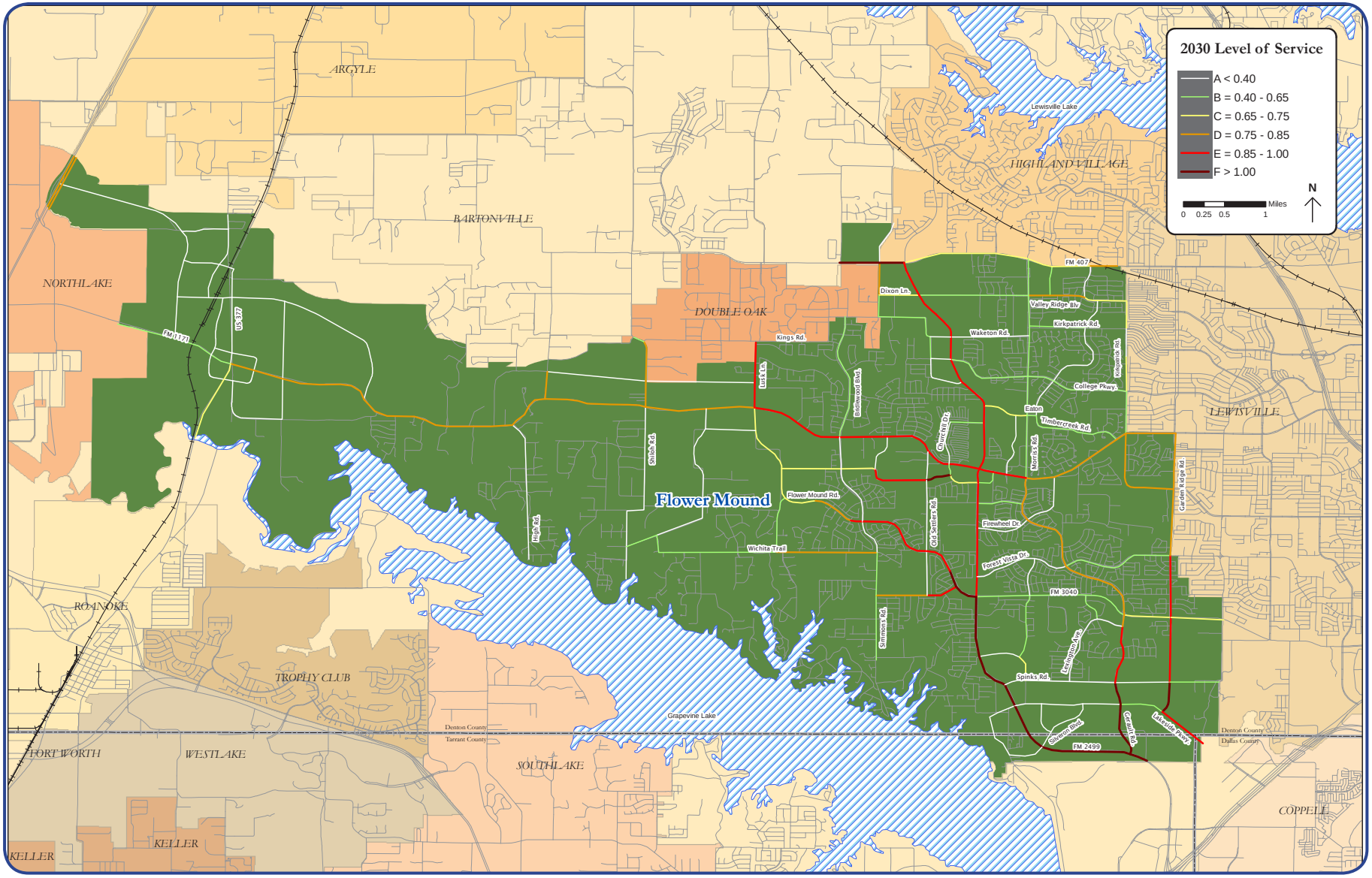




Figure 8 - 2030 Modeled Level-of-Service (LOS)


