CITY OF FAIR OAKS RANCH

TRANSPORTATION SAFETY ADVISORY COMMITTEE (TSAC) SPECIAL MEETING

Wednesday, February 26, 2025 at 3:00 PM
Public Safety Training Room, Police Station, 7286 Dietz Elkhorn, Fair Oaks Ranch

AGENDA

OPEN MEETING

1. Roll Call - Declaration of a Quorum
2. Pledge of Allegiance

CITIZENS and GUEST FORUM

To address the Committee, please sign the Attendance Roster located on the table at the entrance in the foyer of the Public Safety Training Room. In accordance with the Open Meetings Act, the TSAC may not discuss or take action on any item which has not been posted on the agenda. Speakers shall limit their comments to five (5) minutes each.

3. Citizens to be heard

CONSENT AGENDA

All of the following items are considered to be routine by the Transportation Safety Advisory Committee, there will be no separate discussion on these items and will be enacted with one motion. Items may be removed by any Committee Member by making such request prior to a motion and vote

4. Approval of the February 5, 2025 Regular Transportation Safety Advisory Committee meeting minutes

Christina Picioccio, TRMC, City Secretary

CONSIDERATION/DISCUSSION ITEMS

5. Consideration and possible action on a request to reduce the speed limit on Dietz Elkhorn(west) to 30 mph

Geri Pieper, Resident

6. Consideration and possible action on adding a stop sign at the intersection of Battle Intense and High Eschelon

Richard Nichols, Resident

7. Consideration and possible action on adding a four-way stop sign at the intersection of Keeneland Drive, Venturer, and Battle Intense

Richard Nichols, Resident

8. Consideration and possible action on reducing the speed limit to 25 or 20 mph, adding speed bumps at the blind curve, and adding a three-way stop at the intersection of No Le Hace and Sumpter

Laura Maxwell, Resident

9. Consideration and possible action on closing Noble Lark at Dietz Elkhorn, creating a right turn from Noble Lark onto Dietz Elkhorn, designate walking lanes, or perform a street expansion

Marc Friberg and Brandi Bayer-Friberg, Residents

10. Consideration and possible action on implementing a no left turn onto Kalkallo from Fair Oaks Parkway from 7 – 9 a.m. Monday through Friday and no right-hand turn onto Noble Lark from Dietz Elkhorn from 2 – 4 p.m. Monday through Friday

Virginia Miller, Resident

ADJOURNMENT

Signature of Agenda Approval: *s/ Carole Vanzant*

Carole Vanzant, Assistant City Manager

I, Christina Picioccio, TRMC, City Secretary, certify that the above Notice of Meeting was posted on the outside bulletin board at the Fair Oaks Ranch City Hall, 7286 Dietz Elkhorn, Fair Oaks Ranch, Texas, and on the City's website www.fairoaksranchtx.org, both places being convenient and readily accessible to the general public at all times.

As per Texas Government Code 551.045, said Notice was posted by 6:30 PM, February 23, 2025 and remained so posted continuously for at least 72 hours before said meeting was convened. A quorum of various boards, committees, and commissions may attend the Transportation Safety Advisory Committee meeting.

The Fair Oaks Ranch Police Station is wheelchair accessible at the front main entrance of the building from the parking lot. Requests for special services must be received forty-eight (48) hours prior to the meeting time by calling the City Secretary's office at (210) 698-0900. Braille is not available.

CITY OF FAIR OAKS RANCH

TRANSPORTATION SAFETY ADVISORY COMMITTEE (TSAC)

Wednesday, February 5, 2025 at 3:00 PM
Public Safety Training Room, Police Station, 7286 Dietz Elkhorn, Fair Oaks Ranch

MINUTES

OPEN MEETING

1. **Roll Call - Declaration of a Quorum**

Present: Chairperson Al Schmidt

Committee Members: Shawn Balusek, Denise Fortenberry, John Wall, and Sharon Brimhall

Absent: Chris Doepke

With a quorum present, the meeting was called to order at 3:00 PM.

2. **Pledge of Allegiance –** The Pledge of Allegiance was recited in unison.

3. **Welcome Statement**

- Chairperson Schmidt welcomed those present and outlined his goal of having a collaborative meeting with those who submitted requests, staff and the committee within the open meetings act format.
- Assistant City Manager Carole Vanzant introduced the City Staff working on the team: Public Safety – Chief Smith, and Interim Lt. Alex Willis; Public Works – Assistant City Manager Carole Vanzant, Public Works Director Grant Watanabe, P.E. and Assistant Director of Public Works Stephen Fried; Maintenance Supervisor – Clint Koerperich, GIS Technician – Ernie Martinez, and City Secretary Department – Christina Picioccio and Amanda Valdez. Ms. Vanzant reviewed the internal process taken to prepare the submittals for the committee's review.

CITIZENS and GUEST FORUM

4. **Citizens to be heard**

Resident Tommie Wagner shared safety concerns regarding bikers, golf carts, and pedestrians at the Hansel/Battle Intense intersection. She reminded the committee that this is neighborhood street not a speedway and requested a stop sign or other solutions to reduce the amount of traffic in this area be considered. As this item will not be heard at this meeting, Ms. Wagner agreed to return when this item will be heard again.

Resident Gary _____ echoed Tommie Wagner's concerns and agreed to return when this item will be heard again.

Front Gate resident Joseph Baumberger supported a designated left turn lane from IH-10 to Front Gate stating safety concerns due to traffic and vehicle speeds.

CONSENT AGENDA

5. **Approval of the November 15, 2024 regular Transportation Safety Advisory Committee meeting minutes**

Committee Member Shawn Balusek noted a correction needing to be made to the minutes regarding item #6 - Consideration and possible action to schedule regular quarterly meeting dates and times. The corrected vote was 4 – 1; Motion Passed –Committee Member Shawn Balusek opposed.

MOTION: Made by Committee Member John Wall, seconded by Committee Member Shawn Balusek, to approve the consent agenda as amended.

VOTE: 5 - 0, Motion Passed

REPORTS FROM STAFF/COMMITTEES

6. **Request for improved paving work on Ralph Fair Road at the intersections of Ammann Road and at Meadow Creek Trail**

Public Works Director Grant Watanabe P.E. reported that the request for improved paving work on Ralph Fair Road at the intersections of Ammann Road and Meadow Creek Trail are outside of the City's jurisdiction. Staff will forward requests to TxDOT for their consideration.

7. **Request to address crosswalk issues at the intersection of Dietz Elkhorn Road and Square Gate**

Maintenance Supervisor Clint Koerperich noted that road improvements are in progress for this intersection. Previous crosswalk markings required repainting with a retro-reflective additive for optimal effect. Crosswalk ahead signs and a LED flashing stop sign have been installed. Additionally, fog seal of the road will be performed prior to thermoplastic reflective paint, which is currently being quoted. It is staff's opinion that the stop sign ahead is adequate to slow traffic down prior to reaching the cross walk.

CONSIDERATION/DISCUSSION ITEMS

8. **Consideration and possible action on proposed amendments to the Fair Oaks Ranch Transportation Safety Advisory Committee Rules of Procedures**

The Committee reviewed an updated draft of the rules reflecting the recommendations made by the Committee at the November 15, 2025 TSAC meeting. The Committee approved advancing the proposed amendments to City Council with the following additional amendments.

MOTION: Made by Committee Member John Wall, seconded by Committee Member Denise Fortenberry to add a reference to the Texas Transportation Code Section 745 to Article 5 of the draft and Article 7.2 that the word "not" be deleted, and to change the word "is to "are" in Section 5.1.

VOTE: 5 – 0, Motion Passed

9. **Consideration and possible action on a request for placement of two radar feedback signs on Dietz Elkhorn (west)**

MOTION: Made by Chairperson Al Schmidt, seconded by Committee Member Sharon Brimhall to recommend advising the City to place the budgeted radar signs on Dietz Elkhorn West and to consider extra signage between Old Fredericksburg Road and the law firm area.

VOTE: 5 - 0, Motion Passed

10. **Consideration and possible action on a request to reduce the speed limit on Dietz Elkhorn (west) to 30 mph**

MOTION: Made by Committee Member Sharon Brimhall to recommend amending the speed limit on Dietz Elkhorn from Old Fredericksburg Road and the Parkway to 30mph – No Second

MOTION: Made by Committee Member John Wall, seconded by Committee Member Shawn Balusek to recommend a to City Council that the speed limit remain the same, at 35 mph.

VOTE: 2 - 3, Motion Failed; Chairperson Al Schmidt, Denise Fortenberry, and Sharon Brimhall opposed.

MOTION: Made by Chairperson Al Schmidt to recommend revising the speed limit from Old Fredericksburg Road to Van Raub Elementary School to 30 mph, leaving from the school back to the parkway at 35 mph – No Second

MOTION: Made by Committee Member John Wall, seconded by Committee Member Denise Fortenberry to recommend the Committee postpone the item and request the Police Chief to bring existing data concerning the number of citations and speed.

VOTE: 4 - 1, Motion Passed**;** – Committee Member Shawn Balusek opposed.

The following three consideration items were considered as one:

11. **Consideration and possible action on traffic and pedestrian improvements at the intersection of Fair Oaks Parkway and Front Gate (westbound traffic)**

12. **Consideration and possible action on the Fair Oaks Parkway median at Front Gate**

13. **Consideration and possible action on traffic and pedestrian improvements at the intersection of Fair Oaks Parkway and Front Gate (eastbound traffic)**

MOTION: Made by Committee Member Denise Fortenberry, seconded by Committee Member Sharon Brimhall to recommend adding a double yellow line and reflectors in/around the median, placing intersection warning signs, moving the stop sign forward at the Front Gate Subdivision and to ask the City Council to consider performing a traffic study.

VOTE: 5 - 0; Motion Passed.

14. **Consideration and possible action on adding a stop sign at the intersection of Battle Intense and High Eschelon**

15. **Consideration and possible action on adding a four-way stop sign at the intersection of Keeneland Drive, Venturer, and Battle Intense**

MOTION: Made by Committee Member John Wall, seconded by Committee Member Sharon Brimhall to defer Consideration Items 14 and 15 to a future meeting.

VOTE: 5 - 0; Motion Passed.

Resident Theresa Matlock, the submitter of Report Item #7, requested to hear comments from Public Safety regarding a school crossing guard at Van Raub Elementary School. Chief Smith stated that BISD has posted a job opening for a crossing guard position at Dietz Elkhorn/Chartwell. Once filled, this will enable a city officer to staff the crosswalk at Van Raub Elementary School. The situation will be continually monitored to assess whether an intermittent or full-time visible presence is needed or if improved signage will suffice.

16. **Consideration and possible action to schedule a special meeting**

MOTION: Made by Chairperson Al Schmidt, seconded by Committee Member John Wall to schedule a special meeting for February 26, 2025.

VOTE: 5 - 0; Motion Passed.

ADJOURNMENT

Chairperson Schmidt adjourned the meeting at 5:01 PM.

ATTEST:

Al Schmidt, Chairperson

Christina Picioccio, TRMC,
City Secretary

TRANSPORTATION SAFETY ADVISORY COMMITTEE CONSIDERATION ITEM

CITY OF FAIR OAKS RANCH, TEXAS

AGENDA TOPIC:	Consideration and possible action on a request to reduce the speed limit on Dietz Elkhorn(west) to 30 mph
DATE:	February 27, 2025
REQUESTER	Geri Pieper, Resident

This consideration item was postponed at the February 5, 2025 Committee meeting

REQUEST

Location/Situation for Review and Description of Concerns

This request is for lowering the speed limit on Dietz Elkhorn west to 30 mph, between Fair Oaks Parkway and Old Fredericksburg Road, making this portion consistent with the speed limit on Dietz Elkhorn east.

With the reduction in the speed limit, our hope is to keep drivers traveling at a safer speed to protect themselves as well as the wildlife in this area. It would also assist those of us on this stretch of road when exiting our property during peak hours. s provided by submittal

Desired Outcome/Resolution

Lower the speed limit to reduce speeds.

STAFF REPORT

Public Works Comments

Dietz Elkhorn (west) was reduced to 35 mph to allow for golf carts. Note that once Dietz Elkhorn (east) is reconstructed with wider shoulders to accommodate pedestrians, bicyclists, and space for golf carts to pull over and let vehicles pass, the City Council may consider raising the Dietz Elkhorn (east) speed limit to 35 mph to match Dietz Elkhorn (west). **The City Council has had no discussion on this option.**

Public Safety Comments

This road is one of the heaviest patrolled and speed enforced in the City. There have been no reported collisions because of excessive speed.

COMMITTEE ACTION/RECOMMENDATION

February 5, 2025

At the podium, Ms. Pieper stated consistency on Dietz Elkhorn Road would be appreciated. Members discussed:

1. State speed limit requirements for golf carts.
2. State recommends speed limits be set at the 85% percentile (speed study in FY2020/21, the 85% percentile was reported to be 37-38 mph).
3. Police confirmed no accidents reported due to excessive speed. Acceleration of the downhill driving was monitored to be roughly 41-42 mph.
4. The curve on Dietz Elkhorn before Van Raub Elementary School.
5. Having speed limit consistency on Dietz Elkhorn.
6. Requesting police staff to provide speed limit and vehicle number data at a future meeting.

Recommend amending the speed limit on Dietz Elkhorn from Old Fredericksburg Road and the Parkway to 30 mph. (No second)

Recommend to City Council the speed limit remain the same at 35 mph. (Failed; 2-3)

Recommend revising the speed limit from Old Fredericksburg Road and Van Raub Elementary School to 30 mph. (No second)

Recommend the Committee postpone the item and request the Police Chief to bring existing data concerning the number of citations and speed. (Passed; 4-1)

February 6, 2025

Follow up email (Exhibit A attached) sent by Ms. Pieper received by staff amending the location placement of the radar feedback devices. Chairperson Schmidt requested inclusion in this agenda.

February 26, 2025

The requested data is attached as Exhibit B.

I move to recommend ….

EXHIBIT A

From: geri pieper
Sent: Thursday, February 6, 2025 2:51 PM
Subject: Amendment to Tabled Agenda Topic Item 2 “Consideration and possible action on a request to reduce the speed limit on Dietz Elkhorn (west) to 30mph"

With the above agenda item being tabled, I would like to provide clarification and additional information for the Committee's consideration when this item is brought up at the next meeting.

It appeared my initial request to reduce the speed on Dietz Elkhorn Road from Old Fredericksburg Road to Fair Oaks Parkway was too cumbersome or vague. *Accordingly, I amend the request for lowering the speed limit on Dietz Elkhorn west to 30 mph, between the 4-way stop at Old Fredericksburg Road and the 4-way stop at Square Gate*. This stretch of road is only 7/10th of one mile.

Currently, along this 7/10th of a mile, there are two yellow caution signs suggesting 30 mph for an upcoming curve. There are 18 points of ingress/egress. Additionally, new apartments are scheduled to begin construction this summer which will add one or two points of ingress/egress directly across the road from my next door neighbors’ home. There is also the Spring Creek United Methodist Church where the City and HOAs hold meetings, the soccer field with lights for night use, the Vantage apartments, and the “back gate” to Front Gate.

Just past the 4-way stop at Square Gate/Dietz Elkhorn west is Van Raub Elementary School. And just past the 4-way stop at Old Fred Road/Dietz Elkhorn west is the newly built H-E-B which I’m sure a high percentage of Fair Oaks Ranch residents have visited by way of Dietz Elkhorn Road. This road is shared not only with daily (twice, thrice, etc.) passenger vehicles, but also with large commercial vehicles, golf carts, cyclists, runners and walkers, and Wildlife. I would like to see all these users live in harmony with each other and protect the does and their fawns which will be born beginning April, and all wildlife.

As a comparison and for your information, the default speed limit in San Antonio is 30mph. District 7 council member Marina Alderete Gavito released a council consideration request Jan. 29, 2025, to reduce the default speed limit from 30 mph to 25 mph, especially in neighborhoods within a quarter-mile radius of schools, community centers, and parks.

We all know this is a highly trafficked area. It is common sense not to wait for an accident to happen. It is also common sense to be proactive, not reactive. I trust in this Committee’s common sense in their understanding 30mph is not unreasonable. Slower traffic saves lives. Thank you for your consideration.

If you have any questions, please contact me at your convenience.

Kind regards, Geri Pieper

Exhibit B

Traffic Stops

Aug 1, 2024 - Feb, 6 2025

8000-9200 Blk Dietz Elkhorn Rd

Speeding (In School Zone)

Total Stops: 19

Citations: 9

Warnings: 10

Speeding (Outside School Zone)

Total Stops: 121

Citations: 22

Warnings: 99

TRANSPORTATION SAFETY ADVISORY COMMITTEE CONSIDERATION ITEM

CITY OF FAIR OAKS RANCH, TEXAS

AGENDA TOPIC:	Consideration and possible action on adding a stop sign at the intersection of Battle Intense and High Eschelon
DATE:	February 26, 2025
REQUESTER	Richard Nichols, Resident

The consideration item was postponed at the February 5, 2025 Committee meeting

REQUEST

Location/Situation for Review and Description of Concerns

At the intersection of Battle Intense and High Eschelon, add a stop sign to make this a four-way stop.

Desired Outcome/Resolution

1. Add a stop sign.
2. Remove sight obstacles on Battle Intense.

STAFF REPORT

Public Works Comments

At the City Council February 1, 2024 City Council workshop, staff led a workshop on the City's General Engineering Consultant's Intersection analysis for Battle Intense, Hansel Drive, and High Eschelon. A presentation of the analysis is attached.

The analysis shows a fourth stop sign is not warranted based on observed left-turn conflicts, observed pedestrian activity, cross-street operating characteristics, or traffic volumes. Special considerations included the following.

1. Non-Aligned Streets
2. Sight distance limitations
3. 3-way stop condition
4. Driver expectation
5. Pedestrian movements
6. Grades of approaches

The analysis also provided the following proposed mitigation measures.

1. Install a stop sign on westbound approach
2. Enhance existing pavement markings
3. Install stop bars on SB and WB approaches
4. Trim existing vegetation

After the presentation, the City Council provided staff direction to proceed with the proposed mitigation measures.

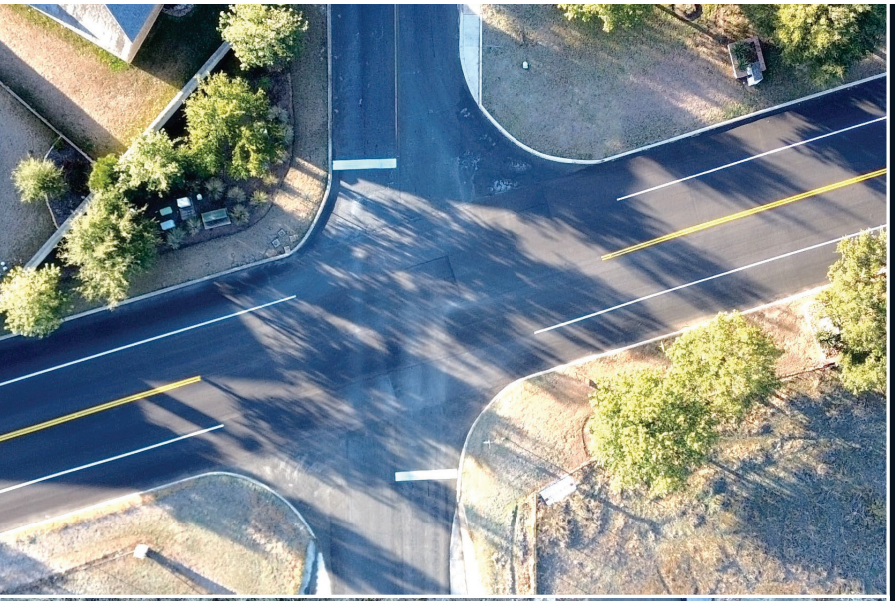
At the June 6, 2024 City Council meeting, the stop sign was not approved on the second reading of an ordinance updating stop signs in in the City. Staff has completed the remaining mitigation measures - trimmed existing vegetation, enhanced the pavement markings, and installed stop bars on the southbound and westbound approaches.

Public Safety Comments

While the sign is not warranted, the special considerations detailed in the analysis still exist.

COMMITTEE ACTION/RECOMMENDATION

I move to recommend



Intersection Analysis

Battle Intense at Hansel Dr/High Eschelon

Grant Watanabe, P.E.

Director of Public Works & Engineering Services

BACKGROUND

October 2019

Mr. Nichols requested additional stop controls at the subject intersections on October 3rd

February 2020

Study results were presented to the City Council on February 6th. The intersections did not meet warrants for all-way stop controls. Recommendations included pavement marking revisions and a restudy in spring. The restudy did not occur due to COVID 19.

December 2023

Mr. Nichols restated his request for additional stop controls on December 7th

February 2024

Intersections were restudied and results are presented to Council on February 1st

BACKGROUND

TMUTCD (2B.07) Multi-Way Stop Control:

- Can be used as a safety measure at intersections if certain traffic conditions exist.
- Should be used where traffic volumes on the intersecting roads is approximately equal.
- Shall be based on a traffic engineering study for justification.

BACKGROUND

TMUTCD (2B.07) Multi-Way Stop Warrants:

A. As an interim measure where traffic control signals are justified.

B. Where five or more reported crashes in a 12-month period might have been preventable with a multi-way stop installation.

C. Where minimum traffic volumes are met as follows:

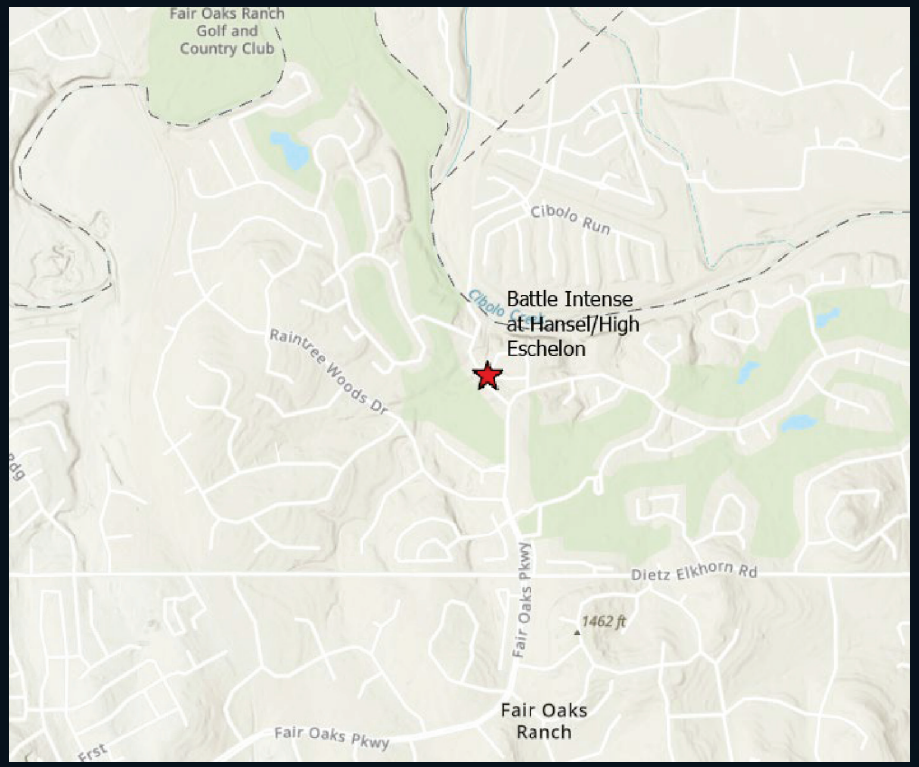
   1. Major street approaches average at least 300 vehicles per hour for any 8 hours of an average day; and

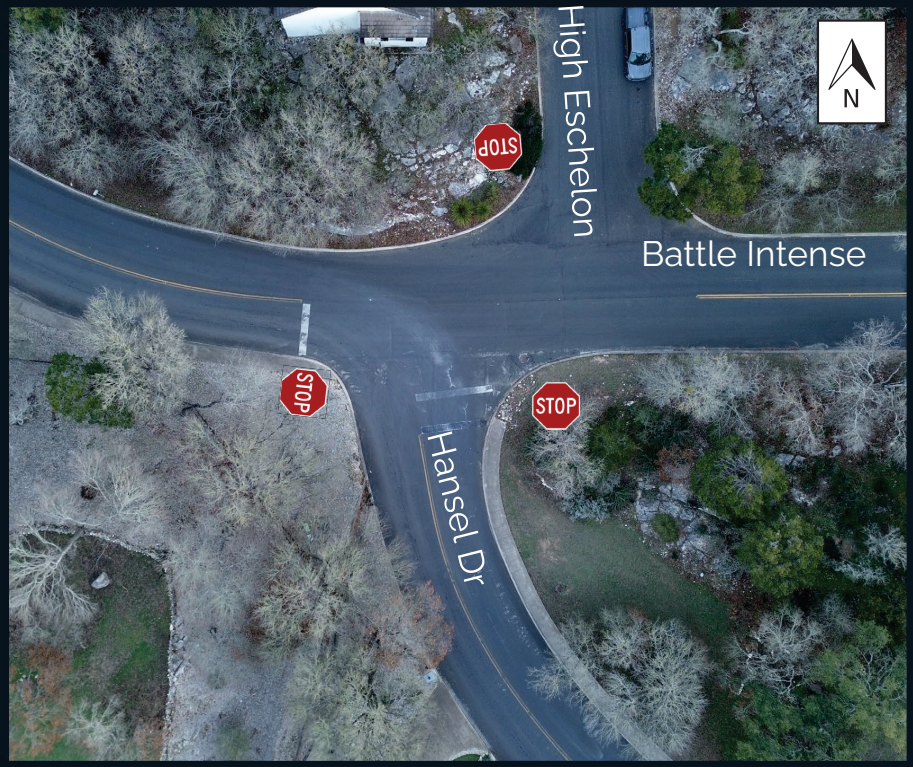
   2. Minor street approaches (total of both approaches) average at least 200 units per hour for the same 8 hours, with an average delay to minor-street vehicular traffic of at least 30 seconds per vehicle during the highest hour; but

   3. If the 85th-percentile approach speed of the major-street traffic exceeds 40 mph, the minimum vehicular volume warrants are 70 percent of the values provided in Items 1 and 2.

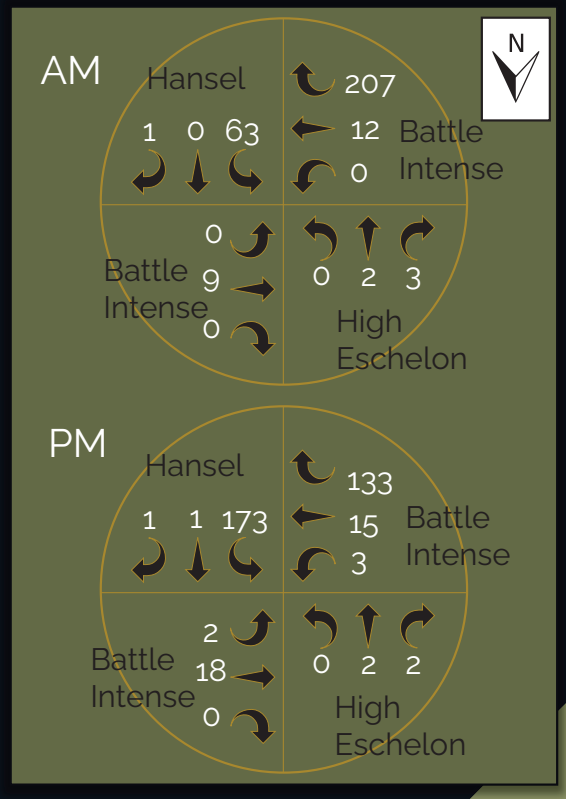
D. Where no single criterion is satisfied, but where Criteria B, C.1, and C.2 are all satisfied to 80 percent of the minimum values.

Battle Intense & Hansel/High Eschelon





Battle Intense & Hansel/High Eschelon



Battle Intense & Hansel/High Eschelon

Results of All-Way-Stop Warrant Analysis

A. Does Not Meet Warrant A
   - Traffic signal not warranted so cannot be an interim measure

B. Does Not Meet Warrant B
   - Only 1 non-intersection crash reported (2017)

C. Does Not Meet Warrant C
   - Traffic volumes are very low

D. Does Not Meet Warrant D
   - Full reduction factors were considered

Battle Intense & Hansel/High Eschelon

Special Considerations

- ✓ Non-Aligned Streets
- ✓ Sight Distance Limitations (City has trimmed back vegetation)
- ✓ 3-Way Stop Condition
- ✓ Driver Expectation
- ✓ Pedestrian Movements
- ✓ Grades of Approaches

Battle Intense & Hansel/High Eschelon

Traffic Engineering Study Results

- Does not warrant based on observed left-turn conflicts
- Does not warrant based on observed pedestrian activity
- Does not warrant based on comparison of cross-street operating characteristics
- Does not warrant based on traffic volumes
- Does warrant based on limited sight distance

Battle Intense & Hansel/High Eschelon

Proposed Mitigation Measures

- Install Stop Sign on Westbound Approach
- Enhance Existing Pavement Markings and Install Stop Bars on SB and WB Approaches
- Continue to Trim Existing Vegetation to Improve Visibility

TRANSPORTATION SAFETY ADVISORY COMMITTEE CONSIDERATION ITEM

CITY OF FAIR OAKS RANCH, TEXAS

AGENDA TOPIC:	Consideration and possible action on adding a four-way stop sign at the intersection of Keeneland Drive, Venturer, and Battle Intense
DATE:	February 26, 2025
REQUESTER	Richard Nichols, Resident

This consideration item was postponed at the February 5, 2025 Committee meeting.

REQUEST

Location/Situation for Review and Description of Concerns

Intersection of Keeneland Drive, Venturer, and Battle Intense. Motorists on either Venturer or Battle Intense need to pull part way into the intersection with Keeneland Drive to get a clear picture of oncoming traffic.

Desired Outcome/Resolution

Make this a four-way stop.

STAFF REPORT

Public Works Comments

At the City Council February 1, 2024 City Council meeting, staff led a workshop on the City's General Engineering Consultant's Intersection Analysis on the Battle Intense, Venturer, and Keeneland Drive. A presentation of the analysis is attached.

The analysis shows a four-way stop is not warranted based on observed left-turn conflicts, observed non-pedestrian activity, approach sight distances, comparison of cross-street operating characteristics, or alignment of cross streets. Special considerations include the following.

1. Wider street (Keeneland)
2. Higher speeds (Keeneland)
3. Sight distance limitations
4. Pedestrian movements (including school bus drop-off at intersection)
5. Unchannelized left turns

Installing radar feedback devices on Keeneland to reduce speeding was proposed as a mitigation method in the analysis.

After the presentation, the City Council opted not to install a four-way stop and directed staff to place a stop bar closer to the intersection.

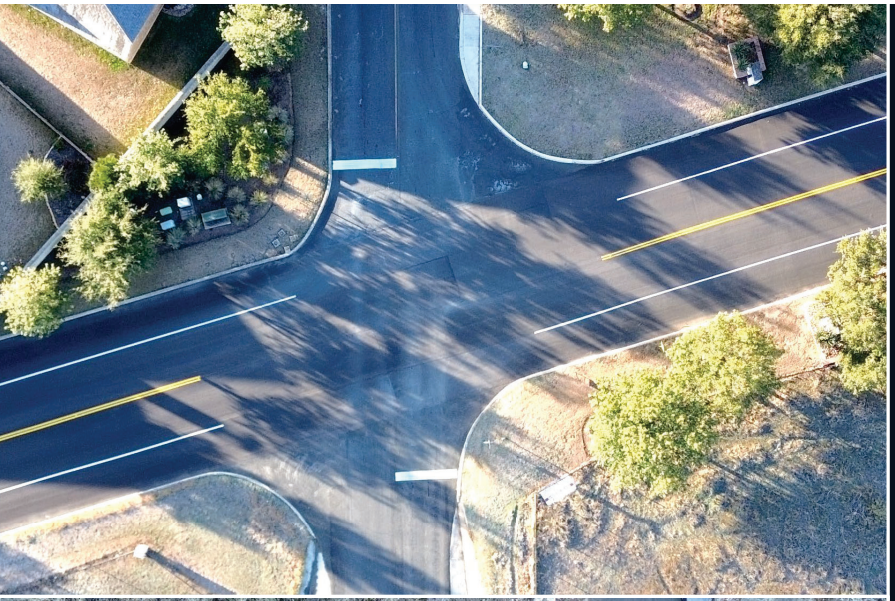
The repainting of the stop bar on Battle Intense has been completed. A radar feedback sign has been budgeted in this fiscal year. This intersection will be considered, along with other streets including Meadow Creek Trail, Dietz Elkhorn West, etc. for placement of the device.

Public Safety Comments

There have been no reported collisions at this intersection.

COMMITTEE ACTION/RECOMMENDATION

I move to recommend …….



Intersection Analysis

Battle Intense at Venturer Ln/Keeneland Dr

Grant Watanabe, P.E.

Director of Public Works & Engineering Services

BACKGROUND

October 2019

Mr. Nichols requested additional stop controls at the subject intersections on October 3rd

February 2020

Study results were presented to the City Council on February 6th. The intersections did not meet warrants for all-way stop controls. Recommendations included pavement marking revisions and a restudy in spring. The restudy did not occur due to COVID 19.

December 2023

Mr. Nichols restated his request for additional stop controls on December 7th

February 2024

Intersections were restudied and results are presented to Council on February 1st

BACKGROUND

TMUTCD (2B.07) Multi-Way Stop Control:

- Can be used as a safety measure at intersections if certain traffic conditions exist.
- Should be used where traffic volumes on the intersecting roads is approximately equal.
- Shall be based on a traffic engineering study for justification.

BACKGROUND

TMUTCD (2B.07) Multi-Way Stop Warrants:

A. As an interim measure where traffic control signals are justified.

B. Where five or more reported crashes in a 12-month period might have been preventable with a multi-way stop installation.