| Roadway | From | To | Modeled Volume | Lanes |
|---|---|---|---|---|
| Shiloh Rd. | FM 1171 | North Town Limits | 8,500 | 2 |
| Wichita Trail | Skillern Rd. | Simmons Rd. | 9,000 | 2 |
| McKamy Creek Rd. | Simmons Rd. | Old Settlers Rd. | 17,500 | 4 |
| Chinn Chapel | FM 407 | Dixon Ln. | 22,500 | 4 |
| Valley Ridge Blvd. | Morriss Rd. | Stonehill Farms Pkwy. | 23,000 | 4 |
| FM 407 | Stonehill Farms Pkwy. | East Town Limit | 23,500 | 4 |
| Garden Ridge Blvd. | FM 1171 | Forest Vista Dr. | 24,500 | 4 |
| Morriss Rd. | FM 3040 | FM 1171 | 29,000-34,000 | 6 |
| FM 1171 | Morriss Rd. | Garden Ridge Blvd. | 34,500-42,500 | 6 |
| FM 1171 | US 377 | Lusk Ln. | 48,000-55,000 | 6 |

Table 2: Roadway Segments With Modeled Level of Service D

| Roadway | From | To | Modeled Volume | Lanes |
|---|---|---|---|---|
| Lusk Ln. | FM 1171 | North Town Limits | 9,000 | 2 |
| Peters Colony Rd. | Bruton Orand Blvd. | Old Settlers Rd. | 9,500 | 2 |
| McKamy Creek Rd. | Old Settlers Rd. | Flower Mound Rd. | 25,000 | 4 |
| Garden Ridge Blvd. | Forest Vista Dr. | Spinks Rd. | 26,000 | 4 |
| Flower Mound Rd. | Bruton Orand Blvd. | McKamy Creek Rd. | 28,500 | 4 |
| Morriss Rd. | FM 3040 | Spinks Rd. | 33,500-38,500 | 6 |
| Lakeside Pkwy. | Garden Ridge Blvd. | East Town Limit | 42,000 | 6 |
| FM 2499 | FM 407 | FM 3040 | 38,000-44,000 | 6 |
| FM 1171 | Lusk Ln. | Morriss Rd. | 41,000-45,000 | 6 |

Table 3: Roadway Segments With Modeled Level of Service E

| Roadway | From | To | Modeled Volume | Lanes |
|---|---|---|---|---|
| Peters Colony Rd. | Old Settlers Rd. | Churchill Dr. | 16,000 | 2 |
| Gardern Ridge Rd. | Spinks Rd. | Lakeside Pkwy. | 29,000 | 4 |
| FM 407 | West Town Limit | FM 2499 | 33,000-38,000 | 4 |
| Gerualt Rd. | Spinks Rd. | FM 2499 | 40,000-47,000 | 6 |
| Flower Mound Rd. | McKamy Creek Rd. | FM 2499 | 56,000 | 6 |
| FM 2499 | FM 3040 | Gerualt Rd. | 51,000-66,500 | 6 |
| FM 2499 | Gerualt Rd. | South Town Limit | 95,000 | 6 |

Table 4: Roadway Segments With Modeled Level of Service F

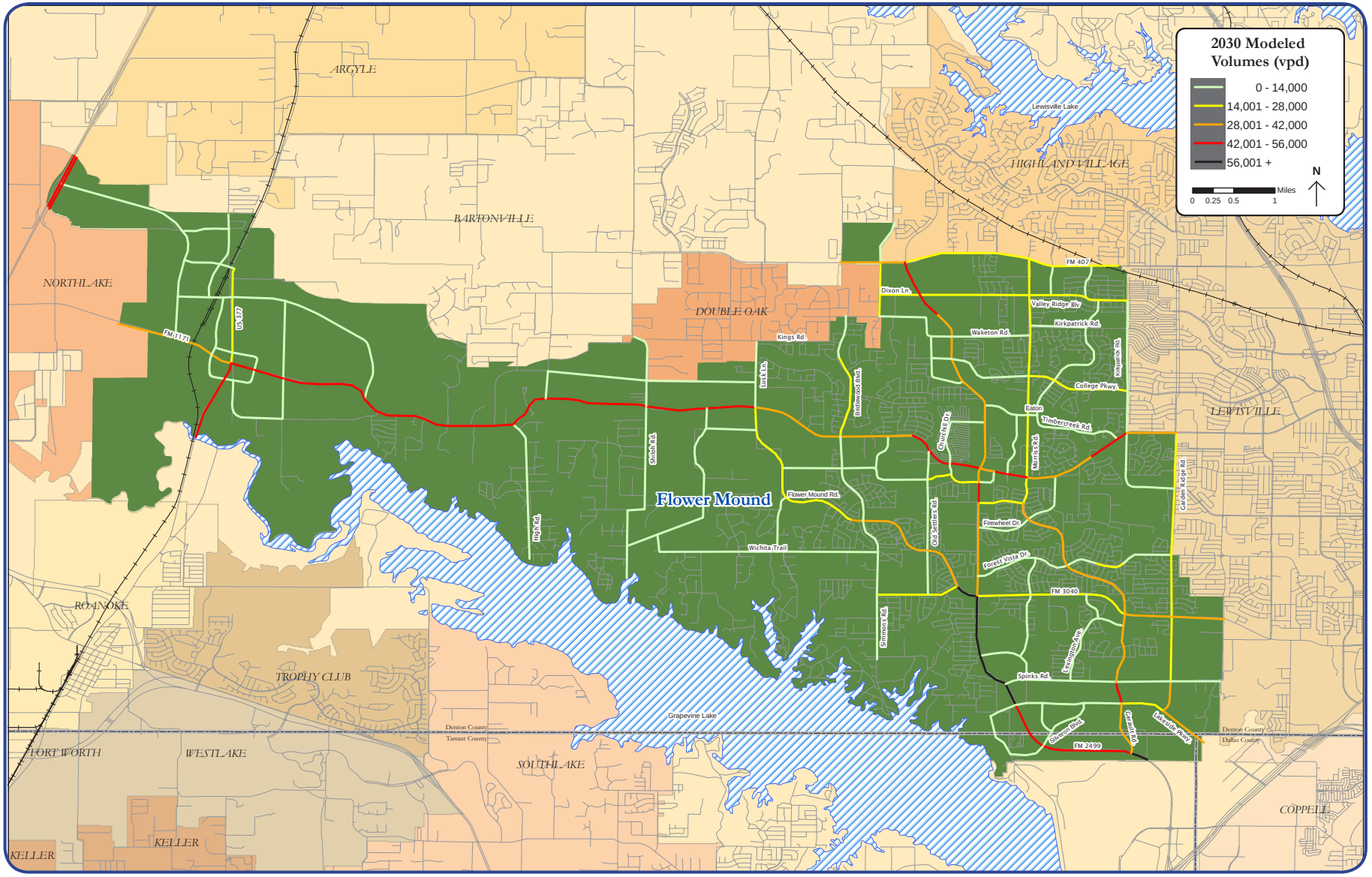




Figure 9 - 2030 Modeled Volumes

## TRANSPORTATION COMMISSION AGENDA ITEM NO. 4

## REGULAR ITEM

**DATE:** February 13, 2018

**FROM:** Matthew J. Hotelling, P.E., PTOE, Traffic Engineer

**ITEM:** **Consider a recommendation for a permanent speed limit reduction on Morriss Road between Flower Mound Road (FM 3040) to Cross Timbers Road (FM 1171) from 40 mph to 35 mph.**

**BACKGROUND INFORMATION:** This item is a regular item to allow the Transportation Commission the opportunity to provide input and recommendation to the Town Council regarding a speed limit reduction on Morriss Road between FM 3040 and FM 1171.

**ENGINEERING STUDY:** An engineering study to determine the speed limit of a local street consists of the following information:

- 85th percentile speed
- Road characteristics, shoulder condition, grade, alignment, and sight distance
- Pace speed
- Roadside development and environment
- Parking practices and pedestrian activity
- Reported crash experience for at least a 12-month period

The 85th percentile speed is the speed at which 85% of the traffic travels at or below. The speed limit for a particular street is generally set within +/- 5 mph of the 85th percentile speed. The 85th percentile speed for this section of Morriss Road will be provided at the meeting for both northbound and southbound at various locations along Morriss Road.