C. Where minimum traffic volumes are met as follows:

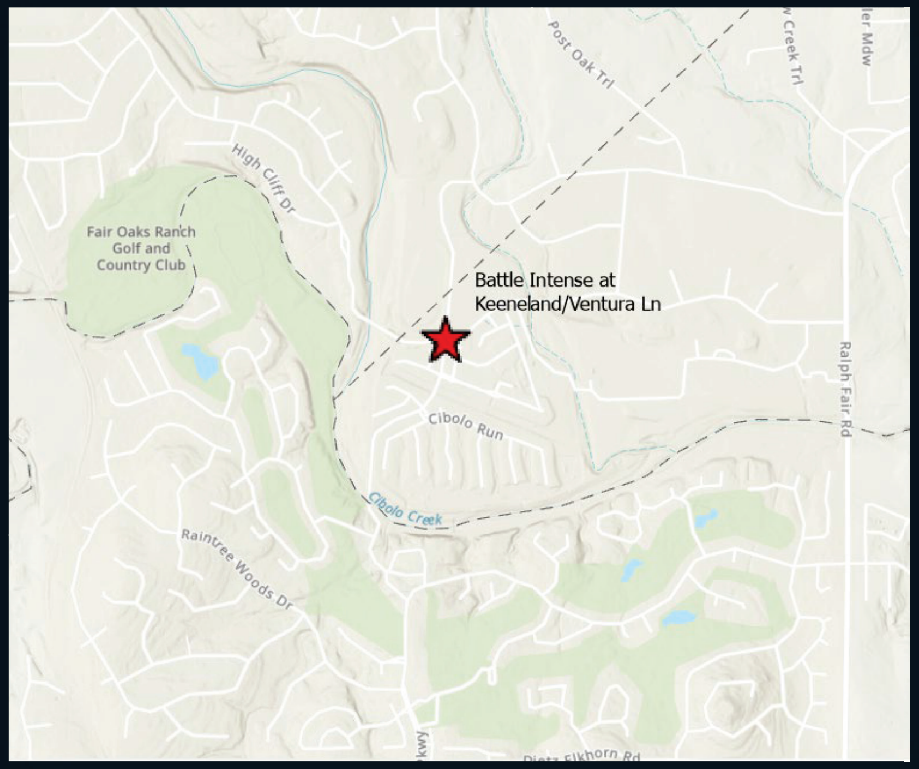
   1. Major street approaches average at least 300 vehicles per hour for any 8 hours of an average day; and

   2. Minor street approaches (total of both approaches) average at least 200 units per hour for the same 8 hours, with an average delay to minor-street vehicular traffic of at least 30 seconds per vehicle during the highest hour; but

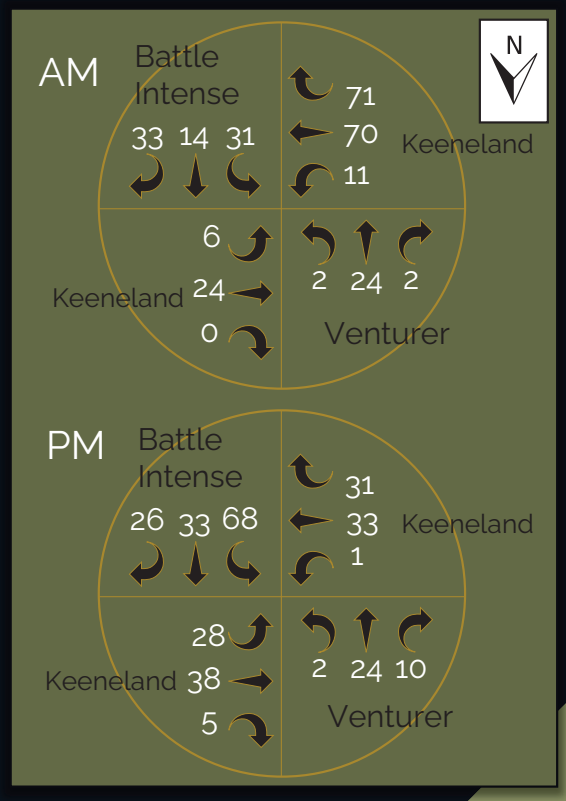
   3. If the 85th-percentile approach speed of the major-street traffic exceeds 40 mph, the minimum vehicular volume warrants are 70 percent of the values provided in Items 1 and 2.

D. Where no single criterion is satisfied, but where Criteria B, C.1, and C.2 are all satisfied to 80 percent of the minimum values.

Battle Intense & Keeneland/Venturer



Battle Intense & Keeneland/Venturer Lane



Battle Intense & Keeneland/Venturer Lane

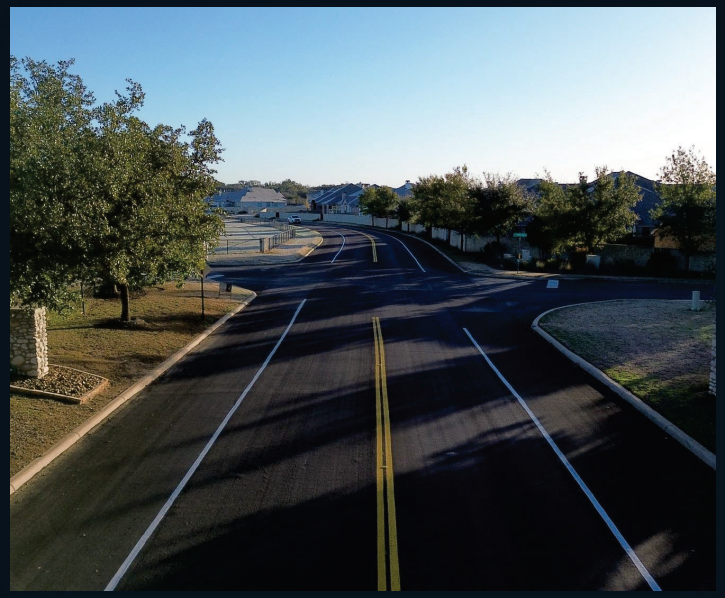
Results of All-Way-Stop Warrant Analysis

A. Does Not Meet Warrant A
   - Traffic signal not warranted so cannot be an interim measure

B. Does Not Meet Warrant B
   - Only 2 intersection-related crashes reported (2023)

C. Does Not Meet Warrant C
   - Traffic volumes are very low

D. Does Not Meet Warrant D
   - Full reduction factors were considered



Battle Intense & Keeneland/Venturer Lane

Special Considerations

- ✓ Wider Street (Keeneland)
- ✓ Higher Speeds (Keeneland)
- ✓ Sight Distance Limitations
- ✓ Pedestrian Movements (Including School Bus Drop-Off at Intersection)
- ✓ Unchannelized Left Turns

Battle Intense & Keeneland/Venturer Lane

Traffic Engineering Study Results

- Does not warrant based on observed left-turn conflicts
- Does not warrant based on observed pedestrian activity
- Does not warrant based on approach sight distances
- Does not warrant based on comparison of cross-street operating characteristics
- Does not warrant based on alignment of cross streets

Battle Intense & Keeneland/Venturer Lane

Proposed Mitigation Measures

- Continue to trim existing vegetation to improve visibility
- Install radar feedback devices on Keeneland to reduce speeding (similar to Battle Intense)

TRANSPORTATION SAFETY ADVISORY COMMITTEE CONSIDERATION ITEM

CITY OF FAIR OAKS RANCH, TEXAS

AGENDA TOPIC: Consideration and possible action on reducing the speed limit to 25 or 20 mph, adding speed bumps at the blind curve, and creating a three-way stop at the intersection of No Le Hace and Sumpter.

DATE: February 26, 2025

REQUESTER Laura Maxwell, Resident

REQUEST

Location/Situation for Review and Description of Concerns

Our home is located right in the middle of No Le Hace Dr. My husband and I routinely witness vehicles traveling way too fast down the road, which is made especially dangerous by several blind curves. I'm an avid runner and travel the road on foot often. It's becoming very common to have to jump up on the curb because someone is driving too fast and not paying attention on such a windy road.

30 mph is, in my opinion, a very unsafe speed limit on that road. You must assume that people will routinely exceed the speed limit (and they do) which means we have people traveling 35 mph down a road that serves many young families with children, as well as elderly neighbors.

This stretch serves as a cut through (especially during the early morning and afternoon hours) for people trying to get from Fair Oaks Parkway to Dietz Elkhorn (and vice versa).

Desired Outcome/Resolution

I'd like someone to drive the road at the posted speed limit and consider factors like children, pedestrians, etc. I feel most experienced and cautious drivers would agree the current limit is much too high and threatens safety of our residents. A few options:

1. Reduce the speed limit to 20 or 25 mph.
2. Install speed bumps at the blind curve areas.
3. Install additional two stop signs at the intersection of No Le Hace and Sumpter, making it a 3-way stop.

This is very similar to the issues on Noble Lark, and their speed limit was reduced to 20 mph. It doesn't make sense for our road to have the same speed limit as a thoroughfare like Dietz Elkhorn.

STAFF REPORT

Public Works Comments

If the Committee desires to pursue the request, a traffic study would be needed to justify this request and be authorized by the City Council.

Public Safety Comments

There have been no reported collisions because of excessive speed. We will continue to monitor and enforce the speed limit.

The Texas Transportation Code states a municipality may declare a lower speed limit of not less than 25 miles per hour, if the governing body determines that the prima facie speed limit on the highway is unreasonable or unsafe. This can be found in Texas Transportation Code Sec 545.356. https://statutes.capitol.texas.gov/docs/tn/htm/tn.545.htm.

COMMITTEE ACTION/RECOMMENDATION

I move to recommend …

TRANSPORTATION SAFETY ADVISORY COMMITTEE CONSIDERATION ITEM

CITY OF FAIR OAKS RANCH, TEXAS

AGENDA TOPIC: Consideration and possible action on closing Noble Lark at Dietz Elkhorn, creating a right turn from Noble Lark onto Dietz Elkhorn, designate walking lanes, or perform a street expansion

DATE: February 26, 2025

REQUESTER Marc Friberg and Brandi Bayer-Friberg, Residents

REQUEST

Location/Situation for Review and Description of Concerns

Noble Lark Drive and Kalkallo has an increase in road traffic due to use of residential road as a pass through from collector / main city thoroughfares. We have been utilizing an electronic traffic counter acquired from Telraam Citizen Data to collect data related to increase in traffic flow on our streets since the city re-opened Noble Lark Drive. We live between the intersection of Kalkallo and Noble Lark, before you arrive at Dietz-Elkhorn, and we have collected the following data for that section of road (see attached letter to the City Council):

Between October 1st and December 16th, our section of Noble Lark has seen a total of 26,150 vehicles (22,143 cars and 4,007 heavy vehicles, which includes trucks, pickup trucks, delivery vans, and large SUVs). For weekdays, we have averaged over 450 vehicles per day, not counting evening traffic. Weekend traffic averages are 130 vehicles per day. That same period has seen 2,114 pedestrian walkers and 635 bicycles. Most of the traffic counts occur during school drop-off and pickup hours. For perspective, according to Boerne ISD enrollment data, prior to school re-zoning in 2023, the residents of the Woods had 37 children attending Van Raab Elementary. The traffic is clearly coming from elsewhere.

We are not qualified to speak as to whether these traffic counts are what is typically expected on a “Local Neighborhood Street” but we are sharing them for the committee’s consideration. From our perspective, these counts seem high for what should be expected for a neighborhood street with high use for walking/biking by residents and their children. We believe it should be addressed. Speed limits have been lowered but the change has not impacted vehicle volume and the safety concerns related to it.

Desired Outcome/Resolution

Return to the original city and engineering consultant recommendation for street closure, or in the alternative, a right turn only provision for Noble Lark turning onto Dietz Elkhorn. If neither of these solutions are advisable by the committee, designated walking lanes or street expansion should be considered.

We also desire an understanding why a recommendation for closure due to volume of traffic is no longer seen as necessary for safety of the street's residents.

STAFF REPORT

Public Works Comments

Attached are the Noble Lark Drive Traffic Engineer Study (Exhibit A) and the Noble Lark Drive Closure Analysis (Exhibit B) presented at the June 20, 2024 City Council meeting. The presentation provided:

1. Various traffic count results along with pre- and post-travel times.
2. Key study considerations.
3. Drone footage.
4. Pro and cons of available alternatives with cost estimates for closing access at or re-opening Noble Lark Drive.
5. Reasons for recommending closure.

After City Council discussion, Council directed staff to present an ordinance closing the access to and from Noble Lark Drive and Dietz Elkhorn Road. On July 18, 2024, City Council at the first reading of an ordinance closing the intersection, the Council voted to postpone this consideration indefinitely.

Public Safety Comments

We are aware of the concerns for Noble Lark and Kalkallo. The noted times of 7:30 a.m. and 3:00 p.m. during the week experiences a significant increase in vehicular traffic, both on these streets and for every intersection within the city limits, especially during the school year. We do not recommend the closing of any streets at this time, as removing the ability for travelers to move freely will add to the congestion and create new challenges.

There have been no reported collisions on these streets because of congestion or excessive speed.

COMMITTEE ACTION/RECOMMENDATION

I move to recommend ….

Dear Council:

As we have mentioned at previous council meetings, we have been gathering data on traffic and speed on Noble Lark Drive with the hope that it will be considered with and compared to the data collected by the city.

While it is summarized in this note, I have attached the collected data in graph form for ease of information sharing. We apologize for not attending today's meeting in person. This meeting conflicts with our daughter's birthday, so we hope our absence is understandable.

Since the re-opening, we have utilized an electronic traffic counter acquired from Telraam Citizen Data. We are happy to share the technical details of this device if such information is desired.

We live between the intersection of Kalkallo and Noble Lark, before you arrive at Dietz-Elkhorn, and we have collected the following data for that section of road:

- Between October 1st and December 16th, our section of Noble Lark has seen a total of 26,150 vehicles (22,143 cars and 4,007 heavy vehicles, which includes trucks, pickup trucks, delivery vans, and large SUVs). For weekdays, we have averaged over 450 vehicles per day, not counting evening traffic. Weekend traffic averages are 130 vehicles per day.

- That same time period has seen 2,114 pedestrian walkers and 635 bicycles

- Over 70% of the vehicles traveled at speeds between 18-31 mph – that is probably a reflection of the lowered speed limit.

The majority of the traffic counts occur during school drop-off and pickup hours. For perspective, according to Boerne ISD enrollment data, prior to school re-zoning in 2023, the residents of the Woods had 37 children attending Van Raab Elementary. The traffic is clearly coming from elsewhere.

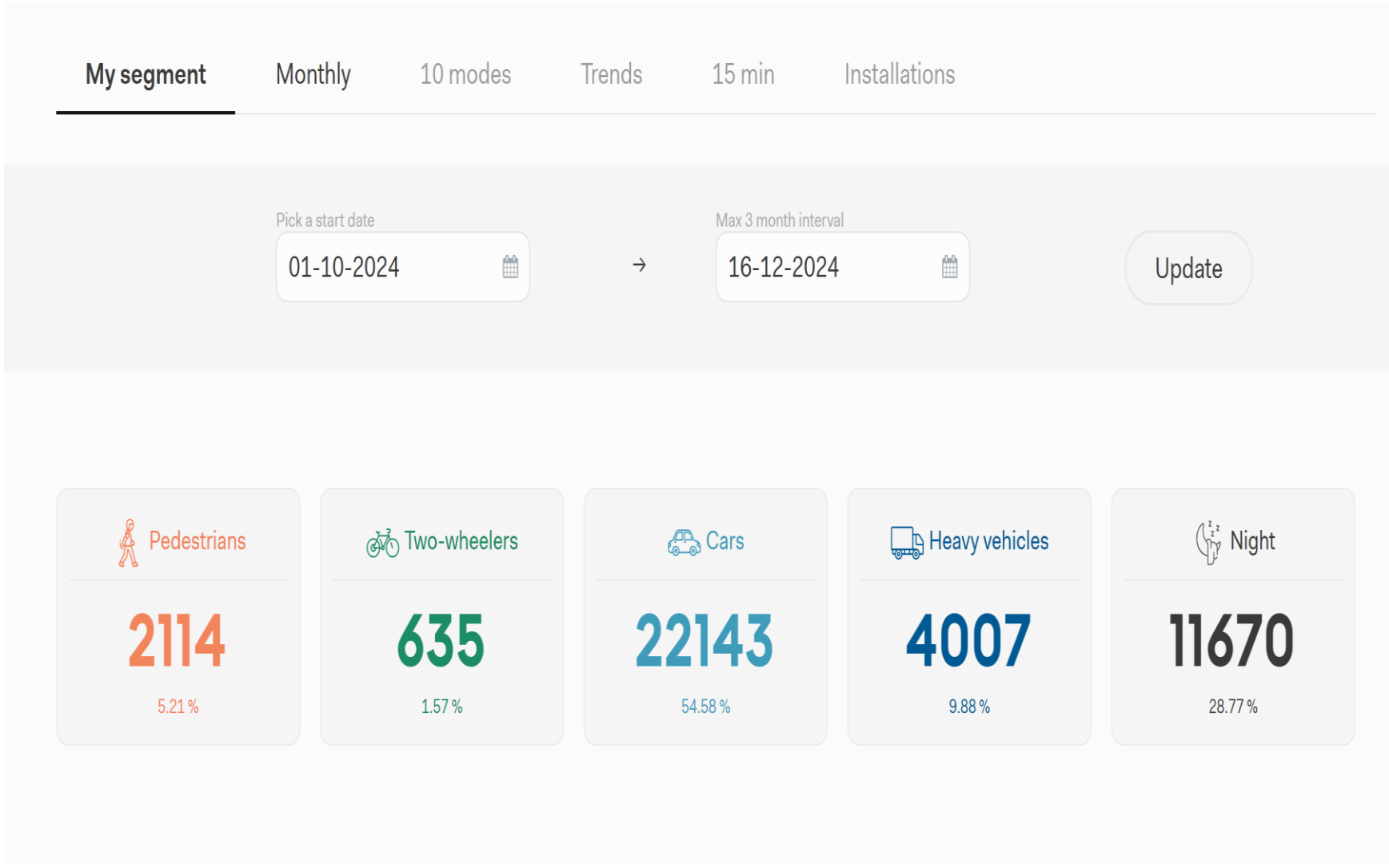
We are not qualified to speak as to whether these traffic counts are what is typically expected on a "Local Neighborhood Street" but we are sharing them for the council's consideration and to inform the process.

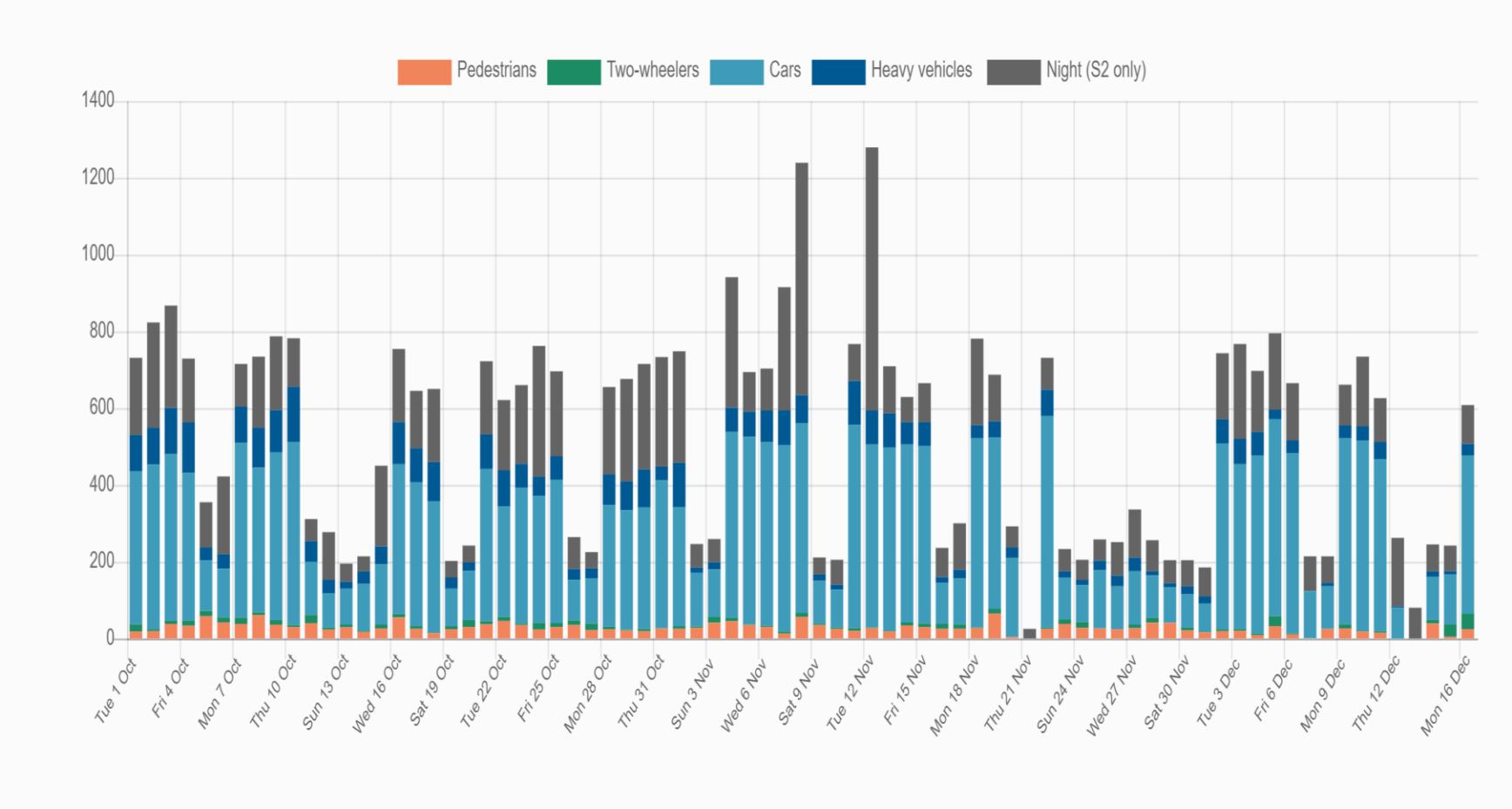
Again, we appreciate the City's efforts and the seriousness in which it is handling this matter. For the record, we continue to support full closure of the street, or in the alternative, a right-turn only provision.

If anyone wants to see the data for themselves, it can be viewed at: https://telraam.net – just find Boerne / Noble Lark Drive on the map and click on the street segment in yellow.

Sincerely,

Marc and Brandi Friberg


My segment
Monthly
10 modes
Trends
15 min
Installations
Pick a start date
01-10-2024
Max 3 month interval
16-12-2024
Update
Pedestrians
2114
5.21 %
Two-wheelers
635
1.57 %
Cars
22143
54.58 %
Heavy vehicles
4007
9.88 %
Night
11670
28.77 %


Pedestrians
Two-wheelers
Cars
Heavy vehicles
Night (S2 only)
1400
1200
1000
800
600
400
200
0
Tue 1 Oct
Fri 4 Oct
Mon 7 Oct
Thu 10 Oct
Sun 13 Oct
Wed 16 Oct
Sat 19 Oct
Tue 22 Oct
Fri 25 Oct
Mon 28 Oct
Thu 31 Oct
Sun 3 Nov
Wed 6 Nov
Sat 9 Nov
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Sat 30 Nov
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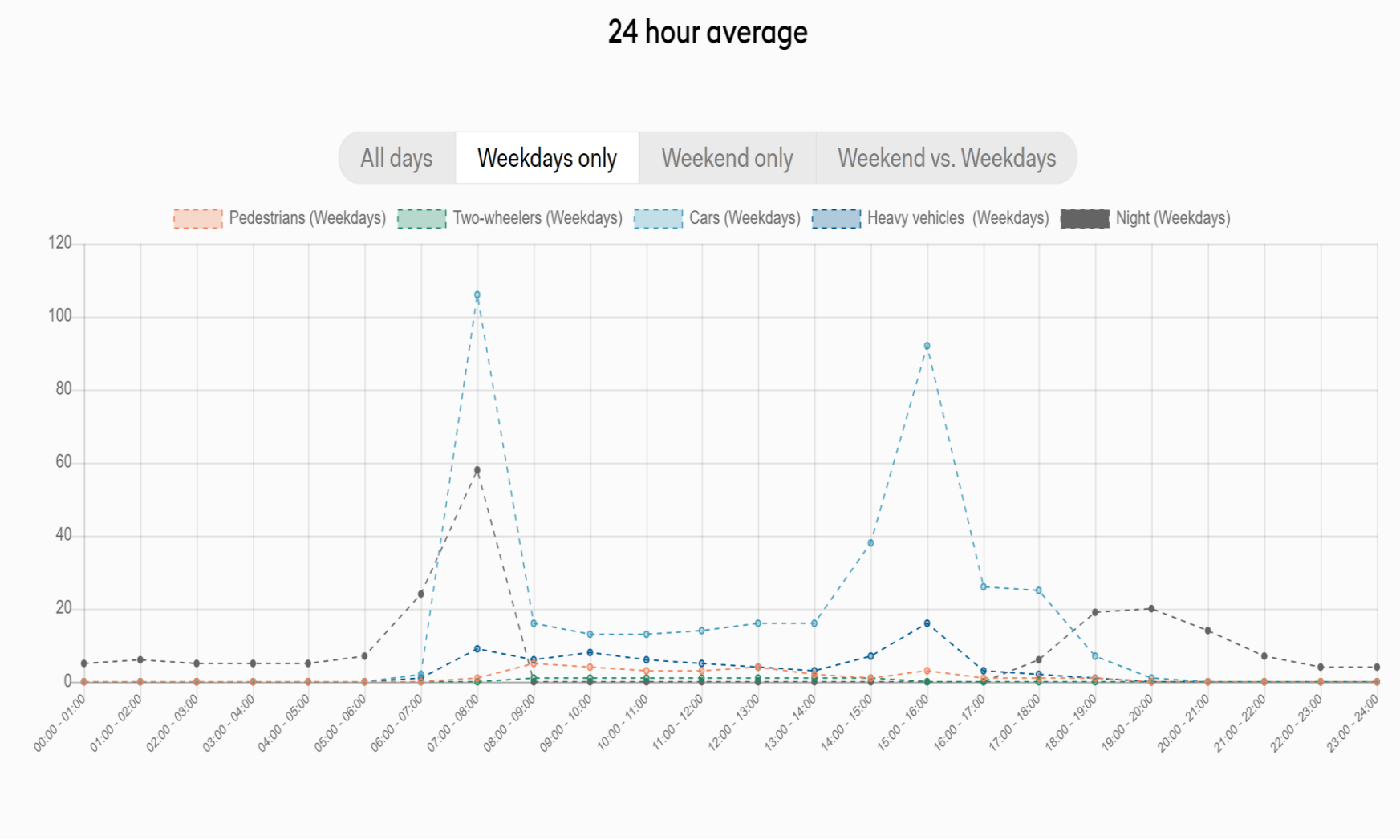
Thu 12 Dec
Mon 16 Dec


24 hour average
All days
Weekdays only
Weekend only
Weekend vs. Weekdays
Pedestrians (Weekdays)
Two-wheelers (Weekdays)
Cars (Weekdays)
Heavy vehicles (Weekdays)
Night (Weekdays)
120
100
80
60
40
20
0
00:00 - 01:00
01:00 - 02:00
02:00 - 03:00
03:00 - 04:00
04:00 - 05:00
05:00 - 06:00
06:00 - 07:00
07:00 - 08:00
08:00 - 09:00
09:00 - 10:00
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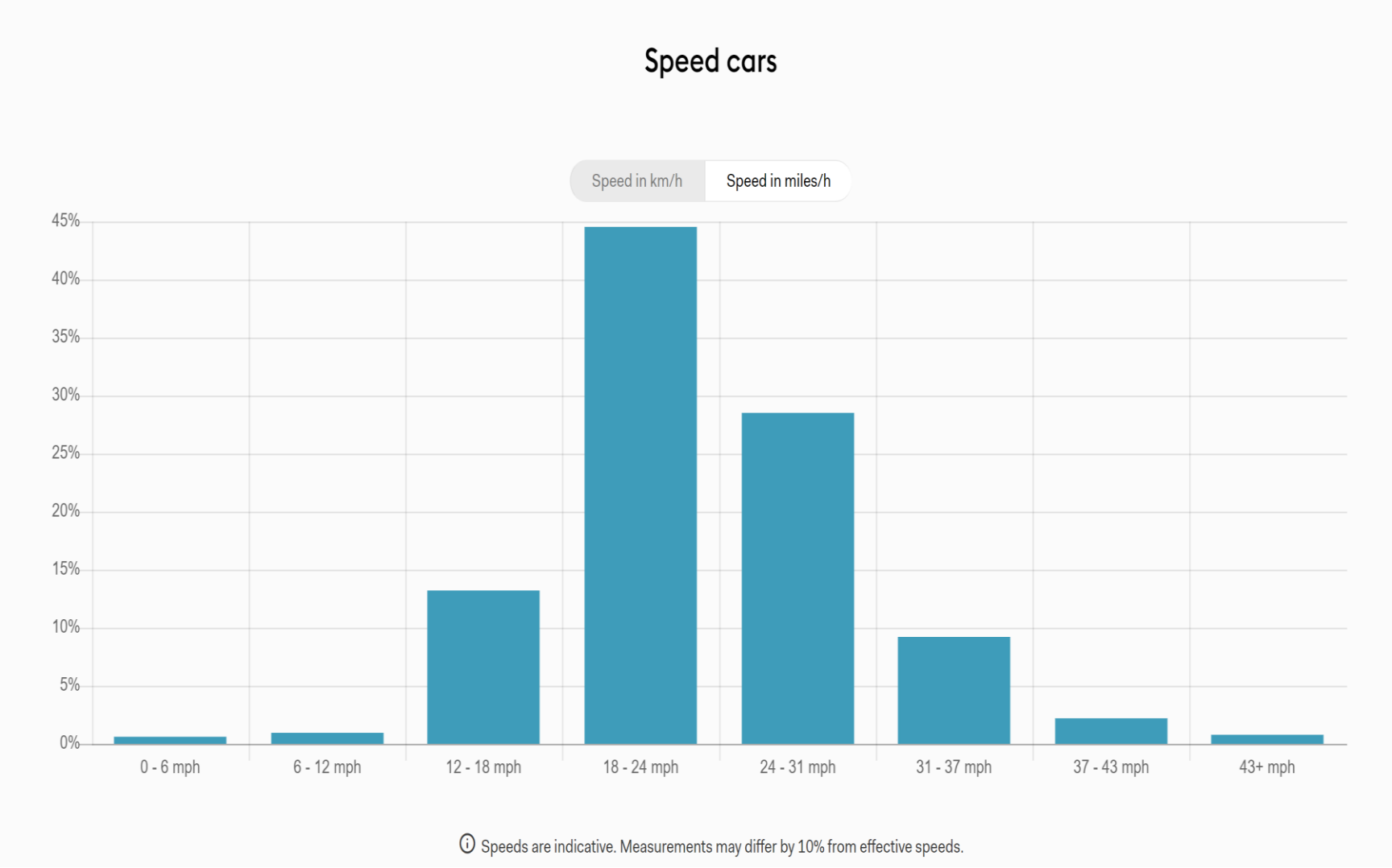
22:00 - 23:00
23:00 - 24:00


Speed cars
Speed in km/h
Speed in miles/h
45%
40%
35%
30%
25%
20%
15%
10%
5%
0%
0 - 6 mph
6 - 12 mph
12 - 18 mph
18 - 24 mph
24 - 31 mph
31 - 37 mph
37 - 43 mph
43+ mph
Speeds are indicative. Measurements may differ by 10% from effective speeds.

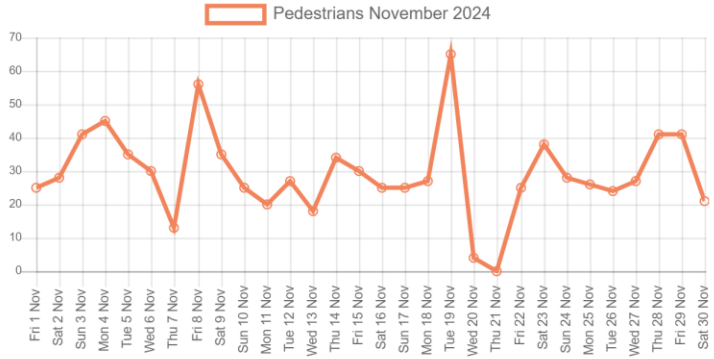
Noble Lark Drive Fair Oaks Ranch, United States

9000007296

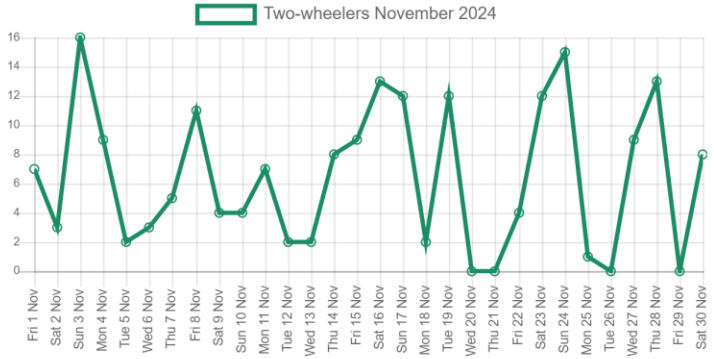
Noble Lark Drive

The measured daily volumes per mode of transport for your street.