Staff has determined the road characteristics, shoulder condition, grade, alignment and sight distance for the streets along Morriss Road. The roadway in this section of Morriss is generally built with 11 foot wide lanes, arterial concrete street and is curvilinear. It does not have a shoulder, and generally has good sight distance. The Fuqua Drive intersection meets the minimum standards for visibility at the current speed limit but would be improved with a lower speed limit. No intersections within this section of Morriss Road are controlled by an all way stop condition. Including both Flower Mound Road (FM 3040) and Cross Timbers (FM 1171), 6 intersections are controlled by traffic signals. Two reduced speed school zones are located within this stretch of Morriss Road

The pace speed is the 10 mph range of speed which the largest majority of drivers are driving. The pace speed within the subject area will be provided at the meeting for both northbound and southbound at various locations along Morriss Road.

The roadside development for Morriss Road between Lake Bluff Drive and approximately 650 feet south of Cross Timbers Road (FM 1171) is primarily residential. Outside of these two limits, the roadside development changes to primarily commercial/institutional. The exception would be in the vicinity of Garden Road with the Forestwood Middle School and the adjacent commercial/institutional development on the west side of Morriss Road across from the school and the northwest corner of Morriss Road and Forest Vista with an institutional use.

Regarding parking practices and pedestrian activity, pedestrian activity for this area is primarily related to the residential homes and the school. Parking practices is off street parking and illegal to park within Morriss Road itself.

Research of reported crash experience for the past 12 months for just the area outside of the commercial areas, reveals that 22 reported accidents have occurred. Of those 22 accidents, 5 cause factors involving speed were reported. Accidents took place primarily at intersections. Other cause factors involved changing lanes when unsafe, disregarding stop and go signal, driver inattention/distraction/texting, failing to yield ROW, impaired visibility, faulty evasive action and driving under the influence of alcohol.

The natural break points for the speed limits along Morriss Road, if not consistent throughout the corridor, would be where the land use changes. If the speed limit is changed; staff recommends that the location of the reduced speed limit be from approximately 650 feet south of Cross Timbers Road (FM 1171) to Lake Bluff Drive.

**FISCAL IMPACT:** N/A

**LEGAL REVIEW:** N/A

**ATTACHMENTS:**

1. Vicinity Map of Morriss Road.

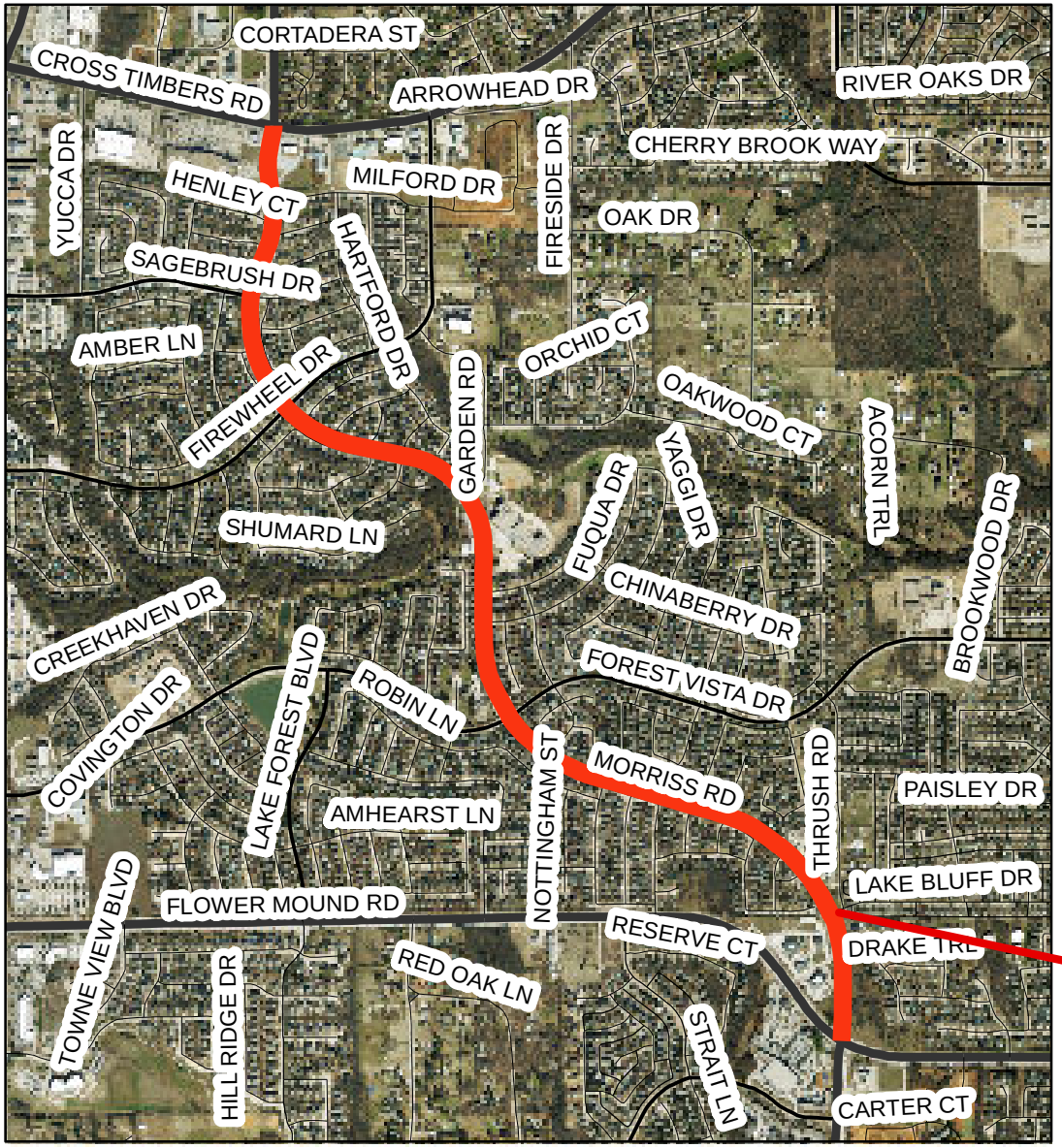
**DRAFT RECOMMENDATIONS:** Move to recommend approval of a permanent speed limit reduction on Morriss Road between Lake Bluff Drive and approximately 650 feet south of Cross Timbers Road (FM 1171) to the Town Council.

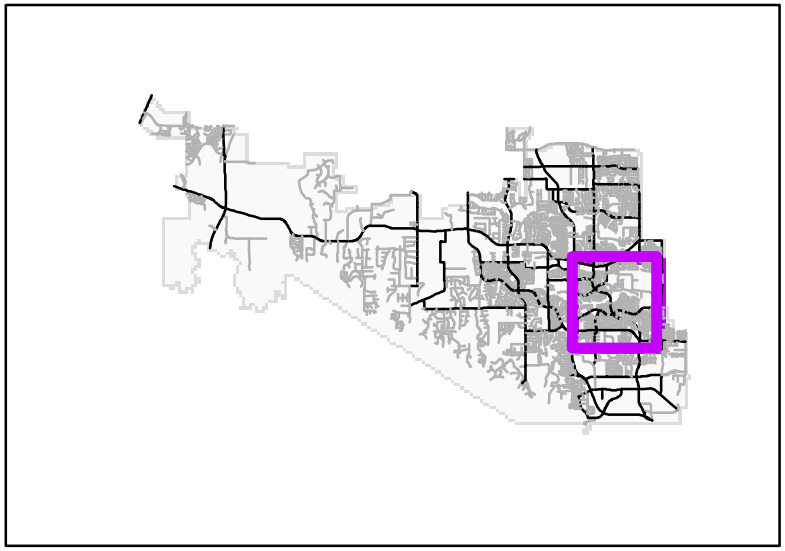
Move to recommend no speed limit change on Morriss Road between Lake Bluff Drive and approximately 650 feet south of Cross Timbers Road (FM 1171) to the Town Council.

# Vicinity Map - Morriss Rd

TRC Attachment 1

NORTH



Vicinity Map

**Legend**

MorrissRd

Project Location(s)