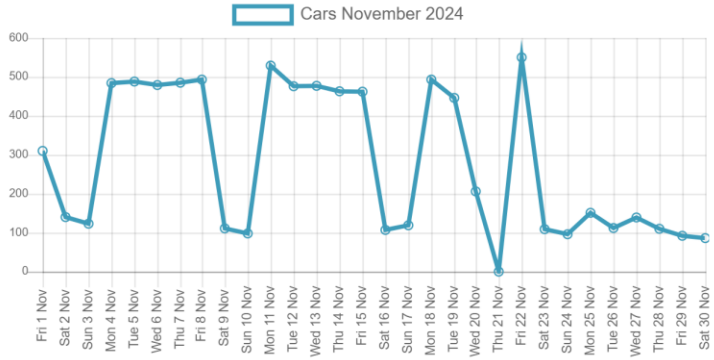
Pedestrians



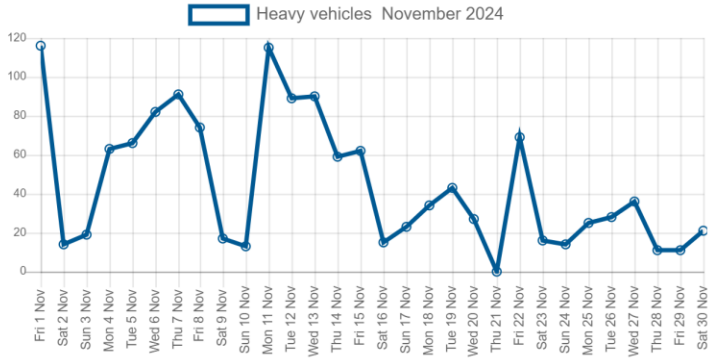
Two-wheelers



Cars



Heavy vehicles



Noble Lark Drive Closure at Dietz Elkhorn Road

Traffic Engineering Study

PREPARED FOR:

City of Fair Oaks Ranch, Texas

PREPARED BY:

LEGACY ENGINEERING GROUP

06/10/2024

Oscar Michael Garza, PE, PTOE, PTP, RSP1
Legacy Engineering Group, PLLC

City of Fair Oaks Ranch

June 2024

EXHIBIT A

TABLE OF CONTENTS

LIST OF FIGURES

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PROJECT DESCRIPTION

INTRODUCTION

Legacy Engineering Group was retained to conduct a Traffic Engineering Study along Dietz Elkhorn Road between Old Fredericksburg Road and Fair Oaks Parkway in Fair Oaks Ranch, TX. The purpose of this study is to analyze the effects of closing access to Noble Lark Drive at Dietz Elkhorn Road. The study location map is shown in Figure 1.

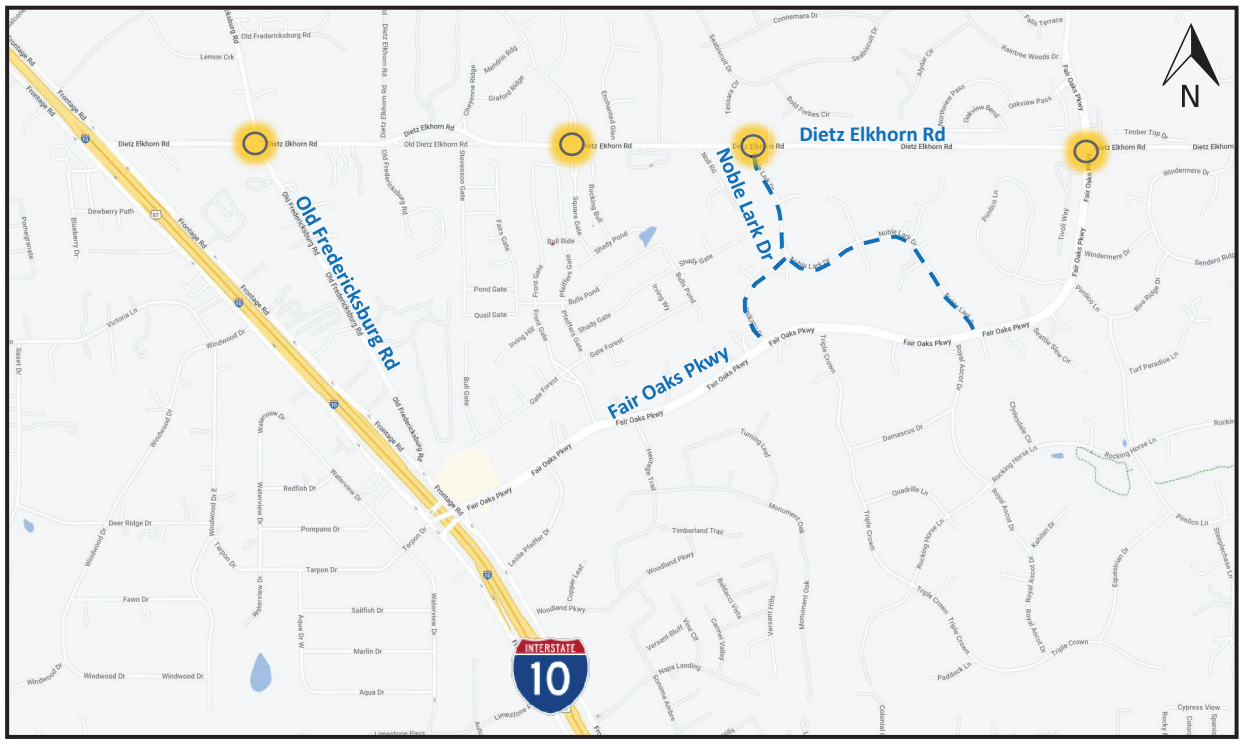


Figure 1 – Study Location Map

STUDY METHODOLOGY

The following study methodology was utilized to develop the findings within the report:

- A Project Site Visit was conducted to observe and document existing traffic conditions along Dietz Elkhorn Road and Noble Lark Drive, as well as travel times for the appropriate intersections
- Collection and review of Turning Movement Counts (TMCs)
- An analysis of the traffic operations and travel times at four intersections along Dietz Elkhorn Road for the Pre & Post Closure of Noble Lark Drive
- Utilized Sim Traffic to establish queuing along the corridor

Figure 2 shows the locations where TMC data was collected.

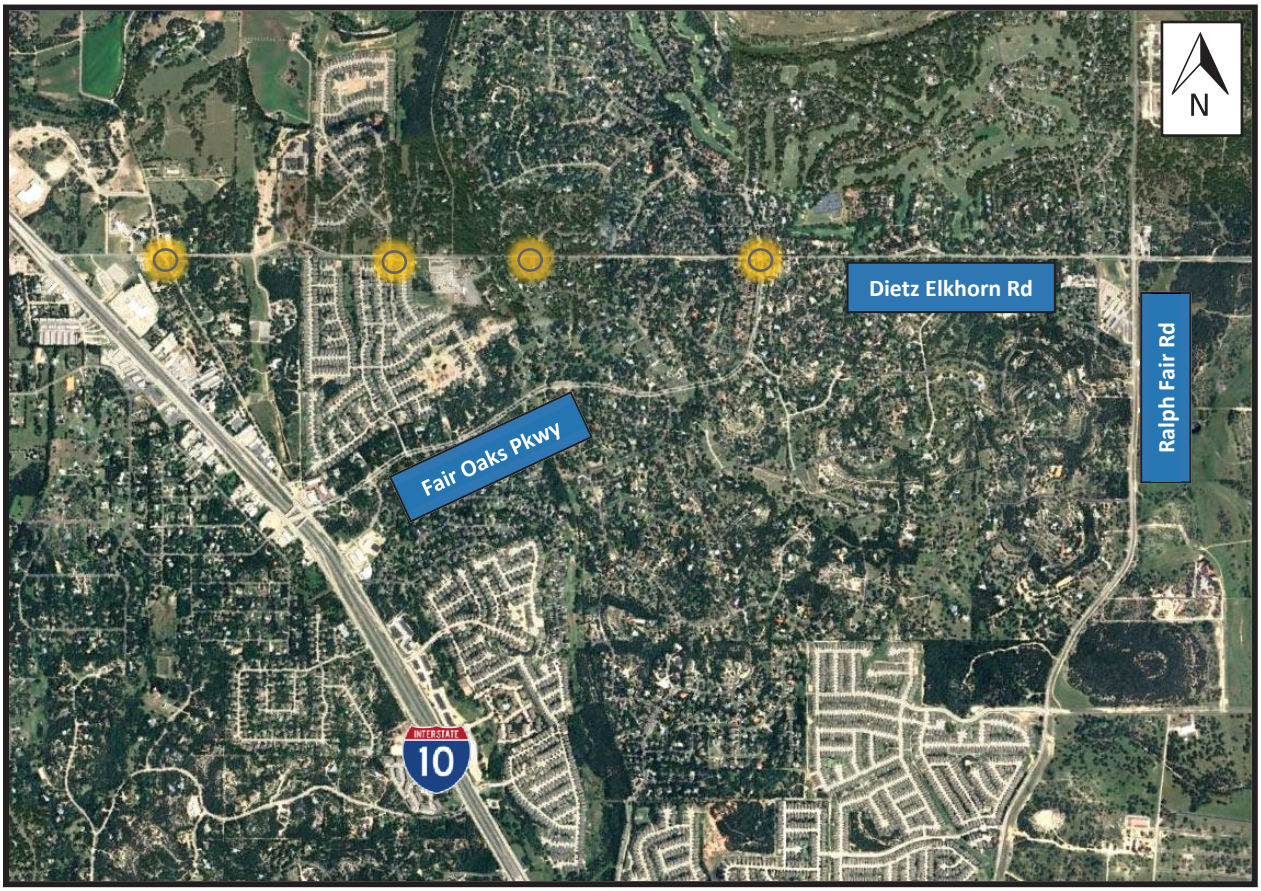


Figure 2 – TMC Data Locations

EXISTING CONDITIONS

Dietz Elkhorn Road

Dietz Elkhorn Road is a two-lane undivided roadway that extends in a general east-west direction within the study limits and has a posted speed limit of 35 MPH. The studied roadway is identified as a Collector on the City of Fair Oaks Ranch Unified Development Code (UDC) Planning Map with an Annual Average Daily Traffic (AADT) of 2,440 (as of 2020 utilizing TxDOT STARS II Traffic County Database System). An aerial photo of three Dietz Elkhorn Road study intersections can be seen in Figures 3-5.

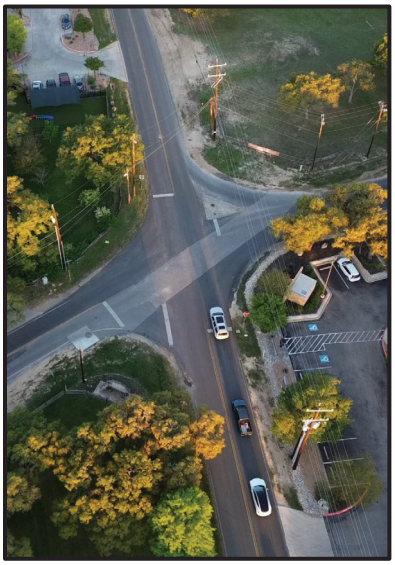


Figure 3 – Old Fredericksburg Rd Intersection

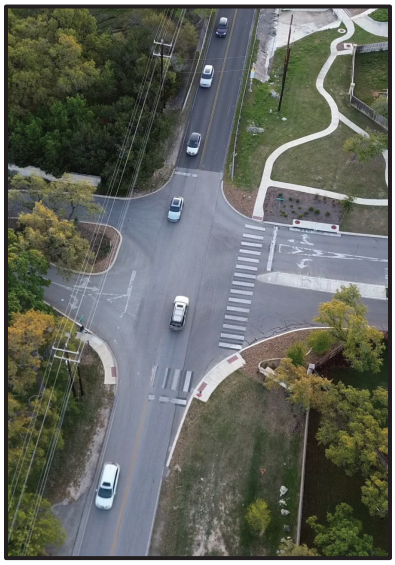


Figure 4 – Square Gate Intersection

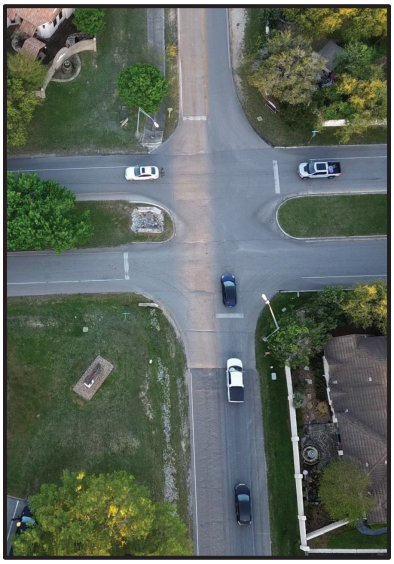


Figure 5 – Fair Oaks Pkwy Intersection

Old Fredericksburg Road

Old Fredericksburg Road is a two-lane undivided roadway that extends in a general north-south direction within the study limits and has a posted speed limit of 35 MPH. The studied roadway is owned and maintained by Bexar County, with an AADT of 1,124 (as of 2020 utilizing TxDOT STARS II Traffic County Database System).

Square Gate

Square Gate is a two-lane undivided roadway that extends in a general north-south direction within the study limits and has a posted speed limit of 25 MPH. Square gate is a private/gated roadway that leads to the Front Gate Subdivision and has a two-lane northbound approach at the intersection with Dietz Elkhorn Road. During site visits, it was observed that this route was utilized as a “cut-through” movement for vehicles traveling to/from Van Raub Elementary School.

Fair Oaks Parkway

Fair Oaks Parkway is a two-lane divided roadway that extends in a general north-south direction within the study limits and has a posted speed limit of 35 MPH. on the City of Fair Oaks Ranch Unified Development Code (UDC) Planning Map with an Annual Average Daily Traffic (AADT) of 8,895 (as of 2020 utilizing TxDOT STARS II Traffic County Database System). As shown within Appendix D, the intersection of Dietz Elkhorn Road & Fair Oaks Pkwy has been studied in the past and the Level of Service (LOS) results have been provided.

Noble Lark Drive

Noble Lark Drive is a two-lane undivided roadway that extends in a general north-south direction within the study limits and has a posted speed limit of 30 MPH. The typical section includes one lane in each direction. A photo of a typical section for Noble Lark Drive can be seen in Figure 6.

During site visits, it was observed that this route was utilized as a “cut-through” movement for vehicles traveling to/from Van Raub Elementary School. Consequently, this residential street experiences elevated traffic levels, particularly during school peak periods, resulting in potential safety concerns and increased loading on the roadway infrastructure. The higher traffic density disrupts the intended local traffic flow, resulting in a significant deviation from the street's design purpose of serving neighborhood residents.

Figure 6 – Noble Lark Dr Northbound

TRAFFIC DATA

Traffic data was collected at the following intersections from 7-9 AM and 2-6 PM on Thursday, March 7, 2024.

- Dietz Elkhorn Road & Old Fredericksburg Road
- Dietz Elkhorn Road & Square Gate
- Dietz Elkhorn Road & Fair Oaks Parkway

Please note that all traffic data can be found in Appendix A of this report.

SITE VISIT NOTES

Site visits were conducted on multiple days from March through May 2024 and notes have been provided as follows:

- March 7th, 2024 — Observation of vehicular queuing activity for both AM and PM peak periods. The observed school peaks for Van Raub Elementary School are as follows:
  - AM Arrival: 7:00 AM to 8:00 AM
  - PM Dismissal: 3:00 PM to 4:00 PM

- March 26th, 2024 — Observation of vehicular queuing activity for both AM and PM peak periods. The observed school peaks for Van Raub Elementary School are as follows:
  - AM Arrival: 7:00 AM to 8:00 AM
  - PM Dismissal: 2:45 PM to 3:45 PM

- March 27th, 2024 — Observation of vehicular queuing activity during both AM and PM peak periods. The observed school peaks for Van Raub Elementary School are as follows:
  - AM Arrival: 7:20 AM to 8:20 AM
  - PM Dismissal: 2:45 PM to 3:45 PM

- May 2nd, 2024 — Conducted travel times runs during school peak periods.
  - AM Arrival: 7:00 AM to 8:30 AM
  - PM Dismissal: 2:45 PM to 3:45 PM

Summary of site visits:

- During the AM observation, queueing along Dietz Elkhorn Road at Old Fredericksburg Road was observed only for the westbound direction, while in the PM queueing was observed at the intersection for the eastbound direction. Please note that the queues decreased significantly within 5 minutes of the maximum queue length.

- During the AM observations, queueing along Dietz Elkhorn Road and Square Gate was observed in both the westbound and eastbound directions, while in the PM only westbound queues were observed with minimal queueing in the eastbound direction. Please note that the queues decreased significantly within 5-10 minutes of the maximum queue length.

- During the AM and PM observations, queueing along Dietz Elkhorn Road and Fair Oaks Parkway was observed in the eastbound direction. Please note that the queues decreased significantly within 10 minutes of the maximum queue length.

DRONE FOOTAGE

The studied segment of Dietz Elkhorn Road is approximately 2 miles long and portions of the corridor can be seen in Figures 7-12. Each image shows an overlay of the queuing. Figure 7 shows the queue extending over 750 LF from the Dietz Elkhorn Road and Square Gate intersection in the AM peak period. Figure 8 shows the queue extending approximately 415 LF on the westbound approach at Dietz Elkhorn Road and Old Fredericksburg Road during the AM peak period. Figure 9 shows the queue extending approximately 775 LF along the eastbound approach of Dietz Elkhorn Road and Fair Oaks Parkway during the PM peak period. Figure 10 shows the queue extending over 750 LF along the westbound approach of Dietz Elkhorn Road and Square Gate during the PM peak period. Figure 11 shows the existing PM queue cleared up within 5-10 minutes of the maximum queue length during the PM peak period. Figure 12 shows the existing Noble Lark Drive closure.

Figure 7 – Approximately 750 LF Queue at Dietz Elkhorn Rd and Square Gate (AM)

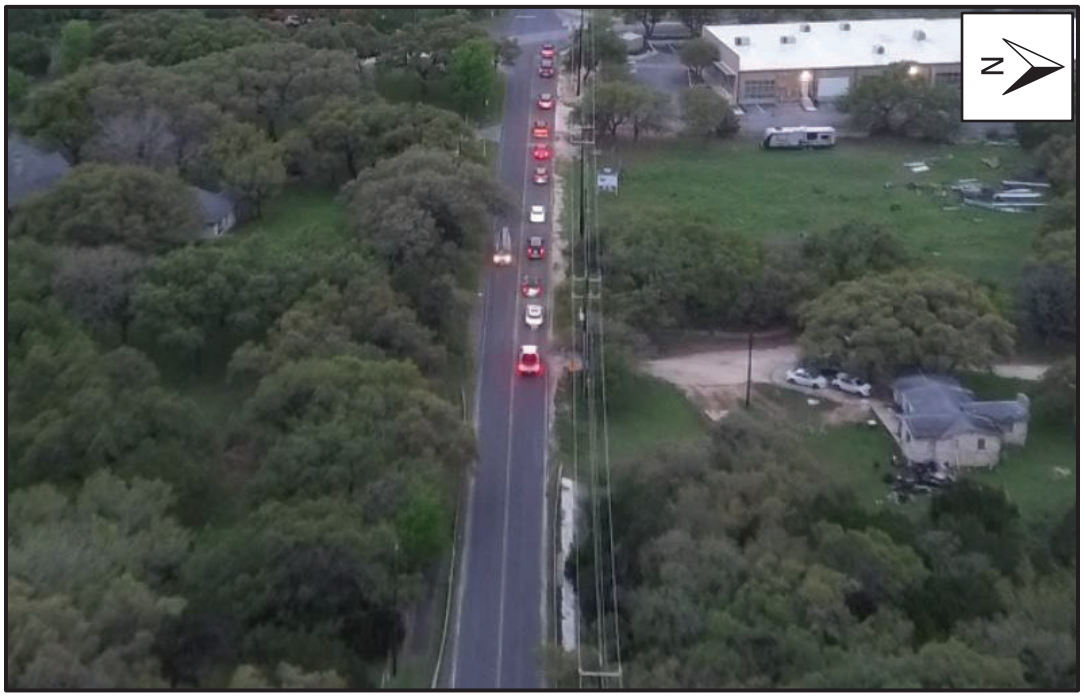


Figure 8 – Approximately 415 LF Queue at Dietz Elkhorn Rd and Old Fredericksburg Rd (AM)

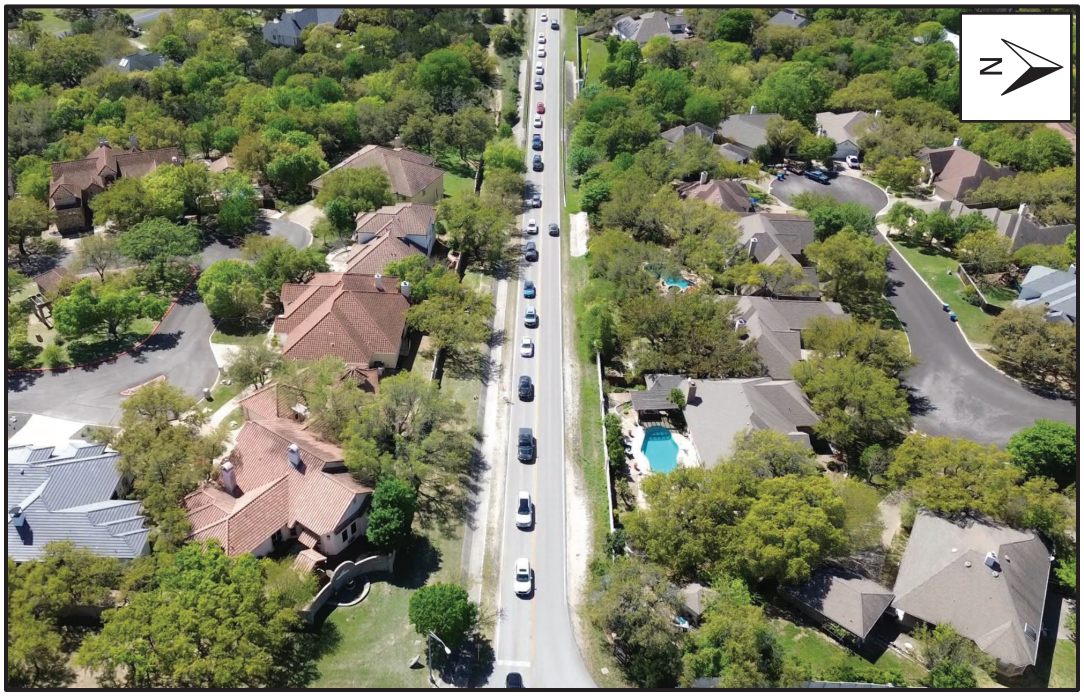


Figure 9 – Approximately 775 LF Queue at Dietz Elkhorn Rd and Fair Oaks Pkwy Eastbound (PM)

Figure 10 – Approximately 750 LF Queue at Dietz Elkhorn Rd and Square Gate Westbound (PM)

Figure 11 – Queue Cleared at Dietz Elkhorn Rd and Square Gate Westbound (PM)

Figure 12 – Noble Lark Dr Closure Eastbound

TRAVEL TIME ANALYSIS

Travel times were calculated utilizing a combination of data collection analysis and predictive modeling. "Pre-Closure" traffic data was estimated based on a previously conducted traffic analysis in 2021 by the City of Fair Oaks Ranch. Estimating travel times in traffic engineering involves traffic flow characteristics, roadway conditions, predictive modeling, data collection, and environmental factors. An origin was established at the intersection of I-10 & Fair Oaks Pkwy with a destination of Van Raub Elementary School (to/from as entering/exiting), and five different potential routes were studied as shown in Table 1 and 2 below.

Table 1 – Noble Lark Drive Pre / Post Closure Analysis Times & Travel (Entering)

Entering		Route #1		Route #2		Route #3		Route #4		Route #5	
Travel Time Run #		Old Fredericksburg Rd		Square Gate		Fair Oaks Pkwy		Noble Lark Dr		Kalkallo Dr	
		Pre-Closure	Post-Closure	Pre-Closure	Post-Closure	Pre-Closure	Post-Closure	Pre-Closure	Post-Closure	Pre-Closure	Post-Closure
AM	1	0:03:41	0:04:06	0:04:05	0:04:23	0:04:32	0:05:13	0:04:22	0:04:53	0:04:15	0:04:37
	2	0:03:50	0:04:16	0:03:47	0:04:10	0:04:58	0:05:33	0:04:38	0:05:11	0:04:30	0:04:52
PM	1	0:03:48	0:04:25	0:03:27	0:03:52	0:04:42	0:05:09	0:05:06	0:05:34	0:04:53	0:05:26
	2	0:03:51	0:04:09	0:03:18	0:03:43	0:04:54	0:05:21	0:04:44	0:05:17	0:04:37	0:05:05
Average	AM	0:03:46	0:04:11	0:03:56	0:04:17	0:04:45	0:05:23	0:04:30	0:05:02	0:04:23	0:04:45
	PM	0:03:49	0:04:17	0:03:23	0:03:48	0:04:48	0:05:15	0:04:55	0:05:25	0:04:45	0:05:15

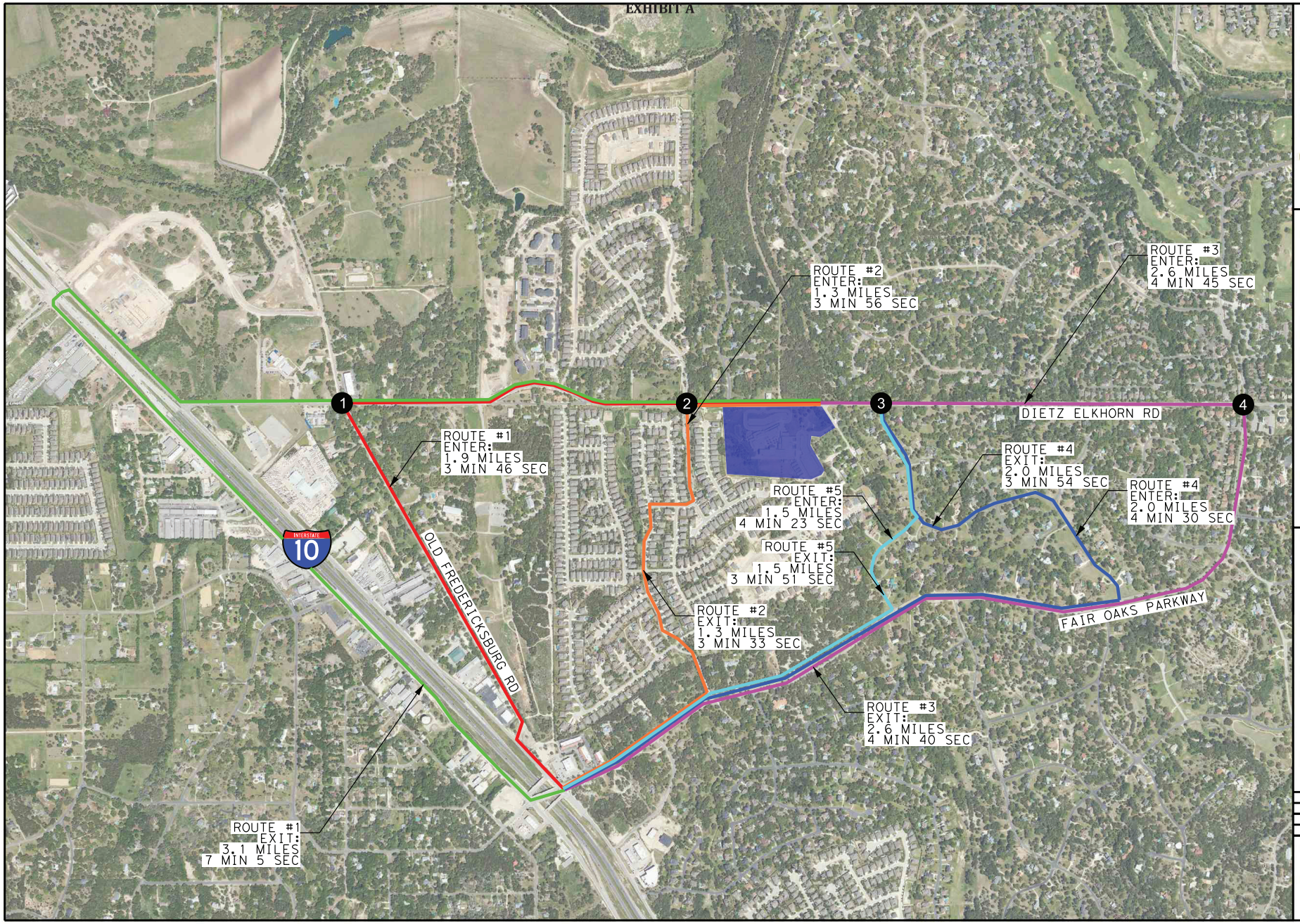
Table 2 – Noble Lark Drive Pre / Post Closure Analysis Times & Travel (Exiting)

Exit		Route #1		Route #2		Route #3		Route #4		Route #5	
Travel Time Run #		Old Fredericksburg Rd		Square Gate		Fair Oaks Pkwy		Noble Lark Drive		Kalkallo Dr	
		Pre-Closure	Post-Closure	Pre-Closure	Post-Closure	Pre-Closure	Post-Closure	Pre-Closure	Post-Closure	Pre-Closure	Post-Closure
AM	1	0:07:24	0:07:36	0:03:44	0:04:04	0:04:53	0:05:01	0:04:03	0:04:31	0:03:52	0:04:11
	2	0:06:47	0:07:09	0:03:22	0:03:48	0:04:26	0:05:08	0:03:44	0:04:11	0:03:49	0:04:22
PM	1	0:08:57	0:11:26	0:07:26	0:07:54	0:04:13	0:04:34	0:04:24	0:04:49	0:04:14	0:04:36
	2	0:06:18	0:06:20	0:05:07	0:06:29	0:04:04	0:04:40	0:03:53	0:04:24	0:03:44	0:04:11
Average	AM	0:07:05	0:07:23	0:03:33	0:03:56	0:04:40	0:05:04	0:03:54	0:04:21	0:03:51	0:04:16
	PM	0:07:38	0:08:53	0:06:16	0:07:11	0:04:09	0:04:37	0:04:09	0:04:36	0:03:59	0:04:24

TRAVEL TIME SUMMARY

The results of this analysis found that opening Noble Lark Drive decreases travel times to Van Raub Elementary School by approximately 30 seconds. An overlay of the routes can be seen in the exhibits on pages 14-17.

EXHIBIT A



LEGACY ENGINEERING GROUP

Legacy Engineering Group, PLLC
7800 W Interstate 10, Suite 800, San Antonio, Texas 78230
210.860.1980 / TBPE Firm Registration No. 20623

Van Raub Elementary School

Along Dietz Elkhorn Road East of Square Gate

Pre-Closure Travel Times (AM)

Legend

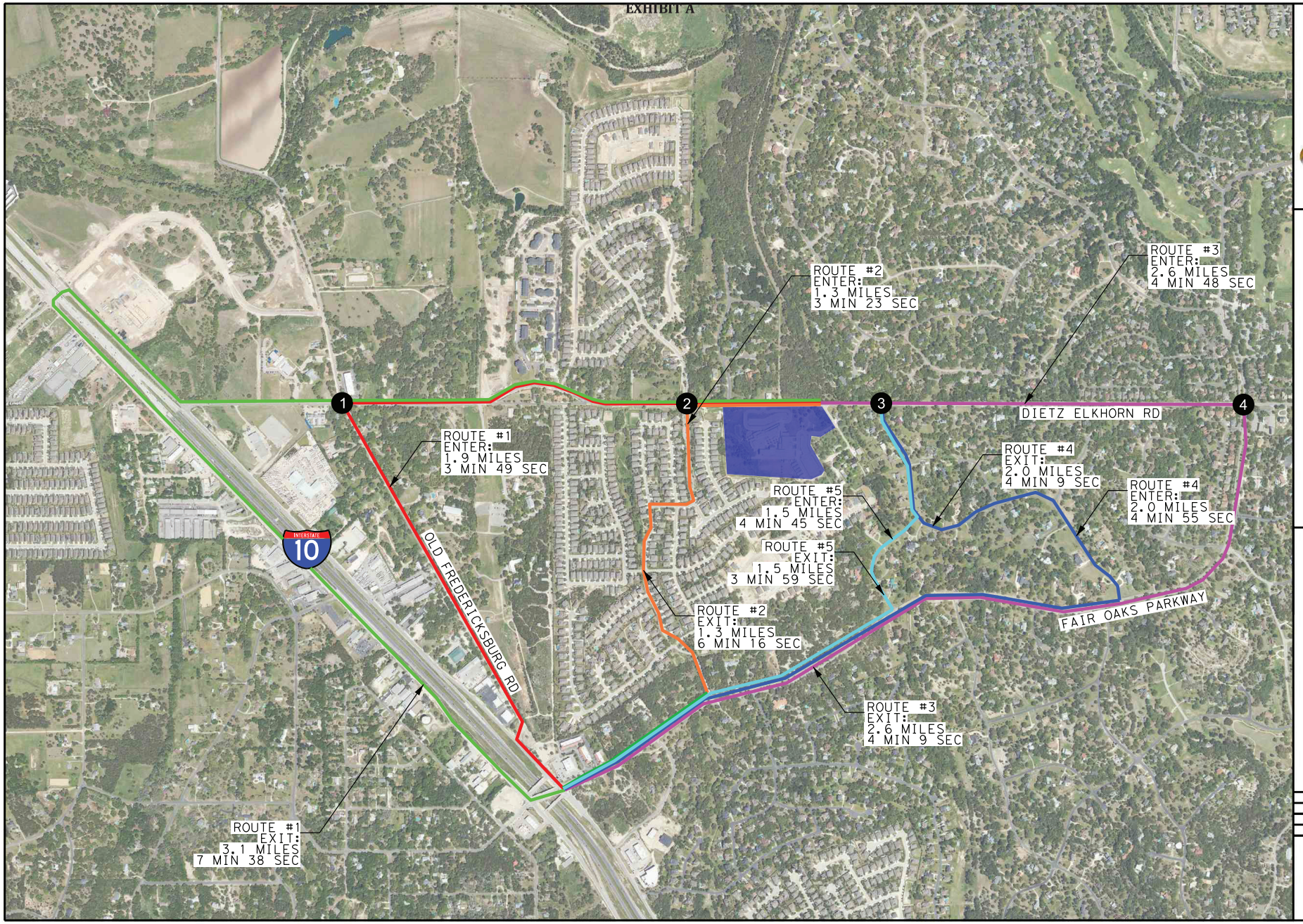
XX Intersection No.

DATE:
6/10/2024

SCALE:
1" = 400'

PAGE:
14

EXHIBIT A



LEGACY ENGINEERING GROUP

Legacy Engineering Group, PLLC
7800 W Interstate 10, Suite 800, San Antonio, Texas 78230
210.660.1980 / TBPE Firm Registration No. 20623

Van Raub Elementary School

Along Dietz Elkhorn Road East of Square Gate

Pre-Closure Travel Times (PM)

Legend

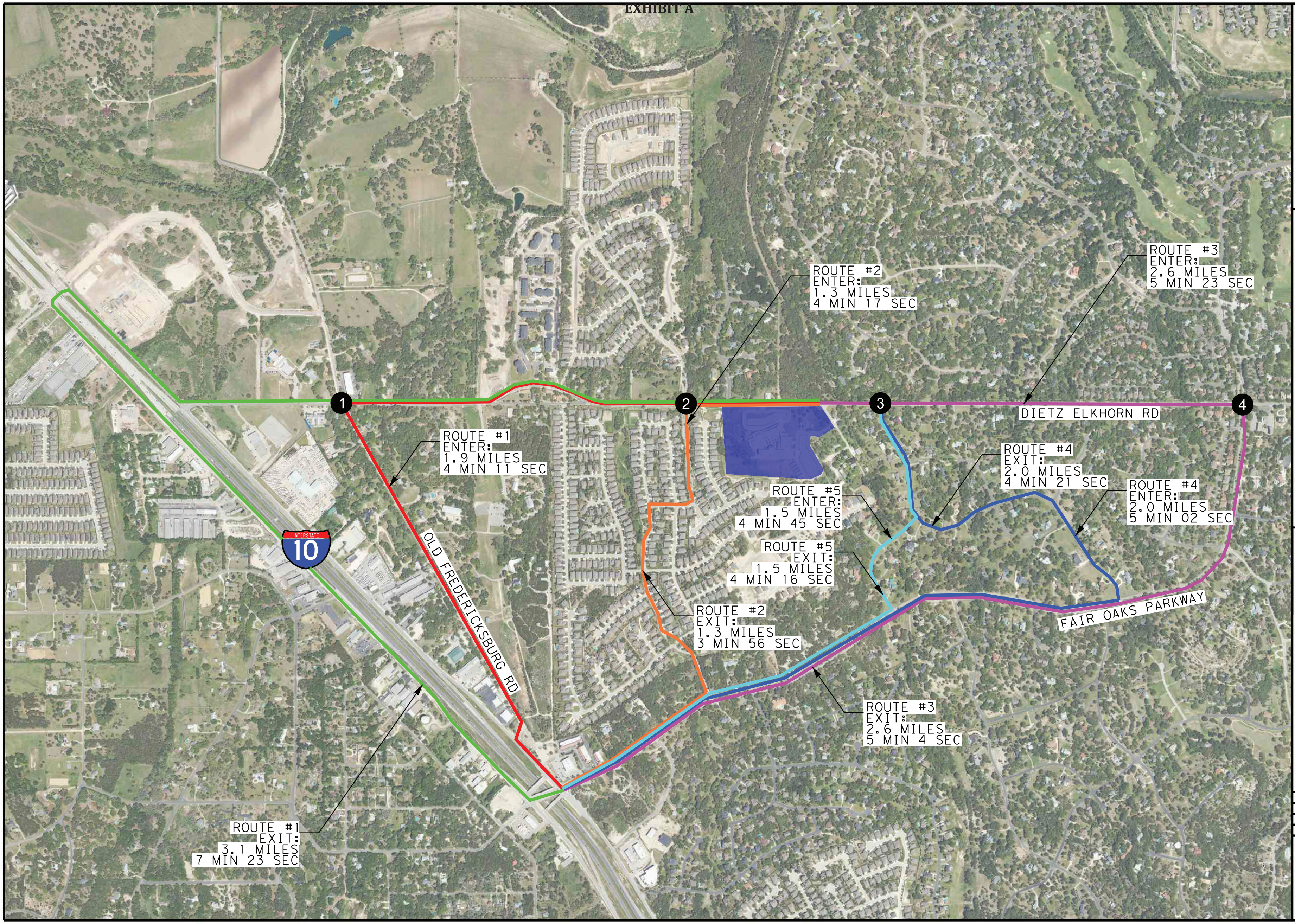
XX Intersection No.

DATE:
6/10/2024

SCALE:
1" = 400'

PAGE:
15

EXHIBIT A



LEGACY ENGINEERING GROUP
Legacy Engineering Group, PLLC
7800 W Interstate 10, Ste 830, San Antonio, Texas 78230
210.660.1960 / TBPE Firm Registration No. 20623

Van Raub Elementary School

Along Dietz Elkhorn Road East of Square Gate

Post-Closure Travel Times (AM)

Legend

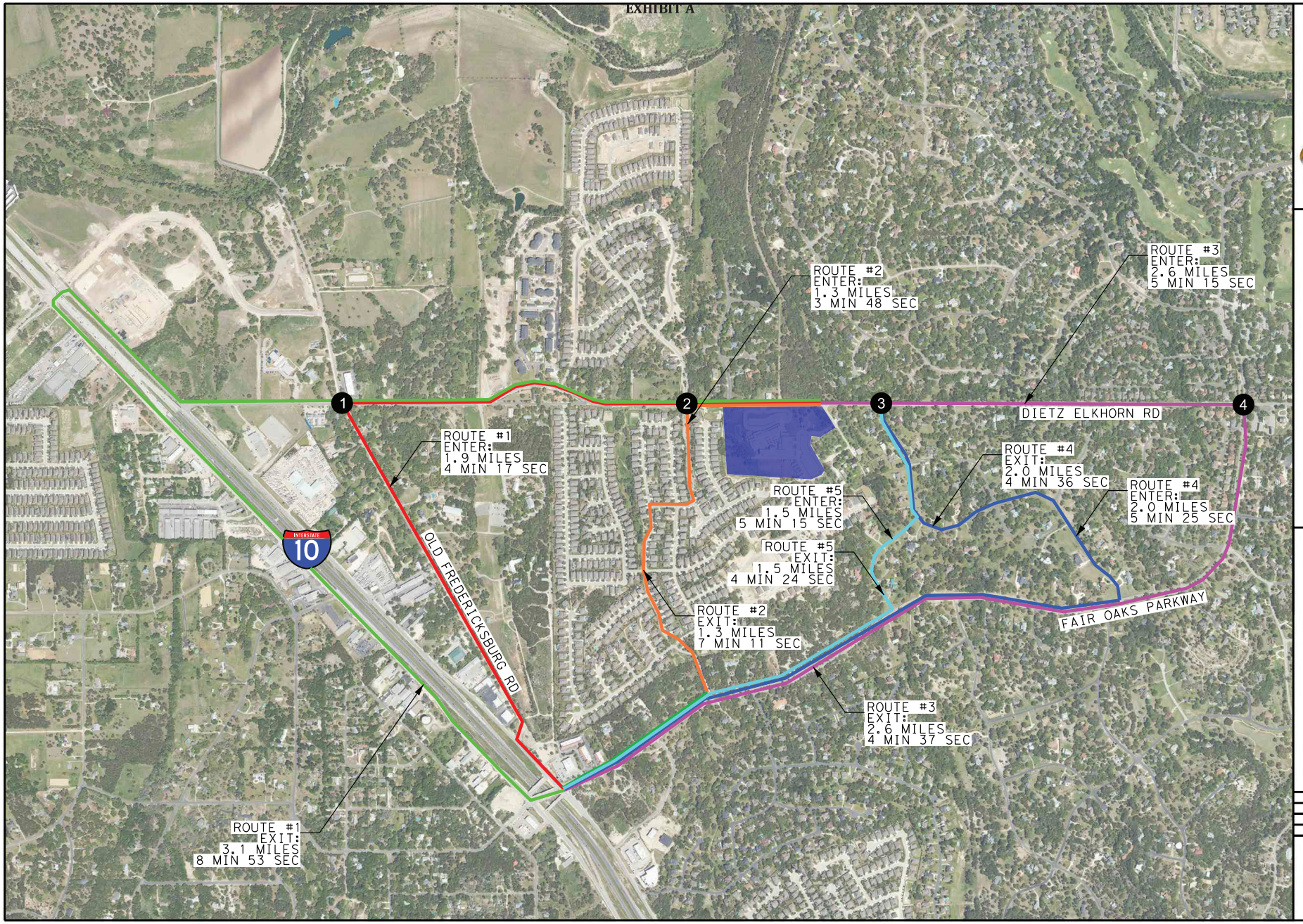
XX Intersection No.

DATE: 6/10/2024

SCALE: 1" = 400'

PAGE: 16

EXHIBIT A



LEGACY ENGINEERING GROUP

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210.660.1980 / TBPE Firm Registration No. 20623

Van Raub Elementary School

Along Dietz Elkhorn Road East of Square Gate

Post-Closure Travel Times (PM)

Legend

XX Intersection No.

DATE:
6/10/2024

SCALE:
1" = 400'

PAGE:
17

PROPOSED CONDITIONS / SCENARIO SUMMARY

The following section details the Proposed Conditions / Scenario based on the LOS and queueing analysis conducted.

PROPOSED OPTION 1

The closure of Noble Lark Drive will enhance safety and prevent the cut-through traffic movements to/from Van Raub Elementary School during school peak periods. This scenario enhances public safety along the corridor considering that Noble Lark Drive was designed as a local residential street. An image of the proposed movements allowed can be seen below in Figure 13.

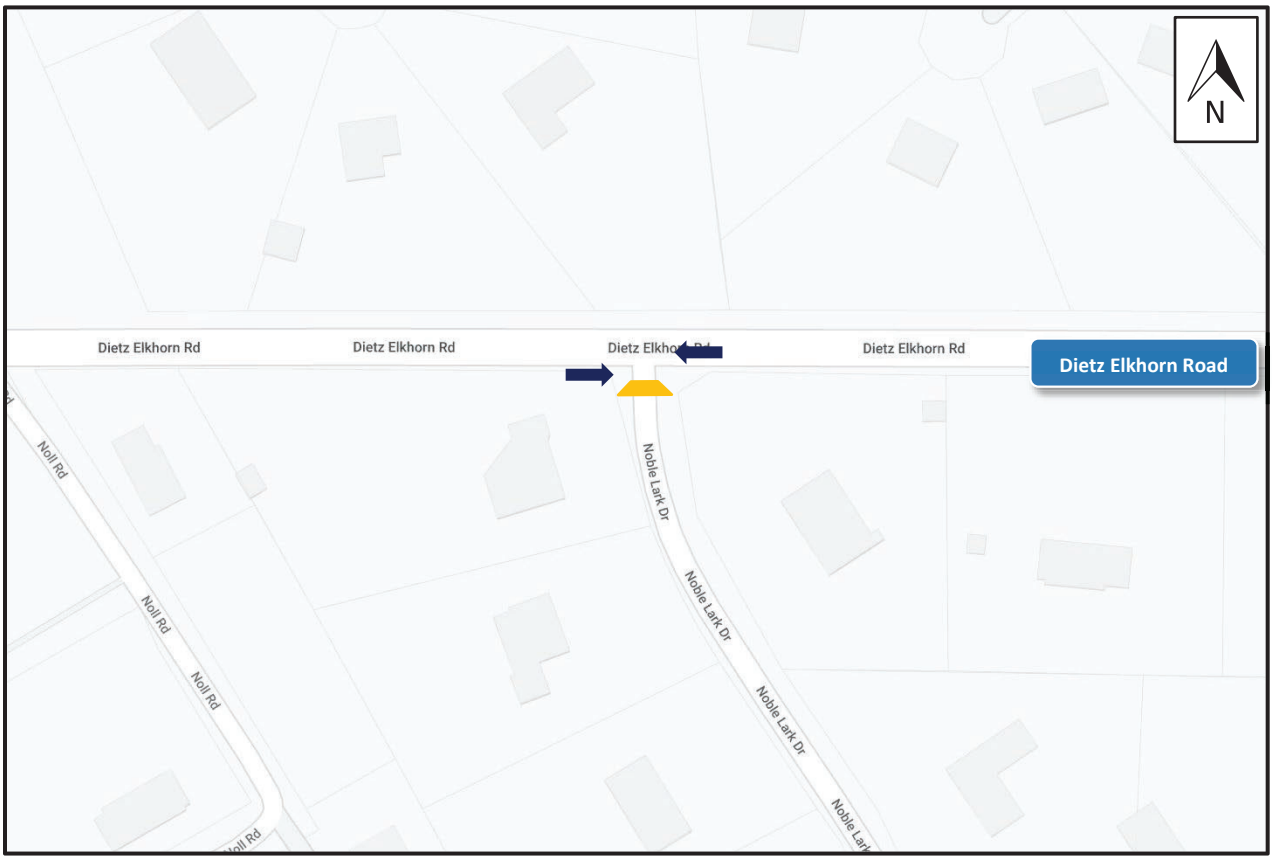

Figure 13 – Dietz Elkhorn Rd & Noble Lark Dr Closed Access

Pros to permanently closing Noble Lark Drive

- Enhances safety
- Prevents cut-through traffic flow on neighborhood street
- Aligns with City Transportation Plan (Moving Traffic to Collectors)

Cons to permanently closing Noble Lark Drive

- Increases travel times / delays on collectors
- Requires permanent structure

PROPOSED OPTION 2

The reopening of Noble Lark Drive after a temporary closure was considered as a potential option. This scenario will alleviate queues at studied intersections (which will be discussed later in this report); however, it will have a negative impact on safety along Noble Lark Drive. An image of the proposed movements allowed can be seen below in Figure 14.

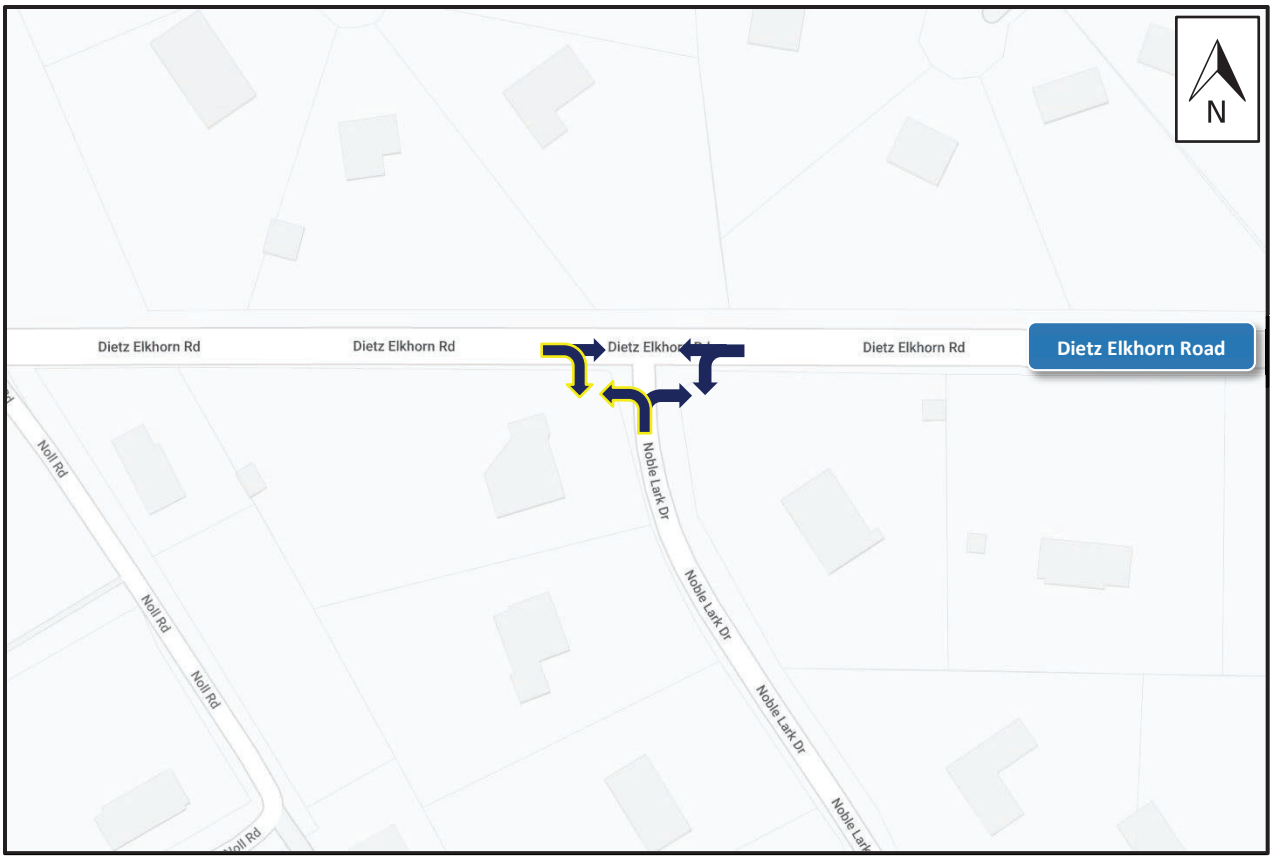

Figure 14 – Dietz Elkhorn Rd & Noble Lark Dr Open

The outlined arrows shown in Figure 14 represent traffic movements generated by Van Raub Elementary School.

Pros to reopening Noble Lark Drive

- Decreases travel times / delays on collectors

Cons to reopening Noble Lark Drive

- Impacts safety along Noble Lark Drive
- Impacts roadways infrastructure
- Traffic calming measures may be required

PROPOSED OPTION 3

Opening Noble Lark Drive to one-way southbound operations was considered as an option to alleviate extensive queueing at Dietz Elkhorn Road and Fair Oaks Parkway in the eastbound direction. By restricting vehicular movements to one direction, one-way streets can streamline traffic operations, minimize conflicts at intersections, and reduce potential queues. An image of the proposed movements allowed can be seen below in Figure 15.

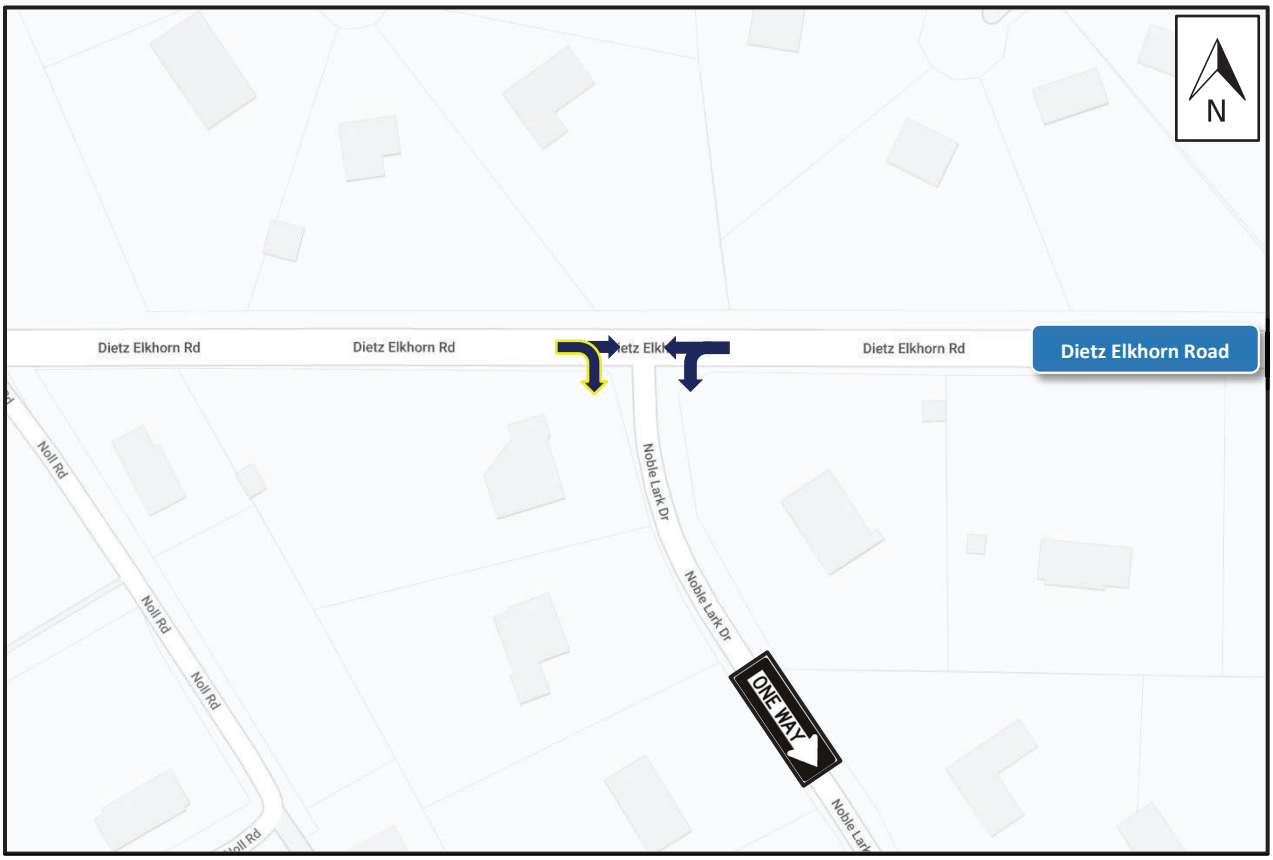

Figure 15 – Dietz Elkhorn Rd & Noble Lark Dr One-Way Southbound

The outlined arrows shown in Figure 15 represent traffic movements generated by Van Raub Elementary School.

Pros to converting Noble Lark Drive to a southbound one-way

- Reduces cut-through traffic flow on neighborhood street

Cons to converting Noble Lark Drive to a southbound one-way

- Impacts safety for Noble Lark Drive
- Increase travel times / delays on collectors
- Creates driver confusion
- Includes risk of wrong-way driving

PROPOSED OPTION 4

Opening Noble Lark Drive to one-way northbound operations was considered as an option to alleviate extensive queueing at Dietz Elkhorn Road and Square Gate in the eastbound direction. By restricting vehicular movements to one direction, one-way streets can streamline traffic operations, minimize conflicts at intersections, and reduce potential queues. An image of the proposed movements allowed can be seen below in Figure 16.

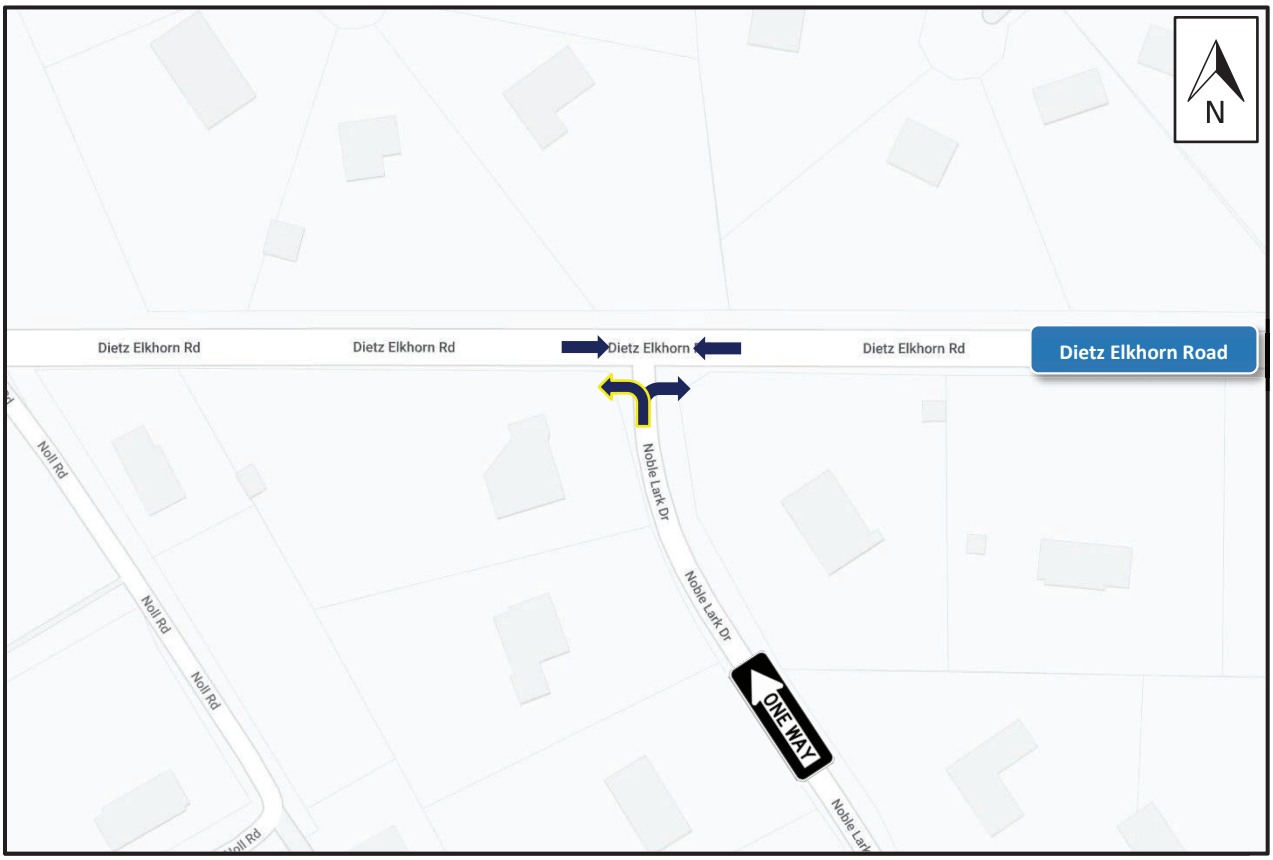

Figure 16 – Dietz Elkhorn Rd & Noble Lark Dr One-Way Northbound

The outlined arrows shown in Figure 16 represent traffic movements generated by Van Raub Elementary School.

Pros to converting Noble Lark Drive to a northbound one-way

- Reduces cut-through traffic flow on neighborhood street
- Decreases travel times / delays on collectors

Cons to converting Noble Lark Drive to a northbound one-way

- Impacts safety along Noble Lark Drive
- Creates driver confusion
- Includes risk of wrong-way driving

PROPOSED OPTION 5

Opening Noble Lark Drive to northbound exiting right-turn only operations was considered as an option to allow residents on Noble Lark Drive access to Dietz Elkhorn Road with minimal conflicts. However, this may encourage U-turn movements on a corridor not designed for such movements. An image of the proposed movements allowed can be seen below in Figure 17.

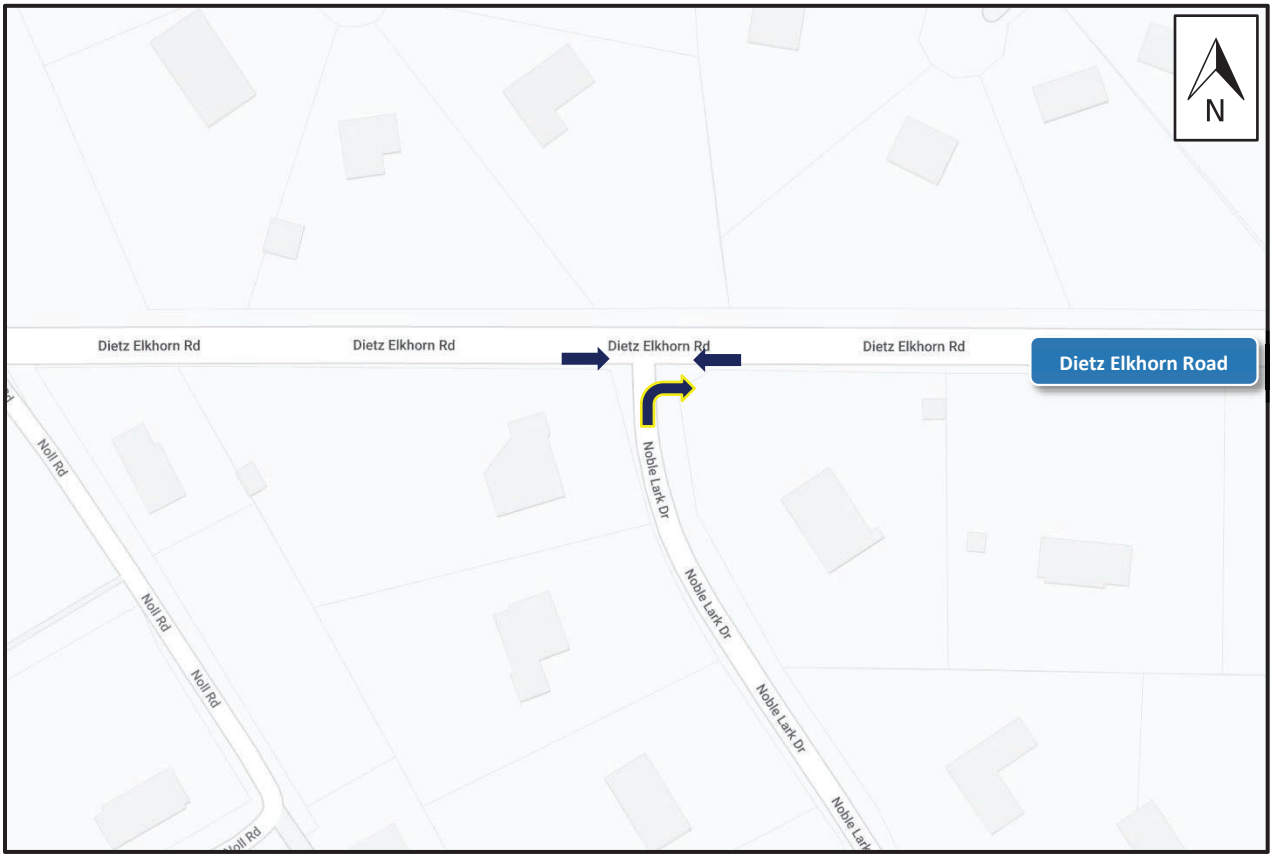

Figure 17 – Dietz Elkhorn Rd & Noble Lark Dr One-Way Northbound

The outlined arrows shown in Figure 17 represent traffic movements generated by Van Raub Elementary School.

Pros to converting Noble Lark Drive to a northbound one-way

- Reduces cut-through traffic flow on neighborhood street
- Decreases travel times / delay on collectors

Cons to converting Noble Lark Drive to a northbound one-way

- Impacts safety along Noble Lark Drive
- Includes risk of U-turn on Diets Elkhorn Road
- Potential impacts to adjacent properties

Please note that an exhibit showing the potential U-turn movements this option may create can be seen in figure 18 and in Appendix E of this report.

Figure 18 – Proposed Option 5 Potential U-Turn Movements

OPERATIONAL ANALYSIS

LEVEL OF SERVICE ANALYSIS

The traffic simulation analysis was conducted using Synchro 12.0 Traffic Simulation Software. The analysis process involved the development of a base model, calibration of the base model, and an alternative comparison to the base model. Development of the base model involves the creation of a system network, also referred to as the link-node diagram. The network development includes link-node assignments, traffic control, roadway geometry, lane designations & assignments, traffic volumes, and turning movements. A screenshot of the Synchro Model created for this study can be seen in Figure 19.

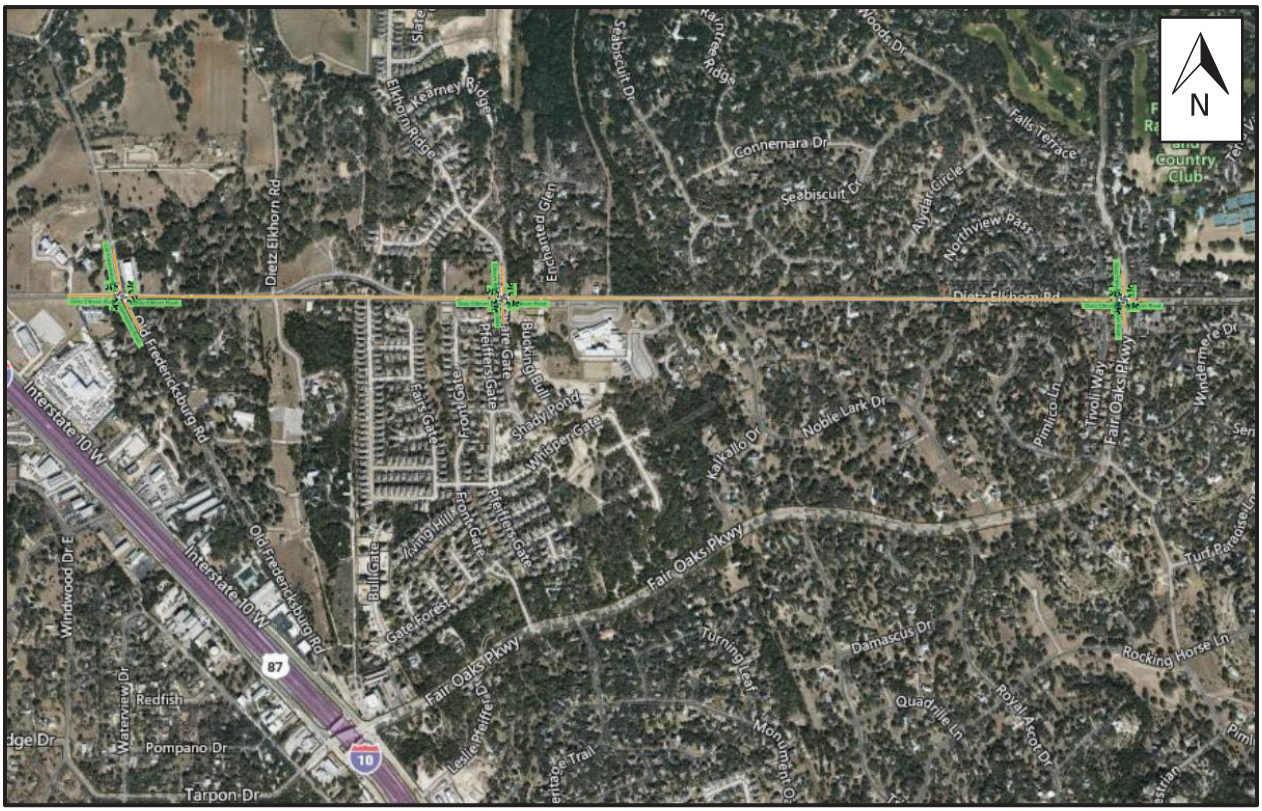

Figure 19 – Synchro Model Screenshot

Based on criteria found in the *Highway Capacity Manual 2010 (HCM)*, the critical minor street approach is used to determine the Levels of Service (LOS) for Two-Way Stop Controlled (TWSC) intersections. For signalized intersections, the LOS is determined based on the measures of effectiveness obtained from the traffic simulation output and the average control delay in seconds per vehicle (sec/veh) from the model.

Table 3 shows the average control delay ranges with the corresponding LOS for TWSC intersections.

Table 3 – Average Control Delay Ranges

Level of Service	Average Control Delay (sec/veh) Per Approach (TWSC)
A	≤10
B	> 10 – ≤15
C	> 15 – ≤25
D	> 25 – ≤35
E	> 35 – ≤50
F	> 50

This traffic analysis evaluated four options as described in the previous section and are summarized below:

- Proposed Option 1 (Noble Lark Drive Access Closed)
- Proposed Option 2 (Noble Lark Drive Access Open)
- Proposed Option 3 (Noble Lark Drive Access One-Way Southbound)
- Proposed Option 4 (Noble Lark Drive Access One-Way Northbound)
- Proposed Option 5 (Noble Lark Drive Access Right-Out Northbound)

Tables 4-7 present a summary of the intersection and approach LOS values obtained from the traffic simulation.

Table 4 – Dietz Elkhorn Rd & Old Fredericksburg Rd LOS Results

Dietz Elkhorn Rd & Old Fredericksburg Rd	Intersection Analysis								Control Type: AWSC	
	Northbound Old Fredericksburg Rd		Southbound Old Fredericksburg Rd		Eastbound Dietz Elkhorn Rd		Westbound Dietz Elkhorn Rd		Intersection Average	
	Delay (Sec)	LOS	Delay (Sec)	LOS	Delay (Sec)	LOS	Delay (Sec)	LOS	Delay (Sec)	LOS
AM Peak Period										
Proposed Option 1	12.3	B	38.5	E	10.8	B	18.3	C	18.3	C
Proposed Option 2	8.6	A	6.5	A	8.9	A	19.4	C	12.7	B
Proposed Option 3	14.2	B	6.9	A	11.8	B	19.2	B	14.0	B
Proposed Option 4	7.2	A	6.3	A	8.4	A	22.4	C	14.1	B
Proposed Option 5	14.6	B	7.0	A	15.6	B	21.6	C	16.0	C
PM Peak Period										
Proposed Option 1	6.9	A	17.6	C	9.4	A	20.5	C	16.2	C
Proposed Option 2	6.0	A	6.5	A	10.3	B	18.4	B	11.9	B
Proposed Option 3	6.4	A	6.6	A	8.0	A	13.9	B	9.5	A
Proposed Option 4	7.0	A	7.2	A	10.0	A	19.6	B	13.4	B
Proposed Option 5	7.8	A	7.5	A	9.4	A	19.4	B	13.2	B

Table 5 – Dietz Elkhorn Rd & Square Gate LOS Results

Dietz Elkhorn Rd & Square Gate /Elkhorn Ridge	Intersection Analysis								Control Type: AWSC	
	Northbound Square Gate		Southbound Elkhorn Ridge		Eastbound Dietz Elkhorn Rd		Westbound Dietz Elkhorn Rd		Intersection Average	
	Delay (Sec)	LOS	Delay (Sec)	LOS	Delay (Sec)	LOS	Delay (Sec)	LOS	Delay (Sec)	LOS
AM Peak Period										
Proposed Option 1	7.0	A	6.6	A	14.2	B	19.6	C	14.4	B
Proposed Option 2	4.1	A	5.1	A	8.0	A	9.5	A	8.0	A
Proposed Option 3	6.3	A	6.8	A	12.0	B	10.0	A	10.1	B
Proposed Option 4	4.7	A	5.8	A	9.0	A	8.5	A	8.2	A
Proposed Option 5	7.0	A	8.8	A	15.3	B	15.4	B	13.6	B
PM Peak Period										
Proposed Option 1	5.4	A	5.4	A	11.8	B	14.4	B	11.9	B
Proposed Option 2	5.0	A	5.1	A	9.9	A	10.1	B	8.9	A
Proposed Option 3	5.0	A	4.7	A	9.8	A	8.4	A	8.4	A
Proposed Option 4	4.8	A	5.1	A	9.7	A	10.4	B	9.2	A
Proposed Option 5	4.8	A	4.7	A	9.3	A	10.2	B	9.0	A

Table 6 – Dietz Elkhorn Rd & Noble Lark Dr LOS Results

Dietz Elkhorn Rd & Noble Lark Dr	Intersection Analysis								Control Type: TWSC	
	Northbound Noble Lark Dr		Southbound		Eastbound Dietz Elkhorn Rd		Westbound Dietz Elkhorn Rd		Intersection Average	
	Delay (Sec)	LOS	Delay (Sec)	LOS	Delay (Sec)	LOS	Delay (Sec)	LOS	Delay (Sec)	LOS
AM Peak Period										
Proposed Option 1										
Proposed Option 2	12.9	B			4.5	A	3.3	A	6.3	A
Proposed Option 3					4.8	A	3.0	A	4.1	A
Proposed Option 4	15.2	B			2.4	A	3.9	A	8.1	A
Proposed Option 5	2.9	A			2.5	A	3.9	A	3.0	A
PM Peak Period										
Proposed Option 1										
Proposed Option 2	4.1	A			2.6	A	1.7	A	2.3	A
Proposed Option 3					3.9	A	2.2	A	3.3	A
Proposed Option 4	6.8	A			2.9	A	3.5	A	3.7	A
Proposed Option 5	2.2	A			2.9	A	3.5	A	3.1	A

Table 7 – Dietz Elkhorn Rd & Fair Oaks Pkwy LOS Results

Dietz Elkhorn Rd & Fair Oaks Pkwy	Intersection Analysis								Control Type: AWSC	
	Northbound Fair Oaks Pkwy		Southbound Fair Oaks Pkwy		Eastbound Dietz Elkhorn Rd		Westbound Dietz Elkhorn Rd		Intersection Average	
	Delay (Sec)	LOS	Delay (Sec)	LOS	Delay (Sec)	LOS	Delay (Sec)	LOS	Delay (Sec)	LOS
AM Peak Period										
Proposed Option 1	25.2	C	213.2	F	13.8	A	16.8	C	73.1	F
Proposed Option 2	11.5	B	100.8	F	14.5	B	20.8	C	48.9	E
Proposed Option 3	23.8	C	133.4	F	13.0	B	15.9	C	56.6	F
Proposed Option 4	13.8	B	115.7	F	14.0	B	14.7	B	52.9	F
Proposed Option 5	24.6	C	127	F	13.5	B	13.9	B	57.4	F
PM Peak Period										
Proposed Option 1	13.5	B	11.0	B	22.5	C	9.0	A	14.7	B
Proposed Option 2	11.6	B	8.6	A	12.3	B	7.6	A	10.2	B
Proposed Option 3	13.9	B	10.3	B	12.3	B	7.0	A	11.6	B
Proposed Option 4	11.9	B	9.8	A	12.8	B	7.5	A	11.0	B
Proposed Option 5	13	B	10	A	12.8	B	8.4	A	11.4	B

QUEUEING ANALYSIS

A queueing analysis was conducted at each study intersection along the project limits utilizing SimTraffic simulation software to display the results. The corresponding models were calibrated according to the conditions observed during the site visits. The observed queues during the site visits were matched with the queues simulated in SimTraffic. Tables 8 – 11 display the 95th percentile queue lengths in linear feet.

Table 8 – Dietz Elkhorn Rd & Old Fredericksburg Rd Queue Results

Dietz Elkhorn Rd & Old Fredericksburg Rd	Queue Analysis											
	Northbound Old Fredericksburg Rd			Southbound Old Fredericksburg Rd			Eastbound Dietz Elkhorn Rd			Westbound Dietz Elkhorn Rd		
	Queue Length (ft)			Queue Length (ft)			Queue Length (ft)			Queue Length (ft)		
	L	T	R	L	T	R	L	T	R	L	T	R
AM Peak Period												
Proposed Option 1	200			437			284			442		
Proposed Option 2	86			83			90			336		
Proposed Option 3	215			63			221			353		
Proposed Option 4	77			88			107			355		
Proposed Option 5	176			83			190			413		
PM Peak Period												
Proposed Option 1	76			324			75			409		
Proposed Option 2	64			54			105			173		
Proposed Option 3	66			71			119			926		
Proposed Option 4	57			62			86			178		
Proposed Option 5	69			77			80			173		

Table 9 – Dietz Elkhorn Rd & Square Gate Queue Results

Dietz Elkhorn Rd & Square Gate	Queue Analysis											
	Northbound Square Gate			Southbound Elkhorn Ridge			Eastbound Dietz Elkhorn Rd			Westbound Dietz Elkhorn Rd		
	Queue Length (ft)			Queue Length (ft)			Queue Length (ft)			Queue Length (ft)		
	L	T	R	L	T	R	L	T	R	L	T	R
AM Peak Period												
Proposed Option 1	43	87		49		42	1329			746		
Proposed Option 2	42	48		60		48	133			236		
Proposed Option 3	46	54		62		50	210			273		
Proposed Option 4	40	56		55		53	115			827		
Proposed Option 5	38	84		72		44	193			206		
PM Peak Period												
Proposed Option 1	40	47		46		43	136			1271		
Proposed Option 2	42	47		54		51	105			173		
Proposed Option 3	34	48		39		51	126			151		
Proposed Option 4	41	54		45		63	125			214		
Proposed Option 5	44	48		46		47	79			109		

Table 10 – Dietz Elkhorn Rd & Noble Lark Dr Queue Results

Dietz Elkhorn Rd & Noble Lark Dr	Queue Analysis											
	Northbound Noble Lark Dr			Southbound			Eastbound Dietz Elkhorn Rd			Westbound Dietz Elkhorn Rd		
	Queue Length (ft)			Queue Length (ft)			Queue Length (ft)			Queue Length (ft)		
	L	T	R	L	T	R	L	T	R	L	T	R
AM Peak Period												
Proposed Option 1												
Proposed Option 2	166											
Proposed Option 3												
Proposed Option 4	176											
Proposed Option 5	38											
PM Peak Period												
Proposed Option 1												
Proposed Option 2	69											
Proposed Option 3												
Proposed Option 4	52											
Proposed Option 5	38											

Table 11 – Dietz Elkhorn Rd & Fair Oaks Pkwy Queue Results

Dietz Elkhorn Rd & Fair Oaks Pkwy	Queue Analysis											
	Northbound Fair Oaks Pkwy			**Southbound** Fair Oaks Pkwy			**Eastbound** Dietz Elkhorn Rd			**Westbound** Dietz Elkhorn Rd		
	Queue Length (ft)			**Queue Length (ft)**			**Queue Length (ft)**			**Queue Length (ft)**		
	L	**T**	**R**	**L**	**T**	**R**	**L**	**T**	**R**	**L**	**T**	**R**
AM Peak Period												
Proposed Option 1	140			509			140			164		
Proposed Option 2	138			302			125			153		
Proposed Option 3	171			352			144			128		
Proposed Option 4	163			423			249			202		
Proposed Option 5	139			265			191			115		
PM Peak Period												
Proposed Option 1	293			149			425			111		
Proposed Option 2	212			104			165			85		
Proposed Option 3	203			129			183			80		
Proposed Option 4	154			99			248			96		
Proposed Option 5	167			106			109			98		

PERMANENT CLOSURE CONSIDERATIONS

If the City of Fair Oaks Ranch were to permanently close Noble Lark Drive, the following should be considered:

- Cul-de-Sac Conversion: Transforming the end of the street into a cul-de-sac provides a turnaround area for vehicles. This option often includes implementing signage to indicate the change and possibly installing a physical barrier such as a curb or decorative planter to block through traffic.

- Barricades: Installing permanent barricades, such as bollards, fences, or large planters, physically prevents vehicles from accessing the closed section. Appropriate signage is necessary to inform drivers of the closure.

- Emergency-Access Gates: Deploying emergency gates offers a flexible solution, allowing the road to remain accessible to emergency vehicles while preventing cut-through traffic. These gates are typically locked and only accessible by authorized personnel, ensuring security and maintaining the integrity of the closure.

Should Noble Lark Drive be permanently closed, each of these options should be evaluated further utilizing traffic engineering judgment to ensure they meet the specific needs of the area based on factors such as local traffic patterns, emergency access requirements, and community input. Imagery of the proposed permanent closers can be seen in Figures 20-23.

Figure 20 – Boulder Barricade

Figure 21 – Emergency Access Gate

Figure 22 – Partial Hammerhead Turnaround

Figure 23 – Extended Existing Rock Fence

CONCLUSION & RECOMMENDATION

Legacy Engineering Group was retained to conduct a Traffic Engineering Study for the Noble Lark Drive Closure at Dietz Elkhorn Road in Fair Oaks Ranch, TX. The study utilized the following procedures and methodology:

- Multiple Project Site Visits were conducted to observe and document existing traffic conditions.
- Travel time runs were conducted between I-10 & Fair Oaks Pkwy and Van Raub Elementary School.
- Data Collection in the form of TMCs were collected and analyzed.
- An analysis of the traffic operations and travel times at four intersections along Dietz Elkhorn Road for the Pre & Post Closure of Noble Lark Drive.
- Sim Traffic was utilized to establish queuing along the corridor.

This traffic engineering study comprehensively analyzed the existing closure and compared it with three potential alternative scenarios. The results of our analysis showed that the LOS and queues at the study intersections would decrease with the reopening of Noble Lark Drive; however, based on safety and intended roadway design, these improvements in operations would not supersede the safety risks of creating a collector roadway within a residential area. Reopening Noble Lark Drive would increase vehicle-pedestrian conflicts, raising the risk of accidents, particularly in this high pedestrian activity area. Similarly, the closure has provided a safer environment for walking, cycling, and other non-motorized transportation modes, contributing to a more sustainable and health-conscious community. Reopening the street would reduce these benefits, deterring non-motorized transport users due to increased vehicular traffic and associated safety concerns.

In conclusion, although the closure of Noble Lark Drive has created a slight increase in traffic congestion along alternative routes, the closure has provided safety benefits that far outweigh the convenience associated with a cut-through movement. Also, considering that Noble Lark Drive was designed as a local residential street, the cut-through traffic should be redirected to Collector routes that were designed accordingly (e.g., Fair Oaks Parkway, Dietz Elkhorn Road, Old Fredericksburg Road). Based on this analysis, it is our recommendation to permanently close Noble Lark Drive.

06/10/2024

Oscar Michael Garza, PE, PTOE, PTP, RSP_1
Legacy Engineering Group

APPENDIX A – TRAFFIC DATA

EXHIBIT A

Dietz Elkhorn Rd at Fair Oaks Parkway - TMC

Thu Mar 7, 2024
Full Length (7 AM-9 AM, 2 PM-6 PM)
All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1163034, Location: 29.73105, -98.642469

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US

Leg	Fair Oaks Parkway						Dietz Elkhorn Rd						Fair Oaks Parkway						Dietz Elkhorn Rd						
Direction	Southbound						Westbound						Northbound						Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2024-03-07 7:00AM	15	61	26	0	**102**	0	6	12	17	0	**35**	0	19	13	10	0	**42**	0	7	8	3	0	**18**	1	**197**
7:15AM	14	68	25	0	**107**	0	14	9	30	0	**53**	0	35	17	42	0	**94**	0	39	9	6	0	**54**	2	**308**
7:30AM	22	86	3	0	**111**	0	7	23	41	0	**71**	0	10	38	6	0	**54**	0	45	19	12	0	**76**	0	**312**
7:45AM	30	80	0	0	**110**	0	0	31	29	0	**60**	0	25	33	3	0	**61**	0	5	12	12	0	**29**	0	**260**
Hourly Total	81	295	54	0	**430**	0	27	75	117	0	**219**	0	89	101	61	0	**251**	0	96	48	33	0	**177**	3	**1077**
8:00AM	13	71	3	0	**87**	0	3	22	17	0	**42**	0	10	42	3	0	**55**	0	4	15	7	0	**26**	1	**210**
8:15AM	8	69	5	0	**82**	0	2	14	21	0	**37**	1	18	33	1	0	**52**	0	2	15	7	0	**24**	0	**195**
8:30AM	14	74	4	0	**92**	0	5	16	23	0	**44**	0	10	47	3	0	**60**	0	2	11	9	0	**22**	0	**218**
8:45AM	20	53	6	0	**79**	0	2	15	16	0	**33**	0	18	45	2	0	**65**	0	4	10	9	0	**23**	0	**200**
Hourly Total	55	267	18	0	**340**	0	12	67	77	0	**156**	1	56	167	9	0	**232**	0	12	51	32	0	**95**	1	**823**
2:00PM	17	50	0	0	**67**	0	3	15	9	0	**27**	0	15	67	0	0	**82**	0	2	5	14	0	**21**	0	**197**
2:15PM	22	65	6	0	**93**	0	6	16	16	0	**38**	0	18	58	1	0	**77**	0	1	13	18	0	**32**	0	**240**
2:30PM	18	36	5	0	**59**	0	4	14	11	0	**29**	0	21	55	7	0	**83**	0	5	13	23	0	**41**	1	**212**
2:45PM	10	49	8	0	**67**	0	4	13	16	0	**33**	0	25	68	10	0	**103**	0	6	14	18	0	**38**	1	**241**
Hourly Total	67	200	19	0	**286**	0	17	58	52	0	**127**	0	79	248	18	0	**345**	0	14	45	73	0	**132**	2	**890**
3:00PM	12	42	7	0	**61**	0	17	13	20	0	**50**	0	21	58	10	0	**89**	0	25	20	9	0	**54**	0	**254**
3:15PM	23	58	4	0	**85**	0	8	15	12	0	**35**	0	24	71	6	0	**101**	0	41	16	26	0	**83**	0	**304**
3:30PM	21	65	6	0	**92**	0	4	21	16	0	**41**	1	8	50	3	0	**61**	0	5	20	21	0	**46**	0	**240**
3:45PM	22	43	5	0	**70**	0	3	9	13	0	**25**	0	22	73	1	0	**96**	0	8	14	31	0	**53**	1	**244**
Hourly Total	78	208	22	0	**308**	0	32	58	61	0	**151**	1	75	252	20	0	**347**	0	79	70	87	0	**236**	1	**1042**
4:00PM	11	45	6	0	**62**	0	6	16	14	0	**36**	1	22	63	5	0	**90**	1	11	14	31	0	**56**	0	**244**
4:15PM	15	53	8	0	**76**	0	7	13	16	0	**36**	0	26	76	2	0	**104**	0	9	20	18	0	**47**	0	**263**
4:30PM	17	66	2	0	**85**	0	3	18	20	0	**41**	0	25	89	3	0	**117**	0	6	16	33	0	**55**	4	**298**
4:45PM	21	55	5	0	**81**	0	4	27	19	0	**50**	0	26	63	1	0	**90**	0	5	12	15	0	**32**	1	**253**
Hourly Total	64	219	21	0	**304**	0	20	74	69	0	**163**	1	99	291	11	0	**401**	1	31	62	97	0	**190**	5	**1058**
5:00PM	23	51	7	0	**81**	0	3	17	22	0	**42**	0	31	70	0	0	**101**	0	8	12	20	0	**40**	1	**264**
5:15PM	20	67	5	0	**92**	0	10	14	17	0	**41**	0	25	77	1	0	**103**	0	2	18	17	0	**37**	0	**273**
5:30PM	12	64	4	0	**80**	0	2	14	14	0	**30**	0	24	97	1	0	**122**	0	5	16	16	0	**37**	0	**269**
5:45PM	13	64	4	0	**81**	0	5	21	16	0	**42**	0	24	57	3	1	**85**	0	5	10	16	0	**31**	0	**239**
Hourly Total	68	246	20	0	**334**	0	20	66	69	0	**155**	0	104	301	5	1	**411**	0	20	56	69	0	**145**	1	**1045**
Total	413	1435	154	0	**2002**	0	128	398	445	0	**971**	3	502	1360	124	1	**1987**	1	252	332	391	0	**975**	13	**5935**
% Approach	20.6%	71.7%	7.7%	0%	**-**	-	13.2%	41.0%	45.8%	0%	**-**	-	25.3%	68.4%	6.2%	0.1%	**-**	-	25.8%	34.1%	40.1%	0%	**-**	-	-
% Total	7.0%	24.2%	2.6%	0%	**33.7%**	-	2.2%	6.7%	7.5%	0%	**16.4%**	-	8.5%	22.9%	2.1%	0%	**33.5%**	-	4.2%	5.6%	6.6%	0%	**16.4%**	-	-
Motorcycles	1	1	0	0	**2**	-	0	1	1	0	**2**	-	1	0	0	0	**1**	-	0	0	0	0	**0**	-	5
% Motorcycles	0.2%	0.1%	0%	0%	**0.1%**	-	0%	0.3%	0.2%	0%	**0.2%**	-	0.2%	0%	0%	0%	**0.1%**	-	0%	0%	0%	0%	**0%**	-	0.1%
Lights	407	1420	152	0	**1979**	-	125	388	435	0	**948**	-	498	1346	119	1	**1964**	-	249	327	384	0	**960**	-	5851
% Lights	98.5%	99.0%	98.7%	0%	**98.9%**	-	97.7%	97.5%	97.8%	0%	**97.6%**	-	99.2%	99.0%	96.0%	100%	**98.8%**	-	98.8%	98.5%	98.2%	0%	**98.5%**	-	98.6%
Single-Unit Trucks	2	9	0	0	**11**	-	2	5	2	0	**9**	-	2	9	2	0	**13**	-	1	1	7	0	**9**	-	42
% Single-Unit Trucks	0.5%	0.6%	0%	0%	**0.5%**	-	1.6%	1.3%	0.4%	0%	**0.9%**	-	0.4%	0.7%	1.6%	0%	**0.7%**	-	0.4%	0.3%	1.8%	0%	**0.9%**	-	0.7%
Articulated Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%
Buses	3	5	2	0	**10**	-	1	4	7	0	**12**	-	1	5	3	0	**9**	-	2	4	0	0	**6**	-	37
% Buses	0.7%	0.3%	1.3%	0%	**0.5%**	-	0.8%	1.0%	1.6%	0%	**1.2%**	-	0.2%	0.4%	2.4%	0%	**0.5%**	-	0.8%	1.2%	0%	0%	**0.6%**	-	0.6%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	3	-	-	-	-	-	1	-	-	-	-	-	10	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	76.9%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	3	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	23.1%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

EXHIBIT A

Dietz Elkhorn Rd at Fair Oaks Parkway - TMC
Thu Mar 7, 2024
Full Length (7 AM-9 AM, 2 PM-6 PM)
All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1163034, Location: 29.73105, -98.642469

CJ Hensch & Associates, Inc.
Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US

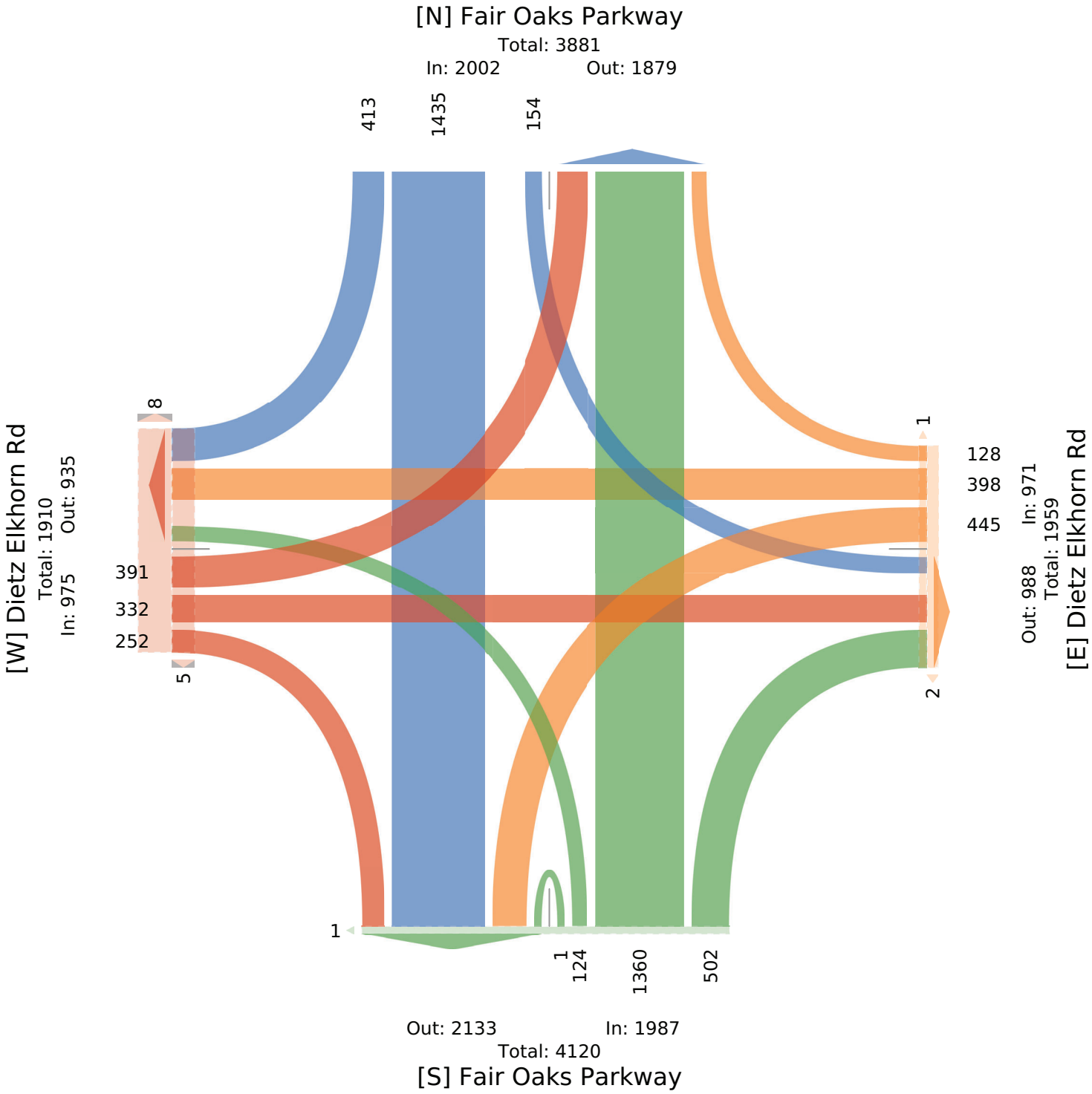

EXHIBIT A

Dietz Elkhorn Rd at Fair Oaks Parkway - TMC

Thu Mar 7, 2024

F M l Lae n7g (F M A-g (F M9 AP 6Lra)) l Lae Csur

F)) o)accLc nMsysri Si)Lc, Ukdhyc, Bkwd)LAv wkyTruiec, Frykiu)ayLmTruiec, I ucLc, l LmLcyrkawc, I ki Si)Lc swo rsccDa)e9

F)) Ms 6L: Lwyc

13 gt t . 5054, Usi aykswg28b75t 0(, A8-b 424. 8

CJ Hensch & Associates, Inc.

l rs 6kmLmJ Sgo bHbC Lwci h & F ccs i kayLc

1wi b

(2t (BSi a: srL F 6Lb

l acamLwa, TX, 77(05, v B

ULd 3 krLiyksw	Oakr Paec l areDaS Bsuyh Jsuwm						3 kLyz E)ehsrwRm WLcyJsuwm						Oakr Paec l areDaS NsryhJsuwm						3 kLyz E)ehsrwRm EacyJsuwm						
Tk L	R	T	U	v	Fpp l Lm*		R	T	U	v	Fpp l Lm*		R	T	U	v	Fpp l Lm*		R	T	U	v	Fpp l Lm*	1wy
2024A05A07 7g (F M	t 4	. -	2(	0	**t 07**	0	t 4	8	50	0	**(5**	0	5(	t 7	42	0	**84**	0	58	8	.	0	**(4**	2	**50-**
7g50F M	22	-.	5	0	**t t t**	0	7	25	4t	0	**7t**	0	t 0	5-	.	0	**(4**	0	4(	t 8	t 2	0	**7.**	0	**5t 2**
7g4(F M	50	- 0	0	0	**t t 0**	0	0	5t	28	0	**. 0**	0	2(	55	5	0	**. t**	0	(	t 2	t 2	0	**28**	0	**2. 0**
- g0 0F M	t 5	7t	5	0	**- 7**	0	5	22	t 7	0	**42**	0	t 0	42	5	0	**((**	0	4	t (	7	0	**2.**	t	**2t 0**
Tsya)	78	50(	5t	0	**4t (**	0	24	- (	t t 7	0	**22.**	0	- 0	t 50	(4	0	**2. 4**	0	85	((	57	0	**t - (**	5	**t 080**
% Fpprsai h	t 8b0%	75b(%	7b(%	0%	**A**	A	t 0b %	57b %	(t b- %	0%	**A**	A	50b5%	48b2%	20b(%	0%	**A**	A	(0b5%	28b7%	20b0%	0%	**A**	A	A
% Tsya)	7b2%	2- b0%	2b- %	0%	**5- b %**	A	2b2%	7b- %	t 0b7%	0%	**20b7%**	A	7b5%	t t b8%	(b0%	0%	**24b2%**	A	- b(%	(b0%	5b4%	0%	**t 7b0%**	A	A
l CO	0b (-	0b - 7	0b5t 0	A	**0b85(**	A	0b428	0b - (	0b7 t 5	A	**0b78.**	A	0b(7t	0b774	0b52t	A	**0b702**	A	0b(t 7	0b724	0b77t	A	**0b 08**	A	0b- 75
Msysri Si)Lc	0	0	0	0	**0**	A	0	0	t	0	**t**	A	0	0	0	0	**0**	A	0	0	0	0	**0**	A	t
% Msysri Si)Lc	0%	0%	0%	0%	**0%**	A	0%	0%	0b8%	0%	**0b4%**	A	0%	0%	0%	0%	**0%**	A	0%	0%	0%	0%	**0%**	A	0b- %
Ukdhyc	78	502	50	0	**4t t**	A	24	- 4	t t (	0	**225**	A	- 0	t 2(	(5	0	**2(-**	A	85	(2	57	0	**t - 2**	A	t 074
% Ukdhyc	t 00%	88b0%	8. b- %	0%	**88b0%**	A	t 00%	8- b- %	8- b5%	0%	**8- b7%**	A	t 00%	8. b2%	8- b- %	0%	**87b7%**	A	t 00%	84b(%	t 00%	0%	**8- b4%**	A	8- b(%
Bkwd)LAv wkyTruiec	0	t	0	0	**t**	A	0	0	0	0	**0**	A	0	5	0	0	**5**	A	0	0	0	0	**0**	A	4
% Bkwd)LAv wkyTruiec	0%	0b5%	0%	0%	**0b2%**	A	0%	0%	0%	0%	**0%**	A	0%	2b5%	0%	0%	**t b %**	A	0%	0%	0%	0%	**0%**	A	0b4%
Frykiu)ayLmTruiec	0	0	0	0	**0**	A	0	0	0	0	**0**	A	0	0	0	0	**0**	A	0	0	0	0	**0**	A	0
% Frykiu)ayLmTruiec	0%	0%	0%	0%	**0%**	A	0%	0%	0%	0%	**0%**	A	0%	0%	0%	0%	**0%**	A	0%	0%	0%	0%	**0%**	A	0%
I ucLc	0	2	t	0	**5**	A	0	t	t	0	**2**	A	0	2	t	0	**5**	A	0	5	0	0	**5**	A	t t
% I ucLc	0%	0b7%	5b2%	0%	**0b7%**	A	0%	t b2%	0b8%	0%	**0b8%**	A	0%	t b(%	t b8%	0%	**t b %**	A	0%	(b(%	0%	0%	**t b %**	A	t b0%
l LmLcyrkawc	A	A	A	A	A	0	A	A	A	A	A	0	A	A	A	A	A	0	A	A	A	A	A	5	
% l LmLcyrkawc	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	At 00%		A
I ki Si)Lc swo rsccDa)e	A	A	A	A	A	0	A	A	A	A	A	0	A	A	A	A	A	0	A	A	A	A	A	0	
% I ki Si)Lc swo rsccDa)e	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	0%	A

*l LmLcyrkawc awmI ki Si)Lc s wo rsccDa)ebUgULfy, RgRkdhy, TgThru, v gv ATurw

EXHIBIT A

Dietz Elkhorn Rd at Fair Oaks Parkway - TMC

Thu Mar 7, 2024
AM Peak (7:15 AM - 8:15 AM) - Overall Peak Hour
All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1163034, Location: 29.73105, -98.642469

CJ Hensch & Associates, Inc.
Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US

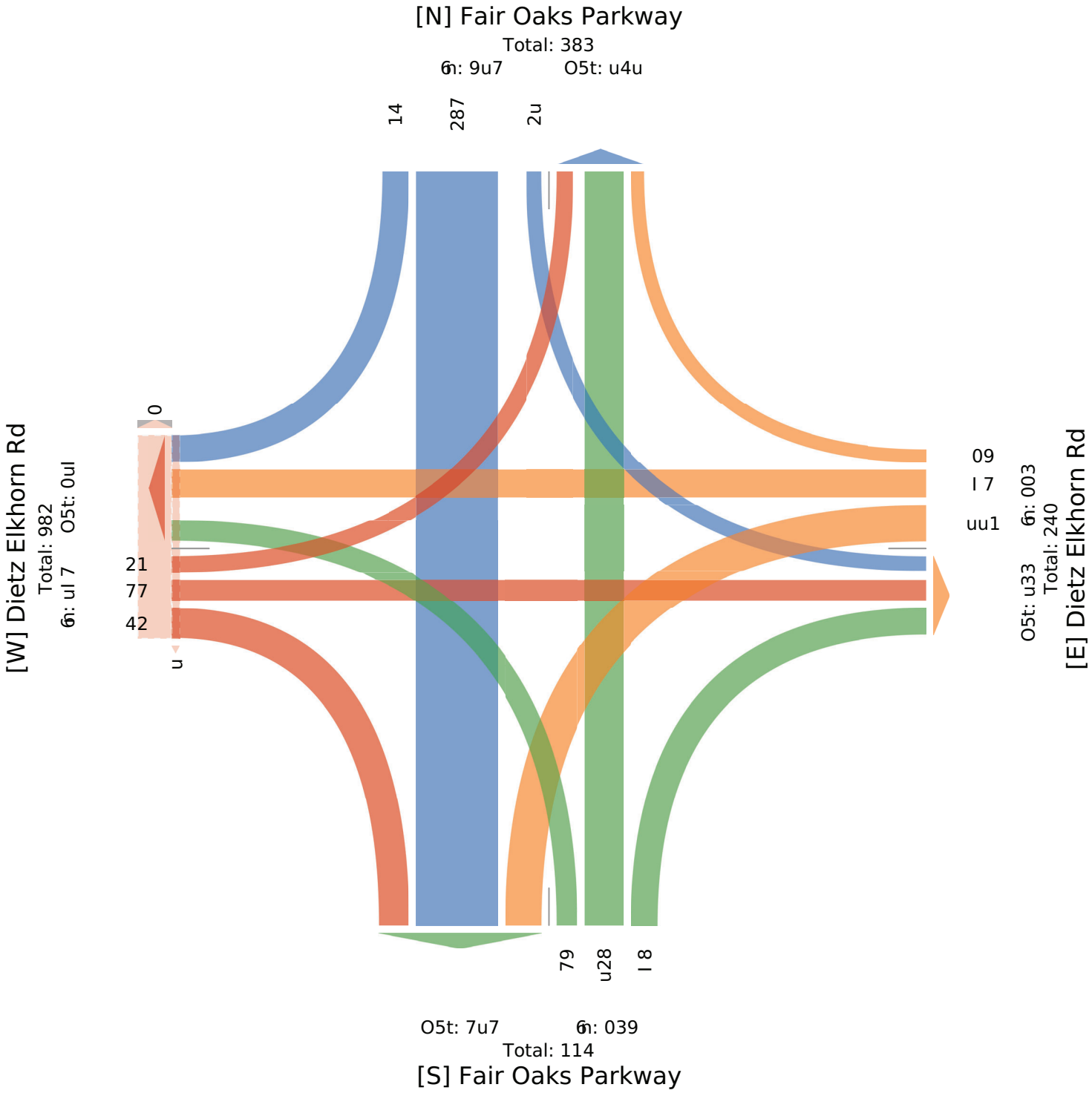

EXHIBIT A

Dietz Elkhorn Rd at Fair Oaks Parkway - TMC

Thu Mar 7, 2024
FM Fl aL e4ng0 FM t (ng0 FMA
- 99P 9a66l 6 eM) Cj rsos9l 6, c yi hC6, SyUi 9l tk UyCTrusL6, - rGysu9aCd TrusL6, Bu6l 6, Fl dl 6GcyaU6, Bysos9l 6) UP r) 66wa9LA
- 99M) vl ml UC6
IDn: : 1g0g4, c) saGy) Uh23.7g: 0(, t35.142413

CJ Henson & Associates, Inc.

Fr) vydl d 8onP . b. J l UCsh H - 66) syaCl 6
IUs.
(2: (Sosam) rl - vl .,
Fa6adl Ua, T&, 77(0g, k S

c l i Dyrl sGy) U	Xayr OaL6 FarLwao S) uCl8) uUd						DylGz E9Lh) rURd Wl 6C8) uUd						Xayr OaL6 FarLwao N) rCl8) uUd						DylGz E9Lh) rURd Ea6C8) uUd						
Tyml	R	T	c	k	- pp	Fl d*	R	T	c	k	- pp	Fl d*	R	T	c	k	- pp	Fl d*	R	T	c	k	- pp	Fl d*	IUC
2024t0gt07 4ng0FM	: 7	11	2	0	**5(**	0	g	: 5	20	0	**4:**	0	2(	53	g	0	**: : 7**	0	1	: 1	gg	0	**((**	4	**235**
4n4(FM	2:	((	(	0	**5:**	0	4	27	: 3	0	**(0**	0	21	1g	:	0	**30**	0	(	: 2	: (	0	**g2**	:	**2(g**
(n00FM	2g	(:	7	0	**5:**	0	g	: 7	22	0	**42**	0	g:	70	0	0	**: 0:**	0	5	: 2	20	0	**40**	:	**214**
(n (FM	20	17	(	0	**32**	0	: 0	: 4	: 7	0	**4:**	0	2(	77	:	0	**: 0g**	0	2	: 5	: 7	0	**g7**	0	**27g**
T) Gi9	5:	2g3	: 3	0	**gg3**	0	20	71	75	0	**: 74**	0	: 07	233	(	0	**4: :**	0	2:	(5	5(	0	**: 14**	1	**: 055**
% - ppr) ash	2g.3%	70.(%	(.1%	0%	**t**	t	: : .(%	4g.7%	44.5%	0%	**t**	t	21.0%	72.7%	: .2%	0%	**t**	t	: 2.5%	g(.4%	(: .5%	0%	**t**	t	t
% T) Gi9	7.4%	22.0%	: .7%	0%	**g: .2%**	t	: .5%	7.0%	7.2%	0%	**: 1.0%**	t	3.5%	27.(%	0.(%	0%	**g7.5%**	t	: .3%	(.g%	7.5%	0%	**: (.: %**	t	t
FJ X	0.550	0.532	0.173	t	**0.32:**	t	0.(00	0.704	0.551	t	**0.570**	t	0.51g	0.540	0.4: 7	t	**0.575**	t	0.1(1	0.501	0.144	t	**0.74(**	t	0.3: g
M) Cj rsos9l 6	:	0	0	0	**:**	t	0	:	0	0	**:**	t	0	0	0	0	**0**	t	0	0	0	0	**0**	t	2
% M) Cj rsos9l 6	: .2%	0%	0%	0%	**0.g%**	t	0%	: .g%	0%	0%	**0.1%**	t	0%	0%	0%	0%	**0%**	t	0%	0%	0%	0%	**0%**	t	0.2%
c yi hC6	77	2g5	: 3	0	**gg4**	t	: 3	7(	74	0	**: 15**	t	: 07	233	(	0	**4: :**	t	2:	(5	52	0	**: 1:**	t	: 074
% c yi hC6	3(.: %	33.1%	: 00%	0%	**35.(%**	t	3(.0%	35.7%	34.3%	0%	**31.1%**	t	: 00%	: 00%	: 00%	0%	**: 00%**	t	: 00%	: 00%	31.(%	0%	**35.2%**	t	35.7%
SyUi 9l tk UyCTrusL6	:	0	0	0	**:**	t	:	0	:	0	**2**	t	0	0	0	0	**0**	t	0	0	g	0	**g**	t	1
% SyUi 9l tk UyCTrusL6	: .2%	0%	0%	0%	**0.g%**	t	(.0%	0%	: .g%	0%	**: .: %**	t	0%	0%	0%	0%	**0%**	t	0%	0%	g.(%	0%	**: .5%**	t	0.1%
- rGysu9aCd TrusL6	0	0	0	0	**0**	t	0	0	0	0	**0**	t	0	0	0	0	**0**	t	0	0	0	0	**0**	t	0
% - rGysu9aCd TrusL6	0%	0%	0%	0%	**0%**	t	0%	0%	0%	0%	**0%**	t	0%	0%	0%	0%	**0%**	t	0%	0%	0%	0%	**0%**	t	0%
Bu6l 6	2	:	0	0	**g**	t	0	0	g	0	**g**	t	0	0	0	0	**0**	t	0	0	0	0	**0**	t	1
% Bu6l 6	2.(%	0.4%	0%	0%	**0.3%**	t	0%	0%	g.5%	0%	**: .7%**	t	0%	0%	0%	0%	**0%**	t	0%	0%	0%	0%	**0%**	t	0.1%
Fl dl 6GcyaU6	t	t	t	t	t	0	t	t	t	t	t	0	t	t	t	t	t	0	t	t	t	t	t	4	
% Fl dl 6GcyaU6	t	t	t	t	t	t	t	t	t	t	t	t	t	t	t	t	t	t	t	t	t	t	t	11.7%	t
Bysos9l 6) UP r) 66wa9L	t	t	t	t	t	0	t	t	t	t	t	0	t	t	t	t	t	0	t	t	t	t	t	2	
% Bysos9l 6) UP r) 66wa9L	t	t	t	t	t	t	t	t	t	t	t	t	t	t	t	t	t	t	t	t	t	t	t	gg.g%	t

*Fl dl 6GcyaU6 aUd Bysos9l 6) UP r) 66wa9L. c nc l fC, RnRyi hC, TnThru, k nk tTurU

EXHIBIT A

Dietz Elkhorn Rd at Fair Oaks Parkway - TMC

Thu Mar 7, 2024
PM Peak (4:30 PM - 5:30 PM)
All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1163034, Location: 29.73105, -98.642469

CJ Hensch & Associates, Inc.
Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US

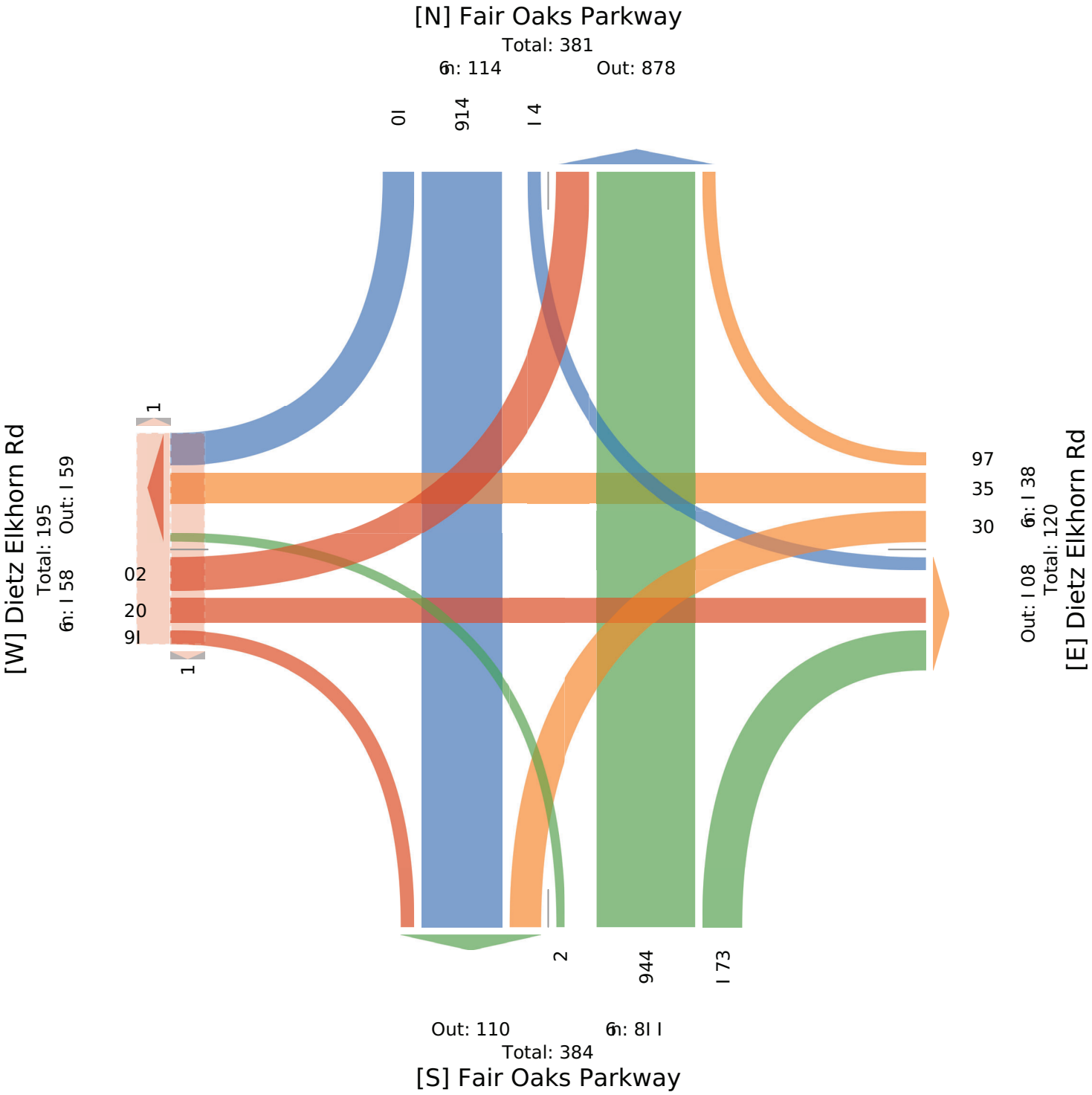

EXHIBIT A

Old Fredericksburg Rd at Dietz Elkhorn Rd - TMC

Thu Mar 7, 2024
Full Length (7 AM-9 AM, 2 PM-6 PM)
All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 116303. , Location: 295731164, -985672932

CJ Hensch & Associates, Inc.
Provided by: C5J5Hensch & Associates Inc5
. 21. Sycamore Ave5,
Pasadena, TX, 77. 03, US

Leg	Old Fredericksburg z d						DietE Rlkhorn z d						Old Fredericksburg z d						DietE Rlkhorn z d						
Direction	Southbound						Westbound						Northbound						Rastbound						
Time	z	T	L	U	**App**	Ped*	z	T	L	U	**App**	Ped*	z	T	L	U	**App**	Ped*	z	T	L	U	**App**	Ped*	**Int**
2024-03-07 7:00AM	20	0	9	0	**29**	0	6	70	1	0	**77**	0	40	.	2	0	**47**	0	2	30	4	0	**36**	0	**189**
7:1. AM	13	3	9	0	**2.**	0	3	83	0	0	**86**	0	. 8	3	0	0	**61**	0	0	. 4	13	0	**67**	1	**239**
7:30AM	11	1	10	0	**22**	0	14	103	0	0	**117**	0	19	11	1	0	**31**	0	0	16	11	0	**27**	0	**197**
7:4. AM	27	1	16	0	**44**	0	44	80	1	0	**12.**	1	10	17	1	0	**28**	0	1	9	27	0	**37**	0	**234**
Hourly Total	71	.	44	0	**120**	0	67	336	2	0	**40.**	1	127	36	4	0	**167**	0	3	109	. .	0	**167**	1	**8. 9**
8:00AM	6.	2	2.	0	**92**	0	2.	49	2	0	**76**	1	6	8	4	0	**18**	0	1	9	14	0	**24**	0	**210**
8:1. AM	29	1	12	0	**42**	0	11	4.	0	0	**. 6**	0	11	9	2	0	**22**	1	0	.	13	0	**18**	0	**138**
8:30AM	14	4	9	0	**27**	0	13	. 2	0	0	**6.**	0	13	8	4	0	**2.**	0	0	20	7	0	**27**	0	**144**
8:4. AM	9	1	19	0	**29**	0	.	46	2	0	**. 3**	0	8	2	3	0	**13**	0	0	7	7	0	**14**	1	**109**
Hourly Total	117	8	6.	0	**190**	0	. 4	192	4	0	**2. 0**	1	38	27	13	0	**78**	1	1	41	41	0	**83**	1	**601**
2:00PM	6	0	27	0	**33**	0	18	24	0	0	**42**	0	7	7	1	0	**1.**	0	0	10	7	0	**17**	0	**107**
2:1. PM	6	0	24	0	**30**	0	27	46	2	0	**7.**	0	13	1.	1	0	**29**	0	1	29	16	0	**46**	0	**180**
2:30PM	11	0	28	0	**39**	0	10	40	2	0	**. 2**	0	1.	6	1	0	**22**	0	2	40	9	0	**. 1**	0	**164**
2:4. PM	6	1	21	0	**28**	0	11	24	3	0	**38**	0	29	.	1	0	**3.**	0	0	37	12	0	**49**	0	**1. 0**
Hourly Total	29	1	100	0	**130**	0	66	134	7	0	**207**	0	64	33	4	0	**101**	0	3	116	44	0	**163**	0	**601**
3:00PM	8	2	31	0	**41**	0	10	. 0	0	0	**60**	0	16	7	1	0	**24**	0	0	29	12	0	**41**	0	**166**
3:1. PM	19	1	36	0	**. 6**	0	23	91	0	0	**114**	0	11	.	6	0	**22**	0	0	21	12	0	**33**	0	**22.**
3:30PM	17	0	26	0	**43**	0	29	. 2	2	0	**83**	0	13	9	1	0	**23**	0	0	30	20	0	**. 0**	0	**199**
3:4. PM	19	1	40	0	**60**	0	18	. 4	1	0	**73**	0	11	7	3	0	**21**	0	2	27	12	0	**41**	0	**19.**
Hourly Total	63	4	133	0	**200**	0	80	247	3	0	**330**	0	. 1	28	11	0	**90**	0	2	107	. 6	0	**16.**	0	**78.**
4:00PM	13	2	46	0	**61**	0	1.	41	1	0	**. 7**	0	16	4	2	0	**22**	0	0	20	7	0	**27**	0	**167**
4:1. PM	18	1	. .	0	**74**	0	12	3.	1	0	**48**	0	13	6	2	0	**21**	0	1	18	11	0	**30**	0	**173**
4:30PM	1.	2	33	0	**. 0**	0	18	39	0	0	**. 7**	0	16	4	0	0	**20**	0	0	1.	12	0	**27**	0	**1. 4**
4:4. PM	21	1	28	0	**. 0**	0	26	44	0	0	**70**	0	10	6	2	0	**18**	0	0	26	9	0	**3.**	0	**173**
Hourly Total	67	6	162	0	**23.**	0	71	1. 9	2	0	**232**	0	. .	20	6	0	**81**	0	1	79	39	0	**119**	0	**667**
. :00PM	18	.	3.	0	**. 8**	0	18	42	0	0	**60**	0	14	2	.	0	**21**	0	0	30	7	0	**37**	0	**176**
. :1. PM	1.	1	30	0	**46**	0	16	37	0	0	**. 3**	0	19	.	0	0	**24**	0	0	19	3	0	**22**	0	**14.**
. :30PM	10	0	31	0	**41**	0	12	3.	1	0	**48**	0	12	4	0	0	**16**	0	2	22	9	0	**33**	0	**138**
. :4. PM	9	1	34	0	**44**	0	20	2.	1	0	**46**	0	14	3	1	0	**18**	0	0	22	.	0	**27**	0	**13.**
Hourly Total	. 2	7	130	0	**189**	0	66	139	2	0	**207**	0	. 9	14	6	0	**79**	0	2	93	24	0	**119**	0	**. 94**
Total	399	31	634	0	**1064**	0	404	1207	20	0	**1631**	2	394	1. 8	44	0	**. 96**	1	12	. 4.	2. 9	0	**816**	2	**4107**
% Approach	375 %	29%	. 95%	0%	**-**	-	248%	745%	15%	0%	**-**	-	665%	265 %	75%	0%	**-**	-	15 %	665%	315%	0%	**-**	-	-
% Total	95%	03%	1. 5%	0%	**2. 9%**	-	93%	295%	05 %	0%	**395%**	-	95%	35%	15%	0%	**145 %**	-	03%	135%	65%	0%	**195%**	-	-
Motorcycles	0	0	0	0	**0**	-	0	2	0	0	**2**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	2
% Motorcycles	0%	0%	0%	0%	**0%**	-	0%	05%	0%	0%	**05%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%
Lights	390	31	622	0	**1043**	-	394	1173	20	0	**1. 87**	-	384	1. 4	43	0	**. 81**	-	12	. 36	2. 7	0	**80.**	-	4016
% Lights	975%	100%	985%	0%	**985%**	-	975 %	975%	100%	0%	**975%**	-	975 %	975 %	975%	0%	**975 %**	-	100%	985%	995%	0%	**985%**	-	975%
Single-Unit Trucks	3	0	.	0	**8**	-	4	14	0	0	**18**	-	2	2	1	0	**.**	-	0	3	1	0	**4**	-	3.
% Single-Unit Trucks	08%	0%	08%	0%	**08%**	-	10%	15%	0%	0%	**11%**	-	05 %	15%	25%	0%	**08%**	-	0%	05%	04%	0%	**05 %**	-	09%
Articulated Trucks	.	0	0	0	**.**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	.
% Articulated Trucks	15%	0%	0%	0%	**05 %**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	05%
Buses	1	0	7	0	**8**	-	6	18	0	0	**24**	-	8	2	0	0	**10**	-	0	6	1	0	**7**	-	49
% Buses	05%	0%	15%	0%	**08%**	-	15 %	15 %	0%	0%	**15 %**	-	25%	15%	0%	0%	**17%**	-	0%	15%	05%	0%	**09%**	-	15%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	1	-	-	-	-	-	2	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	- 100%	-	-	-	-	-	- 100%	-	-	-	-	-	- 100%	-	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk5L: Left, z : z ight, T: Thru, U: U-Turn

EXHIBIT A

Old Fredericksburg Rd at Dietz Elkhorn Rd - TMC
Thu Mar 7, 2024
Full Length (7 AM-9 AM, 2 PM-6 PM)
All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 116303. , Location: 295731164, -98567293 2

CJ Hensch & Associates, Inc.
Provided by: C5J5Hensch & Associates Inc5
. 21. Sycamore Ave5,
Pasadena, TX, 77. 03, US

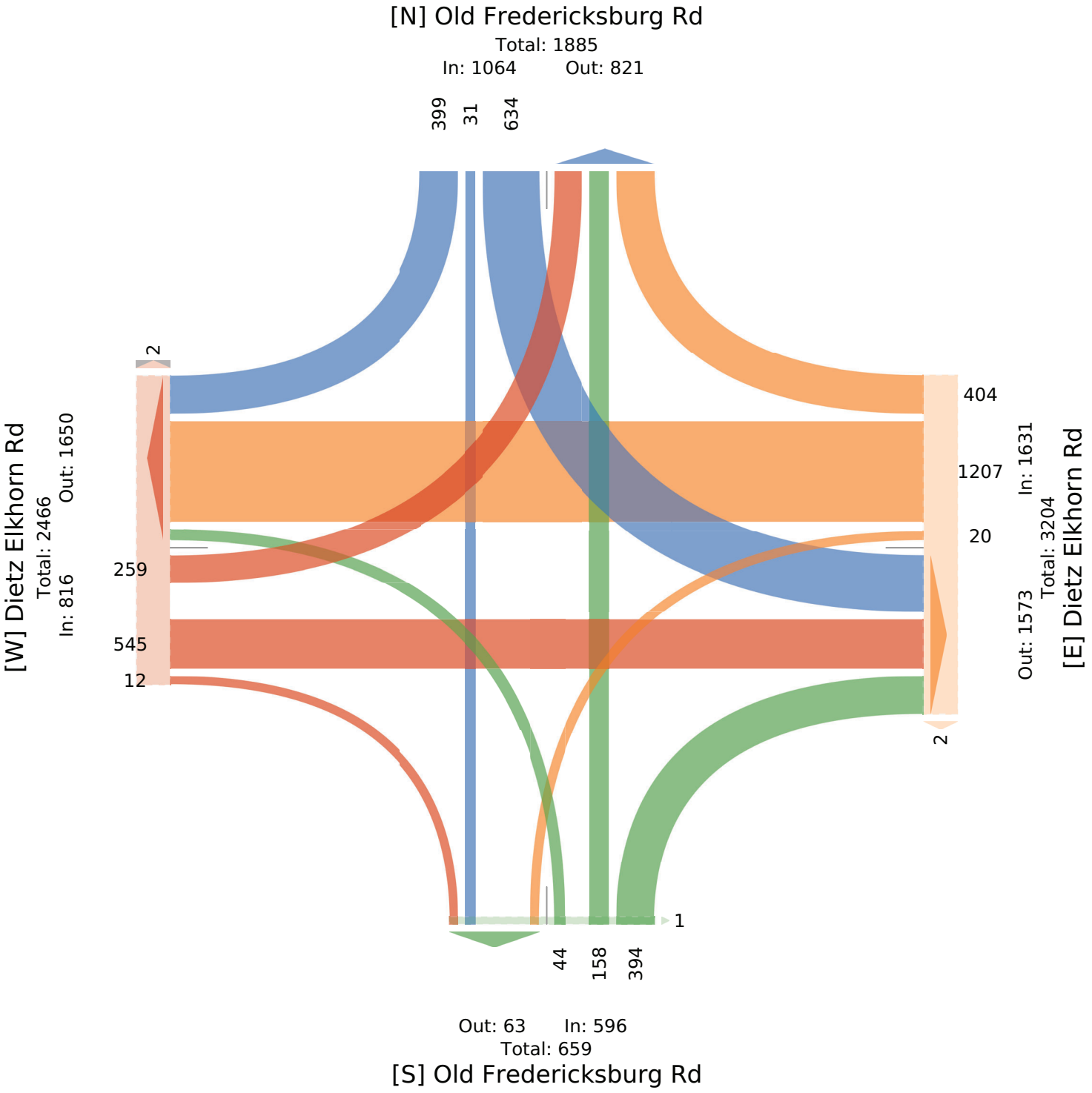

EXHIBIT A

Old Fredericksburg Rd at Dietz Elkhorn Rd - TMC

Thu Mar 7, 2024
F M l Lae n7gt (F M A- gt (F M9 AP 6Lra)) l Lae Csur
F)) o)accLc nMsysri Si)Lc, Ukdhyc, Bkwd)LAr wkyTruiec, Fryki u)ayLmTruiec, I ucLc, l LmLcyrkawc,
I ki Si)Lc swo rsccDa)e9
F)) Ms6L: Lwyc
13 gtt . 505(, Usiayksw g28b75t t . 4, A8- b 72852

CJ Henson & Associates, Inc.
l rs6kmLmJSgo bHbCLwci h & F ccsi kayLc
1wi b
(2t (BSi a: srL F 6Lb
l acamLwa, TX, 77(05, v B

ULd 3 krLiyksw	P)mOrLmLrkiecJurd z m BsuyhJsuwm						3 kLyER)ehsrwz m WLcyJsuwm						P)mOrLmLrkiecJurd z m NsryhJsuwm						3 kLyER)ehsrwz m RacyJsuwm						
Tk L	z	T	U	v	Fpp	l Lm*	z	T	U	v	Fpp	l Lm*	z	T	U	v	Fpp	l Lm*	z	T	U	v	Fpp	l Lm*	1wy
2024A05A07 7gt (F M	t 5	5	8	0	**2(**	0	5	- 5	0	0	**-.**	0	(-	5	0	0	**. t**	0	0	(4	t 5	0	**. 7**	t	**258**
7g50F M	t t	t	t 0	0	**22**	0	t 4	t 05	0	0	**t t 7**	0	t 8	t t	t	0	**5t**	0	0	t .	t t	0	**27**	0	**t 87**
7g4(F M	27	t	t .	0	**44**	0	44	- 0	t	0	**t 2(**	t	t 0	t 7	t	0	**2-**	0	t	8	27	0	**57**	0	**254**
- g00F M	. (	2	2(	0	**82**	0	2(	48	2	0	**7.**	t	.	-	4	0	**t -**	0	t	8	t 4	0	**24**	0	**2t 0**
Tsya)	t t .	7	. 0	0	**t - 5**	0	-.	5t (	5	0	**404**	2	85	58	.	0	**t 5-**	0	2	--	. (	0	**t ((**	t	**- - 0**
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% Tsya)	t 5b2%	0b▸ %	. b▸ %	0%	**20b▸ %**	A	8b▸ %	5(b▸ %	0b5%	0%	**4(b8%**	A	t 0b %	4b4%	0b7%	0%	**t (b7%**	A	0b2%	t 0b0%	7b4%	0%	**t 7b %**	A	A
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Msysri Si)Lc	0	0	0	0	**0**	A	0	0	0	0	**0**	A	0	0	0	0	**0**	A	0	0	0	0	**0**	A	0
% Msysri Si)Lc	0%	0%	0%	0%	**0%**	A	0%	0%	0%	0%	**0%**	A	0%	0%	0%	0%	**0%**	A	0%	0%	0%	0%	**0%**	A	0%
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Bkwd)LAr wkyTruiec	0	0	0	0	**0**	A	0	0	0	0	**0**	A	0	0	0	0	**0**	A	0	2	0	0	**2**	A	2
% Bkwd)LAr wkyTruiec	0%	0%	0%	0%	**0%**	A	0%	0%	0%	0%	**0%**	A	0%	0%	0%	0%	**0%**	A	0%	2b5%	0%	0%	**t b5%**	A	0b2%
Fryki u)ayLmTruiec	t	0	0	0	**t**	A	0	0	0	0	**0**	A	0	0	0	0	**0**	A	0	0	0	0	**0**	A	t
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I ki Si)Lc swo rsccDa)e	A	A	A	A	A	0	A	A	A	A	A	0	A	A	A	A	A	0	A	A	A	A	A	0	
% I ki Si)Lc swo rsccDa)e	A	A	A	A	A	A	A	A	A	A	A	0%	A	A	A	A	A	A	A	A	A	A	A	0%	A

*l LmLcyrkawc awmI ki Si)Lc swo rsccDa)ebUgULfy, z gz kdhy, TgThru, v gv ATurw

EXHIBIT A

Old Fredericksburg Rd at Dietz Elkhorn Rd - TMC

Thu Mar 7, 2024
AM Peak (7:15 AM - 8:15 AM) - Overall Peak Hour
All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1163035, Location: 29.731164, -98.672932

CJ Hensch & Associates, Inc.
Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US

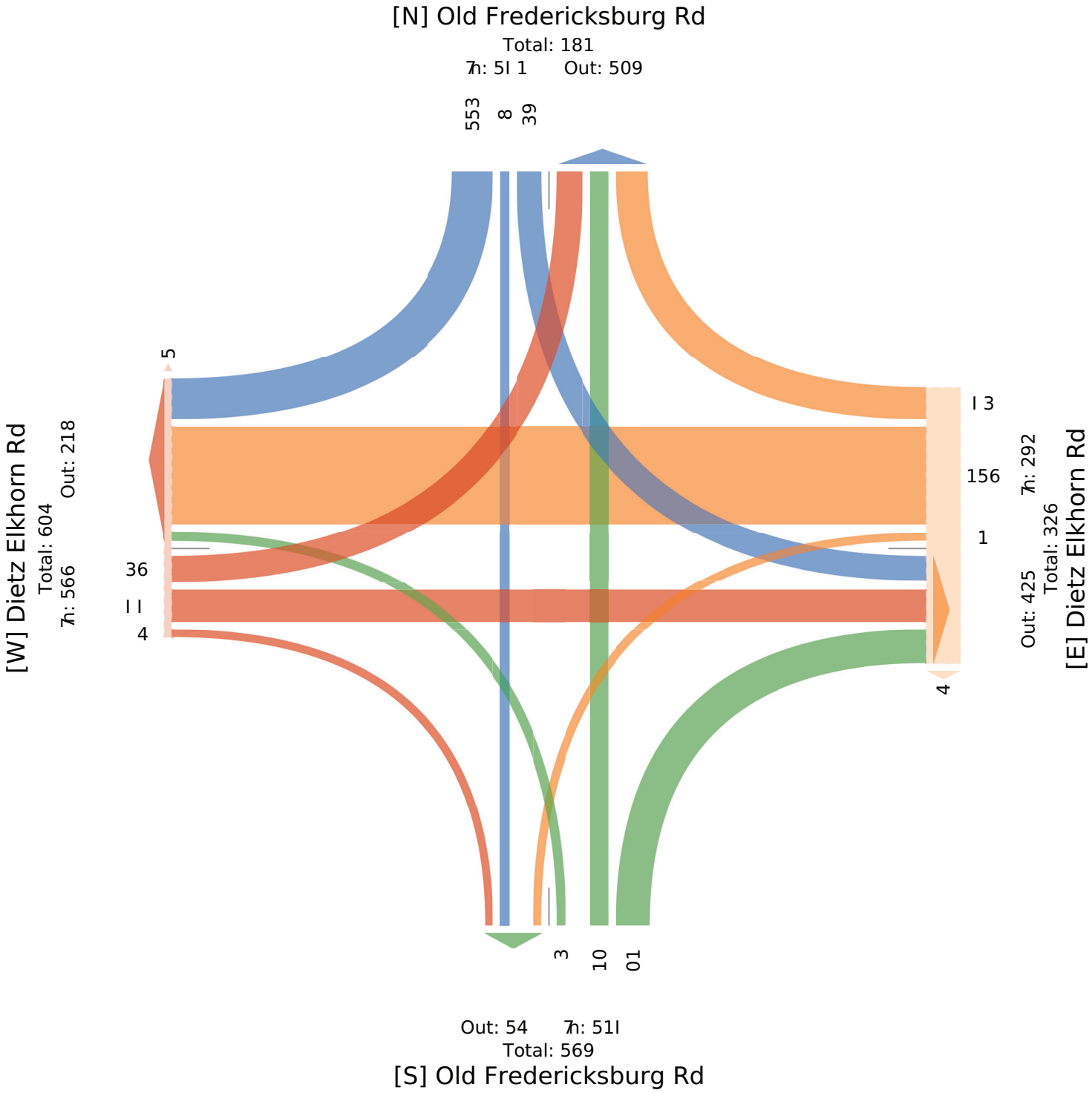

EXHIBIT A

Old Fredericksburg Rd at Dietz Elkhorn Rd - TMC

Thu Mar 7, 2024
FM Fl aL eng: (FM A4g: (FM-
9 HP6 Ra))l) eMCsCrocoH), y iShs), UikSH Al kis TruoL), 9 rsiouRasl B TruoL), wu)l), Fl Bl)sriak),
wiocoH) Ck 6 rC))v aHL-
9 HPMCml I l ks)
D: gt t 1n0n(, y CoasiCkg23.7nt t 14, A35.1723n2

CJ Henson & Associates, Inc.
FrCmiBl B8cg6 . b. J l k)oh H 9))Coiasl)
Dko.
(2t (UcoaI Crl 9 ml .,
Fa)aBl ka, T&, 77(0n, d U

yl S : irl osiCk	XHB Orl Bl rioL)8urS z B UCush8CukB						: il sERHLhCrk z B Wl)s8CukB						XHB Orl Bl rioL)8urS z B NCrsh8CukB						: il sERHLhCrk z B Ra)s8CukB						
TiI l	z	T	y	d	9 pp	Fl B*	z	T	y	d	9 pp	Fl B*	z	T	y	d	9 pp	Fl B*	z	T	y	d	9 pp	Fl B*	Dts
2024A0nA07 ng: (FM	t 3	t	n1	0	**(1**	0	2n	3t	0	0	**t t 4**	0	t t	(	1	0	**22**	0	0	2t	t 2	0	**nn**	0	**22(**
ng:n0FM	t 7	0	21	0	**4n**	0	23	(2	2	0	**5n**	0	t n	3	t	0	**2n**	0	0	n0	20	0	**(0**	0	**t 33**
ng4(FM	t 3	t	40	0	**10**	0	t 5	(4	t	0	**7n**	0	t t	7	n	0	**2t**	0	2	27	t 2	0	**4t**	0	**t 3(**
4g0FM	t n	2	41	0	**1t**	0	t (	4t	t	0	**(7**	0	t 1	4	2	0	**22**	0	0	20	7	0	**27**	0	**t 17**
TCsaP	15	4	t 45	0	**220**	0	5(	2n5	4	0	**n27**	0	(t	2(	t 2	0	**55**	0	2	35	(t	0	**t (t**	0	**751**
% 9 pprCaoh	n0.3%	t .5%	17.n%	0%	**A**	A	21.0%	72.5%	t .2%	0%	**A**	A	(5.0%	25.4%	t n.1%	0%	**A**	A	t .n%	14.3%	nn.5%	0%	**A**	A	A
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MCsCrocoH)	0	0	0	0	**0**	A	0	0	0	0	**0**	A	0	0	0	0	**0**	A	0	0	0	0	**0**	A	0
% MCsCrocoH)	0%	0%	0%	0%	**0%**	A	0%	0%	0%	0%	**0%**	A	0%	0%	0%	0%	**0%**	A	0%	0%	0%	0%	**0%**	A	0%
yiShs)	15	4	t 45	0	**220**	A	5n	2nt	4	0	**nt 5**	A	(0	22	t 2	0	**54**	A	2	34	(0	0	**t 41**	A	715
% yiShs)	t 00%	t 00%	t 00%	0%	**t 00%**	A	37.1%	37.t %	t 00%	0%	**37.2%**	A	35.0%	55.0%	t 00%	0%	**3(.(%**	A	t 00%	3(.3%	35.0%	0%	**31.7%**	A	37.7%
UikSH Al kis TruoL)	0	0	0	0	**0**	A	t	(	0	0	**1**	A	t	2	0	0	**n**	A	0	t	t	0	**2**	A	t t
% UikSH Al kis TruoL)	0%	0%	0%	0%	**0%**	A	t .2%	2.t %	0%	0%	**t .5%**	A	2.0%	5.0%	0%	0%	**n.4%**	A	0%	t .0%	2.0%	0%	**t .n%**	A	t .4%
9 rsiouRasl B TruoL)	0	0	0	0	**0**	A	0	0	0	0	**0**	A	0	0	0	0	**0**	A	0	0	0	0	**0**	A	0
% 9 rsiouRasl B TruoL)	0%	0%	0%	0%	**0%**	A	0%	0%	0%	0%	**0%**	A	0%	0%	0%	0%	**0%**	A	0%	0%	0%	0%	**0%**	A	0%
wu)l)	0	0	0	0	**0**	A	t	2	0	0	**n**	A	0	t	0	0	**t**	A	0	n	0	0	**n**	A	7
% wu)l)	0%	0%	0%	0%	**0%**	A	t .2%	0.5%	0%	0%	**0.3%**	A	0%	4.0%	0%	0%	**t .t %**	A	0%	n.t %	0%	0%	**2.0%**	A	0.3%
Fl Bl)sriak)	A	A	A	A	A	0	A	A	A	A	A	0	A	A	A	A	A	0	A	A	A	A	A	0	
% Fl Bl)sriak)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
wiocoH) Ck 6 rC))v aHL	A	A	A	A	A	0	A	A	A	A	A	0	A	A	A	A	A	0	A	A	A	A	A	0	
% wiocoH) Ck 6 rC))v aHL	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A

*Fl Bl)sriak) akB wiocoH) Ck 6 rC))v aHL. y gyl fs, z gz iShs, TgThru, d gd ATurk

EXHIBIT A

Old Fredericksburg Rd at Dietz Elkhorn Rd - TMC

Thu Mar 7, 2024
PM Peak (: 3- 5 PM) 43- 5 PMA
l CCs GaooeO (Mt ct ryLyCeo, i gShco, ngLSCe)d Ugc Truyko, l rcgyuGaceB Truyko, wuoeo, PeBeocgaUo,
wgyLyCeo t Us rt oov aCkA
l CCMt meI eUco
D1 3- - 6: 0: 5, i t yacgt U329.7: - - 64,)98.6729: 2

CJ Hensch Associates, Inc.
Prt mgBeB bL3s . J. HeUoyh &
l oot ygaceo DUy.
52- 5 nLyaI t re l me.,
PaoaBeUa, TX, 7750: , d n

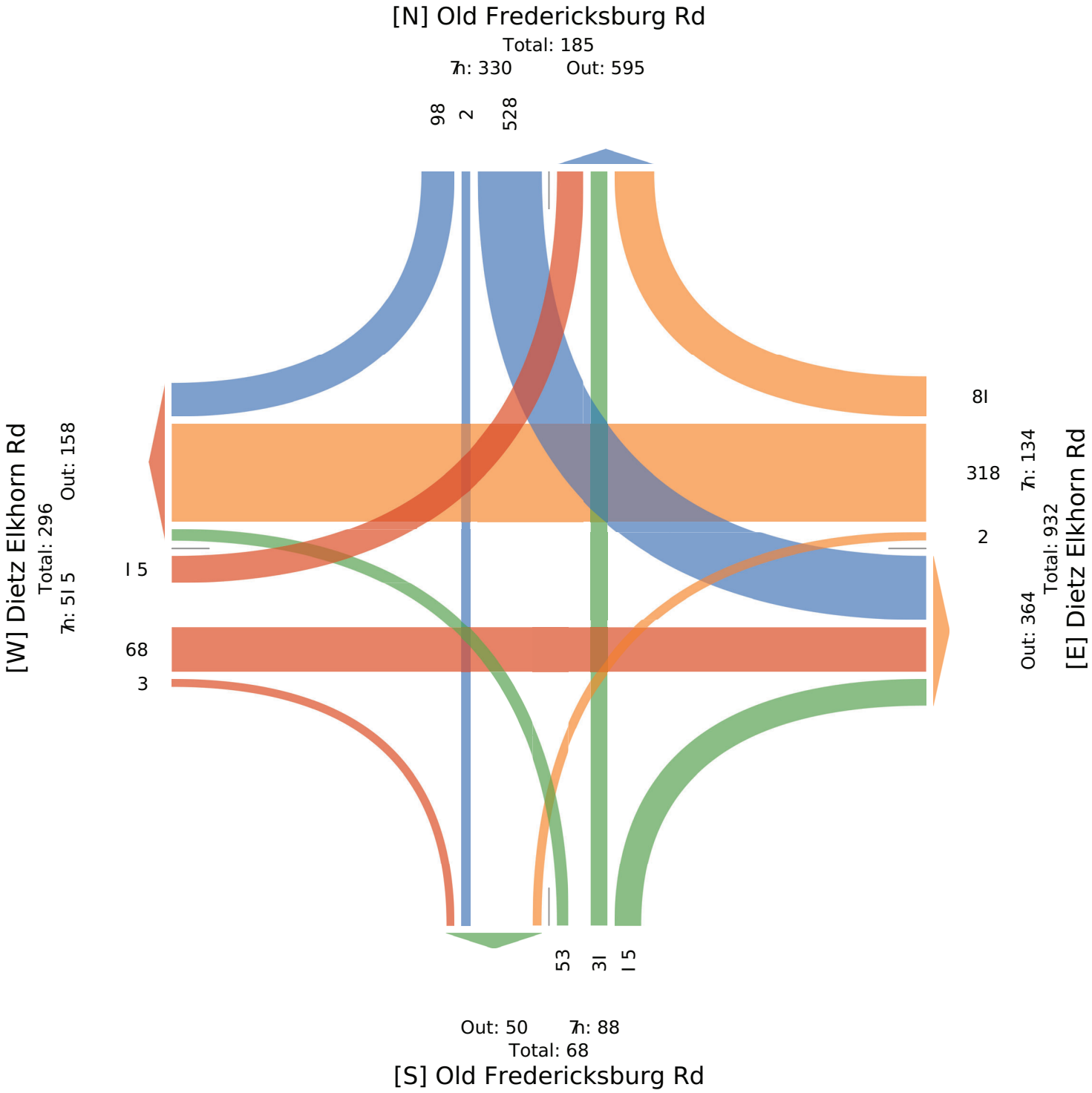

EXHIBIT A

Dietz Elkhorn Rd at Elkhorn Ridge/Square Gate - TMC

Thu Mar 7, 2024
Full Length (7 AM-9 AM, 2 PM-6 PM)
All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1163036, Location: 29.731127, -98.661353

Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US

Leg	Elkhorn Ridge						Dietz Elkhorn Rd						Square Gate						Dietz Elkhorn Rd						
Direction	Southbound						Westbound						Northbound						Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2024-03-07 7:00AM	8	0	7	0	**15**	0	4	54	7	0	**65**	0	20	0	1	0	**21**	0	0	74	5	0	**79**	0	**180**
7:15AM	8	0	21	0	**29**	0	8	79	14	0	**101**	0	42	0	2	0	**44**	8	2	102	8	0	**112**	8	**286**
7:30AM	6	2	7	0	**15**	0	7	99	16	0	**122**	0	15	1	4	0	**20**	1	2	52	13	0	**67**	1	**224**
7:45AM	8	0	3	0	**11**	0	2	87	0	0	**89**	0	2	1	2	0	**5**	2	1	25	6	0	**32**	2	**137**
Hourly Total	30	2	38	0	**70**	0	21	319	37	0	**377**	0	79	2	9	0	**90**	11	5	253	32	0	**290**	11	**827**
8:00AM	9	1	1	0	**11**	0	1	40	2	0	**43**	0	1	1	1	0	**3**	0	2	27	6	0	**35**	0	**92**
8:15AM	5	1	2	0	**8**	0	0	25	2	0	**27**	0	0	1	4	0	**5**	0	3	20	8	0	**31**	0	**71**
8:30AM	9	1	1	0	**11**	0	3	32	0	0	**35**	0	1	0	1	0	**2**	2	3	23	12	0	**38**	2	**86**
8:45AM	6	0	4	0	**10**	0	5	32	0	0	**37**	0	2	0	1	0	**3**	0	1	20	9	0	**30**	0	**80**
Hourly Total	29	3	8	0	**40**	0	9	129	4	0	**142**	0	4	2	7	0	**13**	2	9	90	35	0	**134**	2	**329**
2:00PM	4	1	1	0	**6**	0	2	26	0	0	**28**	0	2	0	0	0	**2**	0	6	27	8	0	**41**	0	**77**
2:15PM	10	1	3	0	**14**	0	1	44	3	0	**48**	0	3	1	4	0	**8**	0	3	35	12	0	**50**	0	**120**
2:30PM	3	0	1	1	**5**	0	1	30	2	0	**33**	0	3	0	0	0	**3**	0	1	58	14	0	**73**	0	**114**
2:45PM	8	4	5	0	**17**	0	2	22	3	0	**27**	0	4	0	0	0	**4**	0	1	78	8	0	**87**	1	**135**
Hourly Total	25	6	10	1	**42**	0	6	122	8	0	**136**	0	12	1	4	0	**17**	0	11	198	42	0	**251**	1	**446**
3:00PM	7	3	9	1	**20**	0	5	49	10	0	**64**	0	12	4	4	0	**20**	10	5	56	7	0	**68**	10	**172**
3:15PM	3	1	0	0	**4**	0	12	93	9	0	**114**	0	2	1	2	0	**5**	0	1	48	11	0	**60**	0	**183**
3:30PM	8	1	2	0	**11**	0	4	67	6	0	**77**	0	4	1	2	0	**7**	0	0	52	14	0	**66**	0	**161**
3:45PM	10	2	6	0	**18**	0	2	48	5	0	**55**	0	2	1	5	0	**8**	0	3	49	9	0	**61**	0	**142**
Hourly Total	28	7	17	1	**53**	0	23	257	30	0	**310**	0	20	7	13	0	**40**	10	9	205	41	0	**255**	10	**658**
4:00PM	5	4	2	0	**11**	0	2	34	2	0	**38**	0	1	0	1	0	**2**	1	2	51	12	0	**65**	2	**116**
4:15PM	3	0	5	0	**8**	0	3	33	1	0	**37**	0	3	1	4	0	**8**	1	1	52	16	0	**69**	1	**122**
4:30PM	4	0	4	0	**8**	0	6	37	3	0	**46**	0	3	1	1	0	**5**	1	1	43	17	0	**61**	1	**120**
4:45PM	8	1	2	0	**11**	0	3	56	5	0	**64**	0	2	1	2	0	**5**	1	5	33	14	0	**52**	1	**132**
Hourly Total	20	5	13	0	**38**	0	14	160	11	0	**185**	0	9	3	8	0	**20**	4	9	179	59	0	**247**	5	**490**
5:00PM	4	2	1	0	**7**	0	4	38	5	0	**47**	0	3	0	3	0	**6**	0	2	39	19	0	**60**	3	**120**
5:15PM	6	3	1	0	**10**	0	4	37	1	0	**42**	0	1	1	2	0	**4**	0	3	49	15	0	**67**	0	**123**
5:30PM	3	2	3	0	**8**	0	2	32	0	0	**34**	0	3	1	2	0	**6**	0	4	33	12	0	**49**	0	**97**
5:45PM	7	3	1	0	**11**	0	2	28	5	0	**35**	0	2	0	0	0	**2**	0	3	27	20	0	**50**	0	**98**
Hourly Total	20	10	6	0	**36**	0	12	135	11	0	**158**	0	9	2	7	0	**18**	0	12	148	66	0	**226**	3	**438**
Total	152	33	92	2	**279**	0	85	1122	101	0	**1308**	0	133	17	48	0	**198**	27	55	1073	275	0	**1403**	32	**3188**
% Approach	54.5%	11.8%	33.0%	0.7%	**-**	-	6.5%	85.8%	7.7%	0%	**-**	-	67.2%	8.6%	24.2%	0%	**-**	-	3.9%	76.5%	19.6%	0%	**-**	-	-
% Total	4.8%	1.0%	2.9%	0.1%	**8.8%**	-	2.7%	35.2%	3.2%	0%	**41.0%**	-	4.2%	0.5%	1.5%	0%	**6.2%**	-	1.7%	33.7%	8.6%	0%	**44.0%**	-	-
Motorcycles	0	0	0	0	**0**	-	0	2	1	0	**3**	-	0	0	0	0	**0**	-	1	0	0	0	**1**	-	4
% Motorcycles	0%	0%	0%	0%	**0%**	-	0%	0.2%	1.0%	0%	**0.2%**	-	0%	0%	0%	0%	**0%**	-	1.8%	0%	0%	0%	**0.1%**	-	0.1%
Lights	148	33	92	2	**275**	-	82	1095	100	0	**1277**	-	131	15	46	0	**192**	-	53	1050	270	0	**1373**	-	3117
% Lights	97.4%	100%	100%	100%	**98.6%**	-	96.5%	97.6%	99.0%	0%	**97.6%**	-	98.5%	88.2%	95.8%	0%	**97.0%**	-	96.4%	97.9%	98.2%	0%	**97.9%**	-	97.8%
Single-Unit Trucks	2	0	0	0	**2**	-	3	8	0	0	**11**	-	1	0	0	0	**1**	-	1	7	3	0	**11**	-	25
% Single-Unit Trucks	1.3%	0%	0%	0%	**0.7%**	-	3.5%	0.7%	0%	0%	**0.8%**	-	0.8%	0%	0%	0%	**0.5%**	-	1.8%	0.7%	1.1%	0%	**0.8%**	-	0.8%
Articulated Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%
Buses	2	0	0	0	**2**	-	0	17	0	0	**17**	-	1	2	2	0	**5**	-	0	16	2	0	**18**	-	42
% Buses	1.3%	0%	0%	0%	**0.7%**	-	0%	1.5%	0%	0%	**1.3%**	-	0.8%	11.8%	4.2%	0%	**2.5%**	-	0%	1.5%	0.7%	0%	**1.3%**	-	1.3%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	26	-	-	-	-	-	30	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	96.3%	-	-	-	-	-	93.8%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	2	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.7%	-	-	-	-	-	6.3%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

EXHIBIT A

Dietz Elkhorn Rd at Elkhorn Ridge/Square Gate - TMC

Thu Mar 7, 2024
Full Length (7 AM-9 AM, 2 PM-6 PM)
All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1163036, Location: 29.731127, -95.661383

Provided by: C. J. Hensch & Associates Inc.
8218 Sycamore Ave.,
Pasadena, TX, 77803, US

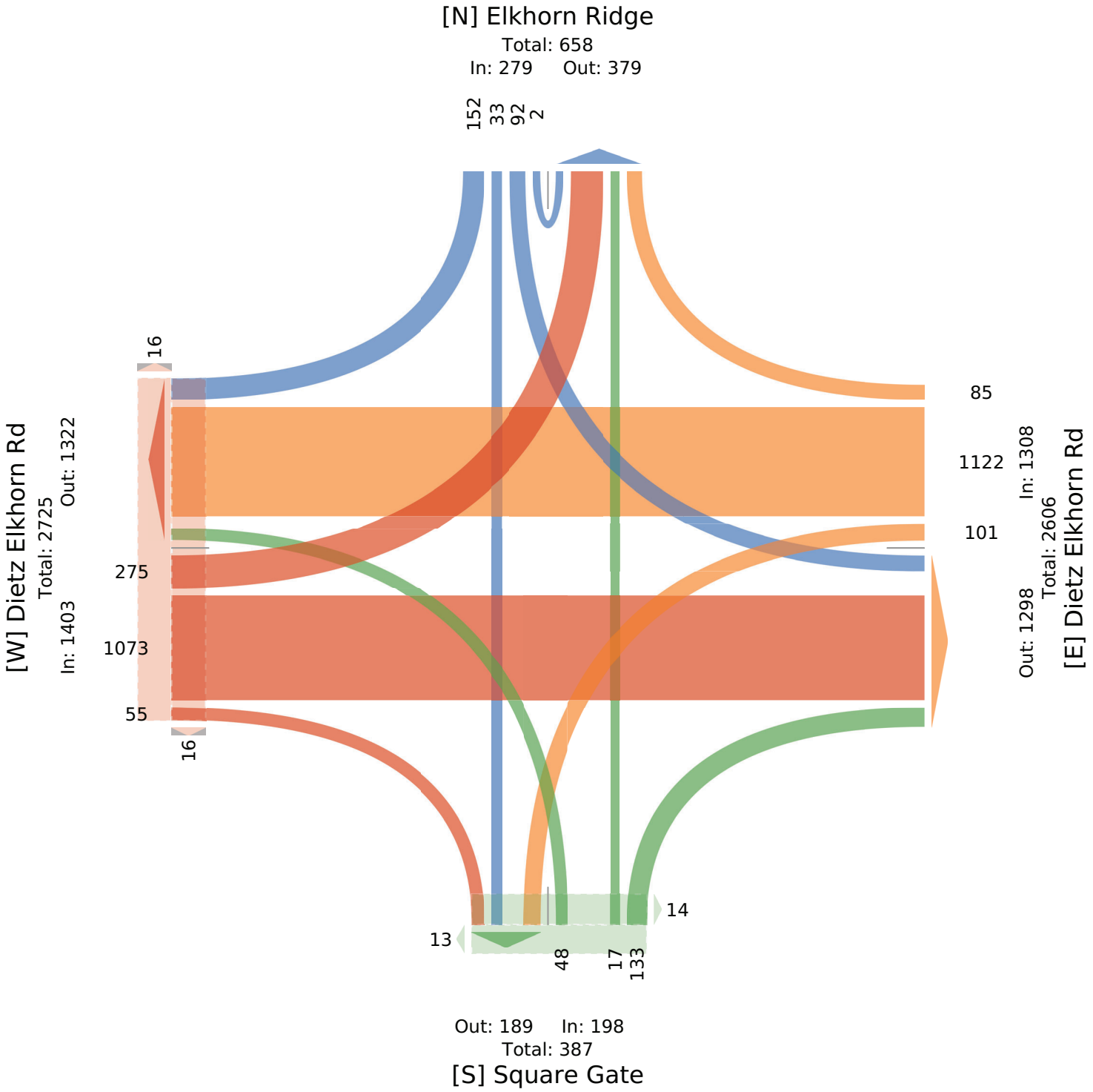

EXHIBIT A

Dietz Elkhorn Rd at Elkhorn Ridge/Square Gate - TMC

Thu Mar 7, 2024
AM Peak (7 AM - 8 AM) - Overall Peak Hour
All Classes (Motorcycles, Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1163036, Location: 29.731127, -98.661353

CJ Hensch & Associates, Inc.
Provided by: C. J. Hensch & Associates Inc.
5215 Sycamore Ave.,
Pasadena, TX, 77503, US

Leg	Elkhorn Ridge						Dietz Elkhorn Rd						Square Gate						Dietz Elkhorn Rd						
Direction	Southbound						Westbound						Northbound						Eastbound						
Time	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	R	T	L	U	**App**	Ped*	**Int**
2024-03-07 7:00AM	8	0	7	0	**15**	0	4	54	7	0	**65**	0	20	0	1	0	**21**	0	0	74	5	0	**79**	0	**180**
7:15AM	8	0	21	0	**29**	0	8	79	14	0	**101**	0	42	0	2	0	**44**	8	2	102	8	0	**112**	8	**286**
7:30AM	6	2	7	0	**15**	0	7	99	16	0	**122**	0	15	1	4	0	**20**	1	2	52	13	0	**67**	1	**224**
7:45AM	8	0	3	0	**11**	0	2	87	0	0	**89**	0	2	1	2	0	**5**	2	1	25	6	0	**32**	2	**137**
Total	30	2	38	0	**70**	0	21	319	37	0	**377**	0	79	2	9	0	**90**	11	5	253	32	0	**290**	11	**827**
% Approach	42.9%	2.9%	54.3%	0%	**-**	-	5.6%	84.6%	9.8%	0%	**-**	-	87.8%	2.2%	10.0%	0%	**-**	-	1.7%	87.2%	11.0%	0%	**-**	-	-
% Total	3.6%	0.2%	4.6%	0%	**8.5%**	-	2.5%	38.6%	4.5%	0%	**45.6%**	-	9.6%	0.2%	1.1%	0%	**10.9%**	-	0.6%	30.6%	3.9%	0%	**35.1%**	-	-
PHF	0.938	0.250	0.452	-	**0.603**	-	0.656	0.806	0.578	-	**0.773**	-	0.470	0.500	0.563	-	**0.511**	-	0.625	0.620	0.615	-	**0.647**	-	0.723
Motorcycles	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0
% Motorcycles	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%
Lights	29	2	38	0	**69**	-	20	314	37	0	**371**	-	77	1	8	0	**86**	-	5	247	30	0	**282**	-	808
% Lights	96.7%	100%	100%	0%	**98.6%**	-	95.2%	98.4%	100%	0%	**98.4%**	-	97.5%	50.0%	88.9%	0%	**95.6%**	-	100%	97.6%	93.8%	0%	**97.2%**	-	97.7%
Single-Unit Trucks	1	0	0	0	**1**	-	1	0	0	0	**1**	-	1	0	0	0	**1**	-	0	1	1	0	**2**	-	5
% Single-Unit Trucks	3.3%	0%	0%	0%	**1.4%**	-	4.8%	0%	0%	0%	**0.3%**	-	1.3%	0%	0%	0%	**1.1%**	-	0%	0.4%	3.1%	0%	**0.7%**	-	0.6%
Articulated Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%
Buses	0	0	0	0	**0**	-	0	5	0	0	**5**	-	1	1	1	0	**3**	-	0	5	1	0	**6**	-	14
% Buses	0%	0%	0%	0%	**0%**	-	0%	1.6%	0%	0%	**1.3%**	-	1.3%	50.0%	11.1%	0%	**3.3%**	-	0%	2.0%	3.1%	0%	**2.1%**	-	1.7%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	10	-	-	-	-	-	10	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	90.9%	-	-	-	-	-	90.9%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	1	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9.1%	-	-	-	-	-	9.1%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

EXHIBIT A

Dietz Elkhorn Rd at Elkhorn Ridge/Square Gate - TMC

Thu Mar 7, 2024
AM Peak (7 AM : 1 AM5: - 8era)) Peak Ovur
A)) l)aHHeH(MvovrCs C)eH, t cyhdH, Lci y)e:g i coTruCkH, ArocCu)aceS TruCkH, n uHeH, PeSeHrcai H,
n cCs C)eHvi l rvHHUa)k5
A)) Mv8ed ei dH
BwmI I D606D, t vCaocvi m2397 6I I 27, :319DDI 6. 6

CJ Hensch & Associates, Inc.
Prv8cSeS bs ml 9J9Oei HCh &
AHHvCcaceHB C9
. 2I . LsCad vre A8e9,
PaHaSei a, TX, 77. 06, g L

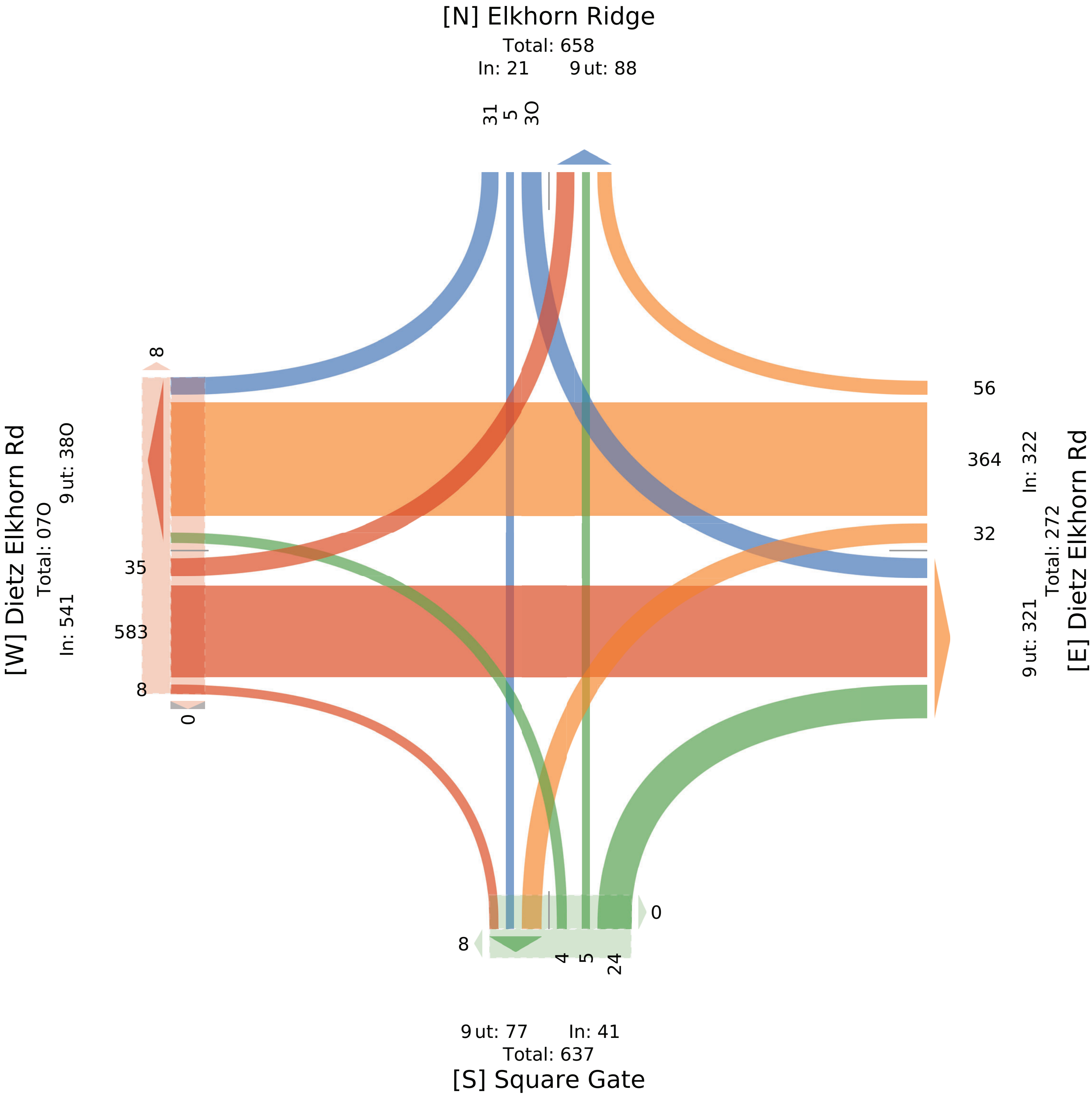

EXHIBIT A

Item #9.

Dietz Elkhorn Rd at Elkhorn Ridge/Square Gate - TMC

Thu Mar 7, 2024
FM Fl aL en FM g 4 FMt
(AA- Aa99l 9 eMP6Pr) C) A19, s och69, yoi cAgS i o6Tru) L9, (r6o) uAa6l UTru) L9, k u9l 9, Fl Ul 96roai 9,
k o) C) A19 Pi - rP99d aALt
(AAMPBl wl i 69
vmI DD: n0n: , s P) a6Pi I 2137nDD27, g1. 3 : Dn8n

CJ Hensch & Associates, Inc.
FrPBdUl U5CI - 3b3J l i 9) h H (99P) oa6l 9
vi) 3
82D8 yC) awPrl (Bl 3,
Fa9aUl i a, T&, 7780n, S y

s l c	XALhPri EdUcl						md 6R XALhPri EU						yzuarl q a6l						md 6R XALhPri EU						
mcrl) 6Pi	yPu6h5Pui U						G l 965Pui U						WPr6h5Pui U						Xa965Pui U						
Towl	E	T	s	S	(NN	Fl Up	E	T	s	S	(NN	Fl Up	E	T	s	S	(NN	Fl Up	E	T	s	S	(NN	Fl Up	vi 6
2024g0ng07 nI00FM	7	n	1	D	**20**	0	8	41	D0	0	**: 4**	0	D2	4	4	0	**20**	D0	8	8:	7	0	**: .**	D0	**D72**
nID8FM	n	D	0	0	**4**	0	D2	1n	1	0	**DD4**	0	2	D	2	0	**8**	0	D	4.	DD	0	**: 0**	0	**D n**
nIn0FM	.	D	2	0	**DD**	0	4	: 7	:	0	**77**	0	4	D	2	0	**7**	0	0	82	D4	0	**: :**	0	**D D**
nI48FM	D0	2	:	0	**D.**	0	2	4.	8	0	**88**	0	2	D	8	0	**.**	0	n	41	1	0	**: D**	0	**D42**
TP6aA	2.	7	D7	D	**8n**	0	2n	287	n0	0	**nD0**	0	20	7	Dn	0	**40**	D0	1	208	4D	0	**288**	D0	**: 8.**
*** (NN-Pa) h**	823 *	Dn32*	n23D*	D81*	**g**	g	734*	. 231*	137*	0*	**g**	g	8030*	D738*	n238*	0*	**g**	g	n38*	. 034*	D. 3D*	0*	**g**	g	g
*** TP6aA**	43n*	D8D*	23 *	032*	**. 3D***	g	n38*	n13D*	43 *	0*	**473D***	g	n30*	D8D*	230*	0*	**: 3D***	g	D84*	nD82*	: 32*	0*	**n. 3 ***	g	g
FJ %	03700	038. n	03472	03280	**03 : n**	g	03471	03 1D	03780	g	**03 . 0**	g	034D7	034n.	03 80	g	**03800**	g	03480	031D8	037n2	g	**031n.**	g	03 11
MP6Pr) C) A19	0	0	0	0	**0**	g	0	0	D	0	**D**	g	0	0	0	0	**0**	g	0	0	0	0	**0**	g	D
*** MP6Pr) C) A19**	0*	0*	0*	0*	**0***	g	0*	0*	n3n*	0*	**03n***	g	0*	0*	0*	0*	**0***	g	0*	0*	0*	0*	**0***	g	032*
s och69	27	7	D7	D	**82**	g	22	241	21	0	**n00**	g	20	7	Dn	0	**40**	g	1	20n	n1	0	**28D**	g	: 4n
*** s och69**	1: 34*	D00*	D00*	D00*	**1. 3D***	g	1837*	1: 31*	1: 37*	0*	**1: 3 ***	g	D00*	D00*	D00*	0*	**D00***	g	D00*	1130*	183D*	0*	**1. 34***	g	1737*
yoi cAgS i o6Tru) L9	D	0	0	0	**D**	g	D	D	0	0	**2**	g	0	0	0	0	**0**	g	0	0	2	0	**2**	g	8
*** yoi cAgS i o6Tru) L9**	n3 *	0*	0*	0*	**D81***	g	43n*	034*	0*	0*	**03 ***	g	0*	0*	0*	0*	**0***	g	0*	0*	431*	0*	**03 ***	g	03 *
(r6o) uAa6l UTru) L9	0	0	0	0	**0**	g	0	0	0	0	**0**	g	0	0	0	0	**0**	g	0	0	0	0	**0**	g	0
*** (r6o) uAa6l UTru) L9**	0*	0*	0*	0*	**0***	g	0*	0*	0*	0*	**0***	g	0*	0*	0*	0*	**0***	g	0*	0*	0*	0*	**0***	g	0*
k u9l 9	0	0	0	0	**0**	g	0	7	0	0	**7**	g	0	0	0	0	**0**	g	0	2	0	0	**2**	g	1
*** k u9l 9**	0*	0*	0*	0*	**0***	g	0*	237*	0*	0*	**23n***	g	0*	0*	0*	0*	**0***	g	0*	D80*	0*	0*	**03 ***	g	D84*
Fl Ul 96roai 9	g	g	g	g	g	0	g	g	g	g	g	0	g	g	g	g	g	D0	g	g	g	g	g	D0	
* Fl Ul 96roai 9	g	g	g	g	g	g	g	g	g	g	g	g	g	g	g	g	g	D00*	g	g	g	g	g	D00*	g
k o) C) A19 Pi - rP99d aAL	g	g	g	g	g	0	g	g	g	g	g	0	g	g	g	g	g	0	g	g	g	g	g	0	
* k o) C) A19 Pi - rP99d aAL	g	g	g	g	g	g	g	g	g	g	g	g	g	g	g	g	g	0*	g	g	g	g	g	0*	g

[P] Fl Ul 96roai 9 ai Uk o) C) A19 Pi - rP99d aAL3s I s l f6, EI Eoch6, TI Thru, S I S gTuri

EXHIBIT A

Dietz Elkhorn Rd at Elkhorn Ridge/Square Gate - TMC

Thu Mar 7, 2024
PM Peak (: PM 34 PM-
5)) A)allel (MCsCrot o)el, c yLhsl, i ygL)e3S gys Truokl, 5 rsyou)asen Truokl, Uulel, Penelsryagl,
Uyot o)el Cg ArCl1d a)k-
5)) MCBewegsl
vmI DD1: 0: 1, c CoasyCgI 2697: DD27, 36. 911D: 8:

CJ Henson & Associates, Inc.
PrCBynen bt I A9J9Hegl oh &
5 llCoyasel vgo9
82D8 i t oawCre 5 Be9
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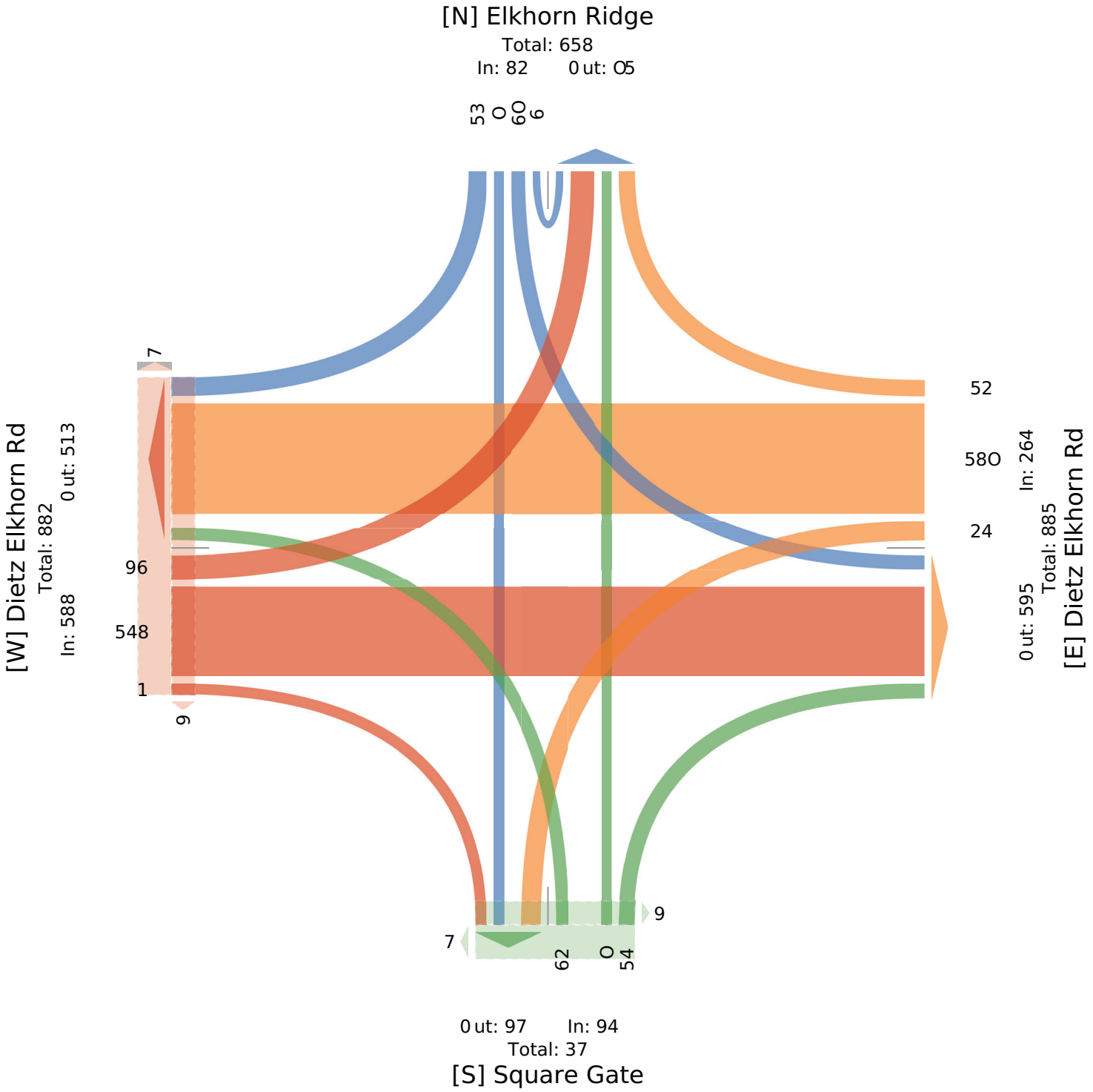


APPENDIX B – SIM TRAFFIC QUEUEING REPORTS

Queuing and Blocking Report
Baseline

05/28/2024

Intersection: 1: Old Fredricksburg Road & Dietz Elkhorn Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	388	423	195	226
Average Queue (ft)	138	245	99	83
95th Queue (ft)	283	355	169	189
Link Distance (ft)	2014	3576	1634	926
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Square Gate/Elkhorn Ridge & Dietz Elkhorn Road

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	LT	R
Maximum Queue (ft)	1188	712	54	98	53	50
Average Queue (ft)	520	476	11	54	33	16
95th Queue (ft)	1020	780	37	81	52	41
Link Distance (ft)	3576	5918	973	973	1193	1193
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 3: Fair Oaks Parkway & Dietz Elkhorn Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	184	190	176	527
Average Queue (ft)	92	98	89	267
95th Queue (ft)	140	164	140	509
Link Distance (ft)	5918	1763	1524	1021
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 0

Queuing and Blocking Report
Baseline

05/17/2024

Intersection: 1: Old Fredricksburg Road & Dietz Elkhorn Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	95	562	99	453
Average Queue (ft)	53	231	45	141
95th Queue (ft)	75	409	76	324
Link Distance (ft)	1693	3577	3360	1693
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Square Gate/Elkhorn Ridge & Dietz Elkhorn Road

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	LT	R
Maximum Queue (ft)	180	1184	48	56	50	69
Average Queue (ft)	83	737	16	33	24	22
95th Queue (ft)	136	1271	40	47	46	43
Link Distance (ft)	3577	5914	965	965	1199	1199
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 3: Fair Oaks Parkway & Dietz Elkhorn Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	552	143	420	194
Average Queue (ft)	247	65	140	96
95th Queue (ft)	425	111	293	149
Link Distance (ft)	5914	3347	1843	1515
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 0

Queuing and Blocking Report
Baseline

05/28/2024

Intersection: 1: Old Fredericksburg Road & Dietz Elkhorn Road

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	LT	R
Maximum Queue (ft)	86	331	93	63	78
Average Queue (ft)	56	145	57	34	40
95th Queue (ft)	77	261	79	56	65
Link Distance (ft)	1607	3574	2216	1455	1455
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 2: Square Gate & Dietz Elkhorn Road

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	LT	R
Maximum Queue (ft)	191	400	53	79	100	55
Average Queue (ft)	88	172	14	33	42	23
95th Queue (ft)	142	312	42	57	73	51
Link Distance (ft)	3574	2057	927	927	632	632
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 3: Fair oaks Pkwy & Dietz Elkhorn Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	148	219	197	400
Average Queue (ft)	76	85	81	156
95th Queue (ft)	125	153	138	302
Link Distance (ft)	3802	2119	1617	1758
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Queuing and Blocking Report
Baseline

05/28/2024

Intersection: 4: Noble Lark & Dietz Elkhorn Road

Movement	NB
Directions Served	LR
Maximum Queue (ft)	229
Average Queue (ft)	114
95th Queue (ft)	195
Link Distance (ft)	1408
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 0

Queuing and Blocking Report
Baseline

05/17/2024

Intersection: 1: Old Fredericksburg Road & Dietz Elkhorn Road

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	LT	R
Maximum Queue (ft)	116	232	90	92	53
Average Queue (ft)	70	128	39	40	29
95th Queue (ft)	107	209	64	67	50
Link Distance (ft)	1647	3575	2363	1495	1495
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 2: Square Gate & Dietz Elkhorn Road

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	LT	R
Maximum Queue (ft)	134	194	54	53	55	54
Average Queue (ft)	71	111	13	28	28	23
95th Queue (ft)	105	173	42	47	54	51
Link Distance (ft)	3575	2057	882	882	741	741
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 3: Fair oaks Pkwy & Dietz Elkhorn Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	203	100	266	119
Average Queue (ft)	103	55	111	69
95th Queue (ft)	165	85	212	104
Link Distance (ft)	3802	2124	1736	1966
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Queuing and Blocking Report
Baseline

05/17/2024

Intersection: 4: Noble Lark & Dietz Elkhorn Road

Movement	EB	NB
Directions Served	TR	LR
Maximum Queue (ft)	29	97
Average Queue (ft)	1	40
95th Queue (ft)	10	69
Link Distance (ft)	2057	1314
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Queuing and Blocking Report
Baseline

05/28/2024

Intersection: 1: Old Fredericksburg Road & Dietz Elkhorn Road

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	LT	R
Maximum Queue (ft)	240	250	199	50	70
Average Queue (ft)	111	147	111	29	39
95th Queue (ft)	185	228	183	53	59
Link Distance (ft)	1607	3574	2216	1455	1455
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 2: Square Gate & Dietz Elkhorn Road

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	LT	R
Maximum Queue (ft)	262	283	54	53	75	52
Average Queue (ft)	128	160	16	34	37	20
95th Queue (ft)	207	258	44	52	62	46
Link Distance (ft)	3574	2063	927	927	632	632
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 3: Fair oaks Pkwy & Dietz Elkhorn Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	190	142	476	406
Average Queue (ft)	93	86	184	194
95th Queue (ft)	144	128	360	352
Link Distance (ft)	3808	2119	1617	1758
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Queuing and Blocking Report
Baseline

05/28/2024

Intersection: 4: Noble Lark & Dietz Elkhorn Road

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 0

Queuing and Blocking Report
Baseline

05/18/2024

Intersection: 1: Old Fredericksburg Road & Dietz Elkhorn Road

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	LT	R
Maximum Queue (ft)	143	1222	85	72	52
Average Queue (ft)	72	480	38	44	32
95th Queue (ft)	119	926	66	71	51
Link Distance (ft)	1647	3575	2363	1495	1495
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 2: Square Gate & Dietz Elkhorn Road

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	LT	R
Maximum Queue (ft)	135	173	31	56	31	79
Average Queue (ft)	81	97	11	24	30	27
95th Queue (ft)	126	151	34	48	39	51
Link Distance (ft)	3575	2063	882	882	741	741
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 3: Fair oaks Pkwy & Dietz Elkhorn Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	233	94	281	203
Average Queue (ft)	112	57	108	73
95th Queue (ft)	183	80	203	129
Link Distance (ft)	3809	2124	1736	1966
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Queuing and Blocking Report
Baseline

05/18/2024

Intersection: 4: Noble Lark & Dietz Elkhorn Road

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 0

Queuing and Blocking Report
Baseline

05/28/2024

Intersection: 1: Old Fredericksburg Road & Dietz Elkhorn Road

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	LT	R
Maximum Queue (ft)	131	581	89	68	101
Average Queue (ft)	66	230	53	32	52
95th Queue (ft)	104	418	74	59	84
Link Distance (ft)	1607	3574	2216	1455	1455
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 2: Square Gate & Dietz Elkhorn Road

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	LT	R
Maximum Queue (ft)	155	765	53	74	75	52
Average Queue (ft)	82	384	16	34	40	20
95th Queue (ft)	135	709	46	64	61	48
Link Distance (ft)	3574	2069	927	927	632	632
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 3: Fair oaks Pkwy & Dietz Elkhorn Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	313	280	224	468
Average Queue (ft)	153	110	91	235
95th Queue (ft)	249	202	163	423
Link Distance (ft)	3802	2119	1617	1758
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Queuing and Blocking Report
Baseline

05/28/2024

Intersection: 4: Noble Lark & Dietz Elkhorn Road

Movement	NB
Directions Served	LR
Maximum Queue (ft)	201
Average Queue (ft)	90
95th Queue (ft)	154
Link Distance (ft)	1408
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 0

Queuing and Blocking Report
Baseline

05/18/2024

Intersection: 1: Old Fredericksburg Road & Dietz Elkhorn Road

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	LT	R
Maximum Queue (ft)	97	255	66	74	67
Average Queue (ft)	57	99	36	40	29
95th Queue (ft)	86	178	57	62	52
Link Distance (ft)	1647	3575	2363	1495	1495
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 2: Square Gate & Dietz Elkhorn Road

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	LT	R
Maximum Queue (ft)	141	243	31	55	31	79
Average Queue (ft)	81	145	16	27	24	28
95th Queue (ft)	125	214	41	54	45	63
Link Distance (ft)	3575	2069	882	882	741	741
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 3: Fair oaks Pkwy & Dietz Elkhorn Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	260	115	187	115
Average Queue (ft)	154	60	99	66
95th Queue (ft)	248	96	154	99
Link Distance (ft)	3802	2124	1736	1966
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Queuing and Blocking Report
Baseline

05/18/2024

Intersection: 4: Noble Lark & Dietz Elkhorn Road

Movement	NB
Directions Served	LR
Maximum Queue (ft)	55
Average Queue (ft)	35
95th Queue (ft)	52
Link Distance (ft)	1314
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 0

APPENDIX C – SYNCHRO OUTPUT REPORTS

SimTraffic Simulation Summary
Baseline

05/16/2024

Summary of All Intervals

Start Time	6:50
End Time	8:00
Total Time (min)	70
Time Recorded (min)	60
# of Intervals	5
# of Recorded Intervals	4
Vehs Entered	2920
Vehs Exited	2825
Starting Vehs	74
Ending Vehs	169
Travel Distance (mi)	3032
Travel Time (hr)	183.9
Total Delay (hr)	78.4
Total Stops	4099
Fuel Used (gal)	110.1

Interval #0 Information Seeding

Start Time	6:50
End Time	7:00
Total Time (min)	10

Volumes adjusted by Growth Factors.
No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Vehs Entered	751
Vehs Exited	665
Starting Vehs	74
Ending Vehs	160
Travel Distance (mi)	721
Travel Time (hr)	34.7
Total Delay (hr)	9.7
Total Stops	1081
Fuel Used (gal)	24.3

Interval #2 Information Recording

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Vehs Entered	721
Vehs Exited	699
Starting Vehs	160
Ending Vehs	182
Travel Distance (mi)	739
Travel Time (hr)	40.8
Total Delay (hr)	14.9
Total Stops	1028
Fuel Used (gal)	25.6

Interval #3 Information Recording

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Vehs Entered	717
Vehs Exited	727
Starting Vehs	182
Ending Vehs	172
Travel Distance (mi)	786
Travel Time (hr)	51.4
Total Delay (hr)	24.2
Total Stops	987
Fuel Used (gal)	29.7

Interval #4 Information Recording

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Vehs Entered	731
Vehs Exited	734
Starting Vehs	172
Ending Vehs	169
Travel Distance (mi)	786
Travel Time (hr)	56.9
Total Delay (hr)	29.5
Total Stops	1003
Fuel Used (gal)	30.5

SimTraffic Performance Report
Baseline

05/16/2024

1: Old Fredricksburg Road & Dietz Elkhorn Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.1
Denied Del/Veh (s)	0.3	0.2	0.3	0.3	0.3
Total Delay (hr)	1.1	2.9	1.4	2.7	8.0
Total Del/Veh (s)	10.8	18.3	12.3	38.5	18.3

2: Square Gate/Elkhorn Ridge & Dietz Elkhorn Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.1	0.2	0.1	0.1
Total Delay (hr)	2.5	2.5	0.4	0.2	5.6
Total Del/Veh (s)	14.2	19.6	7.0	6.6	14.4

3: Fair Oaks Parkway & Dietz Elkhorn Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.0	20.0	20.1
Denied Del/Veh (s)	0.0	0.2	0.4	110.4	34.3
Total Delay (hr)	2.5	1.7	3.2	34.3	41.7
Total Del/Veh (s)	13.8	16.8	25.2	213.2	73.1

Total Network Performance

Denied Delay (hr)	20.2
Denied Del/Veh (s)	24.3
Total Delay (hr)	58.2
Total Del/Veh (s)	70.0

SimTraffic Simulation Summary
Baseline

05/16/2024

Summary of All Intervals

Start Time	6:50
End Time	8:00
Total Time (min)	70
Time Recorded (min)	60
# of Intervals	5
# of Recorded Intervals	4
Vehs Entered	2157
Vehs Exited	2119
Starting Vehs	72
Ending Vehs	110
Travel Distance (mi)	2173
Travel Time (hr)	91.3
Total Delay (hr)	16.3
Total Stops	3512
Fuel Used (gal)	71.2

Interval #0 Information Seeding

Start Time	6:50
End Time	7:00
Total Time (min)	10

Volumes adjusted by Growth Factors.
No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Vehs Entered	531
Vehs Exited	513
Starting Vehs	72
Ending Vehs	90
Travel Distance (mi)	520
Travel Time (hr)	21.6
Total Delay (hr)	3.6
Total Stops	848
Fuel Used (gal)	17.1

Interval #2 Information Recording

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Vehs Entered	536
Vehs Exited	524
Starting Vehs	90
Ending Vehs	102
Travel Distance (mi)	544
Travel Time (hr)	22.8
Total Delay (hr)	4.1
Total Stops	879
Fuel Used (gal)	17.9

Interval #3 Information Recording

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Vehs Entered	517
Vehs Exited	538
Starting Vehs	102
Ending Vehs	81
Travel Distance (mi)	539
Travel Time (hr)	22.8
Total Delay (hr)	4.2
Total Stops	869
Fuel Used (gal)	17.7

Interval #4 Information Recording

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Vehs Entered	573
Vehs Exited	544
Starting Vehs	81
Ending Vehs	110
Travel Distance (mi)	571
Travel Time (hr)	24.1
Total Delay (hr)	4.5
Total Stops	916
Fuel Used (gal)	18.5

SimTraffic Performance Report
Baseline

05/16/2024

1: Old Fredricksburg Road & Dietz Elkhorn Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.1
Denied Del/Veh (s)	0.2	0.1	0.3	0.3	0.2
Total Delay (hr)	0.6	3.1	0.3	1.3	5.2
Total Del/Veh (s)	9.4	20.5	6.9	17.6	16.2

2: Square Gate/Elkhorn Ridge & Dietz Elkhorn Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.2	0.1	0.1	0.1
Total Delay (hr)	1.3	1.9	0.1	0.1	3.5
Total Del/Veh (s)	11.8	14.4	5.0	5.4	11.9

3: Fair Oaks Parkway & Dietz Elkhorn Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.1
Denied Del/Veh (s)	0.0	0.2	0.4	0.3	0.2
Total Delay (hr)	2.5	0.5	1.6	1.2	5.8
Total Del/Veh (s)	22.5	9.0	13.5	11.0	14.7

Total Network Performance

Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.3
Total Delay (hr)	16.2
Total Del/Veh (s)	26.1

SimTraffic Simulation Summary
Baseline

05/17/2024

Summary of All Intervals

Start Time	6:50
End Time	8:00
Total Time (min)	70
Time Recorded (min)	60
# of Intervals	5
# of Recorded Intervals	4
Vehs Entered	2813
Vehs Exited	2768
Starting Vehs	45
Ending Vehs	90
Travel Distance (mi)	2086
Travel Time (hr)	146.6
Total Delay (hr)	73.5
Total Stops	3419
Fuel Used (gal)	83.8

Interval #0 Information Seeding

Start Time	6:50
End Time	7:00
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Vehs Entered	725
Vehs Exited	659
Starting Vehs	45
Ending Vehs	111
Travel Distance (mi)	500
Travel Time (hr)	24.1
Total Delay (hr)	6.6
Total Stops	929
Fuel Used (gal)	17.5

Interval #2 Information Recording

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Vehs Entered	708
Vehs Exited	708
Starting Vehs	111
Ending Vehs	111
Travel Distance (mi)	536
Travel Time (hr)	33.1
Total Delay (hr)	14.2
Total Stops	848
Fuel Used (gal)	20.4

Interval #3 Information Recording

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Vehs Entered	692
Vehs Exited	703
Starting Vehs	111
Ending Vehs	100
Travel Distance (mi)	513
Travel Time (hr)	41.1
Total Delay (hr)	23.2
Total Stops	812
Fuel Used (gal)	21.9

Interval #4 Information Recording

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Vehs Entered	688
Vehs Exited	698
Starting Vehs	100
Ending Vehs	90
Travel Distance (mi)	538
Travel Time (hr)	48.2
Total Delay (hr)	29.6
Total Stops	830
Fuel Used (gal)	24.0

SimTraffic Performance Report
Baseline

05/17/2024

1: Old Fredericksburg Road & Dietz Elkhorn Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.1
Denied Del/Veh (s)	0.2	0.2	0.2	0.2	0.2
Total Delay (hr)	0.7	3.4	0.6	0.5	5.1
Total Del/Veh (s)	11.1	23.9	8.0	6.7	14.8

2: Square Gate & Dietz Elkhorn Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.2	0.1	0.0
Total Delay (hr)	1.0	1.1	0.1	0.2	2.4
Total Del/Veh (s)	9.3	8.0	4.5	6.0	8.0

3: Fair oaks Pkwy & Dietz Elkhorn Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.0	41.3	41.4
Denied Del/Veh (s)	0.0	0.3	0.3	208.7	89.0
Total Delay (hr)	0.8	2.4	1.2	17.1	21.5
Total Del/Veh (s)	14.5	20.8	11.5	100.8	48.9

4: Noble Lark & Dietz Elkhorn Road Performance by approach

Approach	EB	WB	NB	All
Denied Delay (hr)	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.0	0.3	0.1
Total Delay (hr)	0.6	0.3	0.9	1.7
Total Del/Veh (s)	4.3	3.5	11.8	6.0

Total Network Performance

Denied Delay (hr)	41.5
Denied Del/Veh (s)	51.2
Total Delay (hr)	32.0
Total Del/Veh (s)	40.3

SimTraffic Simulation Summary
Baseline

05/17/2024

Summary of All Intervals

Start Time	6:50
End Time	8:00
Total Time (min)	70
Time Recorded (min)	60
# of Intervals	5
# of Recorded Intervals	4
Vehs Entered	2256
Vehs Exited	2219
Starting Vehs	42
Ending Vehs	79
Travel Distance (mi)	1840
Travel Time (hr)	75.8
Total Delay (hr)	11.3
Total Stops	3059
Fuel Used (gal)	61.0

Interval #0 Information Seeding

Start Time	6:50
End Time	7:00
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Vehs Entered	579
Vehs Exited	542
Starting Vehs	42
Ending Vehs	79
Travel Distance (mi)	470
Travel Time (hr)	19.4
Total Delay (hr)	3.0
Total Stops	775
Fuel Used (gal)	15.7

Interval #2 Information Recording

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Vehs Entered	537
Vehs Exited	539
Starting Vehs	79
Ending Vehs	77
Travel Distance (mi)	432
Travel Time (hr)	17.7
Total Delay (hr)	2.5
Total Stops	724
Fuel Used (gal)	14.1

Interval #3 Information Recording

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Vehs Entered	560
Vehs Exited	584
Starting Vehs	77
Ending Vehs	53
Travel Distance (mi)	484
Travel Time (hr)	20.2
Total Delay (hr)	3.2
Total Stops	799
Fuel Used (gal)	15.9

Interval #4 Information Recording

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Vehs Entered	580
Vehs Exited	554
Starting Vehs	53
Ending Vehs	79
Travel Distance (mi)	454
Travel Time (hr)	18.5
Total Delay (hr)	2.6
Total Stops	761
Fuel Used (gal)	15.2

SimTraffic Performance Report
Baseline

05/17/2024

1: Old Fredericksburg Road & Dietz Elkhorn Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.2	0.1	0.2	0.2	0.2
Total Delay (hr)	0.7	2.0	0.2	0.5	3.3
Total Del/Veh (s)	10.3	18.4	6.0	6.5	11.9

2: Square Gate & Dietz Elkhorn Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.1	0.1	0.1	0.1
Total Delay (hr)	1.0	0.9	0.1	0.2	2.1
Total Del/Veh (s)	10.1	9.9	5.0	5.1	8.9

3: Fair oaks Pkwy & Dietz Elkhorn Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.1
Denied Del/Veh (s)	0.0	0.2	0.3	0.3	0.2
Total Delay (hr)	1.0	0.5	1.3	0.8	3.6
Total Del/Veh (s)	12.3	7.6	11.6	8.6	10.2

4: Noble Lark & Dietz Elkhorn Road Performance by approach

Approach	EB	WB	NB	All
Denied Delay (hr)	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.3	0.0	0.1	0.2
Total Delay (hr)	0.8	0.2	0.1	1.1
Total Del/Veh (s)	4.5	3.8	7.4	4.5

Total Network Performance

Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.3
Total Delay (hr)	11.1
Total Del/Veh (s)	17.5

SimTraffic Simulation Summary
Baseline

05/17/2024

Summary of All Intervals

Start Time	6:50
End Time	8:00
Total Time (min)	70
Time Recorded (min)	60
# of Intervals	5
# of Recorded Intervals	4
Vehs Entered	2174
Vehs Exited	2142
Starting Vehs	59
Ending Vehs	91
Travel Distance (mi)	1776
Travel Time (hr)	72.8
Total Delay (hr)	10.5
Total Stops	3030
Fuel Used (gal)	58.7

Interval #0 Information Seeding

Start Time	6:50
End Time	7:00
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Vehs Entered	577
Vehs Exited	557
Starting Vehs	59
Ending Vehs	79
Travel Distance (mi)	464
Travel Time (hr)	19.0
Total Delay (hr)	2.8
Total Stops	799
Fuel Used (gal)	15.3

Interval #2 Information Recording

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Vehs Entered	519
Vehs Exited	537
Starting Vehs	79
Ending Vehs	61
Travel Distance (mi)	415
Travel Time (hr)	16.9
Total Delay (hr)	2.2
Total Stops	704
Fuel Used (gal)	13.8

Interval #3 Information Recording

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Vehs Entered	512
Vehs Exited	511
Starting Vehs	61
Ending Vehs	62
Travel Distance (mi)	429
Travel Time (hr)	17.3
Total Delay (hr)	2.3
Total Stops	728
Fuel Used (gal)	13.9

Interval #4 Information Recording

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Vehs Entered	566
Vehs Exited	537
Starting Vehs	62
Ending Vehs	91
Travel Distance (mi)	468
Travel Time (hr)	19.5
Total Delay (hr)	3.2
Total Stops	799
Fuel Used (gal)	15.6

SimTraffic Performance Report
Baseline

05/17/2024

1: Old Fredericksburg Road & Diets Elkhorn Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.2	0.0	0.2	0.2	0.1
Total Delay (hr)	0.5	1.4	0.3	0.5	2.7
Total Del/Veh (s)	8.0	13.9	6.4	6.6	9.5

2: Square Gate & Dietz Elkhorn Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.2	0.1	0.1	0.1
Total Delay (hr)	1.1	0.7	0.1	0.1	2.0
Total Del/Veh (s)	9.8	8.4	5.0	4.7	8.4

3: Fair oaks Pkwy & Dietz Elkhorn Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.1	0.0	0.1
Denied Del/Veh (s)	0.1	0.2	0.4	0.3	0.3
Total Delay (hr)	0.9	0.4	1.9	1.0	4.2
Total Del/Veh (s)	12.3	7.0	13.9	10.3	11.6

4: Noble Lark & Dietz Elkhorn Road Performance by approach

Approach	EB	WB	All
Denied Delay (hr)	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.0	0.0
Total Delay (hr)	0.4	0.1	0.6
Total Del/Veh (s)	3.9	2.2	3.3

Total Network Performance

Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.3
Total Delay (hr)	10.3
Total Del/Veh (s)	16.6

SimTraffic Simulation Summary
Baseline

05/17/2024

Summary of All Intervals

Start Time	6:50
End Time	8:00
Total Time (min)	70
Time Recorded (min)	60
# of Intervals	5
# of Recorded Intervals	4
Vehs Entered	2982
Vehs Exited	2903
Starting Vehs	54
Ending Vehs	133
Travel Distance (mi)	2384
Travel Time (hr)	153.2
Total Delay (hr)	69.4
Total Stops	3768
Fuel Used (gal)	91.3

Interval #0 Information Seeding

Start Time	6:50
End Time	7:00
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Vehs Entered	754
Vehs Exited	685
Starting Vehs	54
Ending Vehs	123
Travel Distance (mi)	587
Travel Time (hr)	27.4
Total Delay (hr)	6.8
Total Stops	1052
Fuel Used (gal)	20.1

Interval #2 Information Recording

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Vehs Entered	738
Vehs Exited	718
Starting Vehs	123
Ending Vehs	143
Travel Distance (mi)	595
Travel Time (hr)	35.7
Total Delay (hr)	14.6
Total Stops	911
Fuel Used (gal)	21.9

Interval #3 Information Recording

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Vehs Entered	721
Vehs Exited	748
Starting Vehs	143
Ending Vehs	116
Travel Distance (mi)	585
Travel Time (hr)	42.7
Total Delay (hr)	22.1
Total Stops	865
Fuel Used (gal)	23.7

Interval #4 Information Recording

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Vehs Entered	769
Vehs Exited	752
Starting Vehs	116
Ending Vehs	133
Travel Distance (mi)	617
Travel Time (hr)	47.4
Total Delay (hr)	25.8
Total Stops	940
Fuel Used (gal)	25.5

SimTraffic Performance Report
Baseline

05/17/2024

1: Old Fredericksburg Road & Diets Elkhorn Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.1
Denied Del/Veh (s)	0.2	0.2	0.4	0.2	0.2
Total Delay (hr)	1.2	2.5	1.5	0.5	5.7
Total Del/Veh (s)	11.8	19.2	14.2	6.9	14.0

2: Square Gate & Dietz Elkhorn Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.1	0.2	0.2	0.1
Total Delay (hr)	2.1	1.0	0.3	0.2	3.7
Total Del/Veh (s)	12.0	10.0	6.3	6.8	10.1

3: Fair oaks Pkwy & Dietz Elkhorn Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.1	30.3	30.3
Denied Del/Veh (s)	0.0	0.3	0.5	171.8	61.5
Total Delay (hr)	1.1	1.7	3.2	21.2	27.1
Total Del/Veh (s)	13.0	15.9	23.8	133.4	56.6

4: Noble Lark & Dietz Elkhorn Road Performance by approach

Approach	EB	WB	All
Denied Delay (hr)	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0
Total Delay (hr)	0.9	0.3	1.2
Total Del/Veh (s)	4.8	3.0	4.1

Total Network Performance

Denied Delay (hr)	30.5
Denied Del/Veh (s)	36.0
Total Delay (hr)	38.9
Total Del/Veh (s)	46.1

SimTraffic Simulation Summary
Baseline

05/17/2024

Summary of All Intervals

Start Time	6:50
End Time	8:00
Total Time (min)	70
Time Recorded (min)	60
# of Intervals	5
# of Recorded Intervals	4
Vehs Entered	2175
Vehs Exited	2146
Starting Vehs	44
Ending Vehs	73
Travel Distance (mi)	1955
Travel Time (hr)	80.5
Total Delay (hr)	12.5
Total Stops	3365
Fuel Used (gal)	64.1

Interval #0 Information Seeding

Start Time	6:50
End Time	7:00
Total Time (min)	10

Volumes adjusted by Growth Factors.
No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Vehs Entered	526
Vehs Exited	488
Starting Vehs	44
Ending Vehs	82
Travel Distance (mi)	445
Travel Time (hr)	18.3
Total Delay (hr)	2.6
Total Stops	784
Fuel Used (gal)	14.6

Interval #2 Information Recording

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Vehs Entered	563
Vehs Exited	568
Starting Vehs	82
Ending Vehs	77
Travel Distance (mi)	511
Travel Time (hr)	21.2
Total Delay (hr)	3.3
Total Stops	876
Fuel Used (gal)	16.7

Interval #3 Information Recording

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Vehs Entered	537
Vehs Exited	549
Starting Vehs	77
Ending Vehs	65
Travel Distance (mi)	503
Travel Time (hr)	20.8
Total Delay (hr)	3.5
Total Stops	854
Fuel Used (gal)	16.6

Interval #4 Information Recording

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Vehs Entered	549
Vehs Exited	541
Starting Vehs	65
Ending Vehs	73
Travel Distance (mi)	496
Travel Time (hr)	20.2
Total Delay (hr)	3.0
Total Stops	851
Fuel Used (gal)	16.2

SimTraffic Performance Report
Baseline

05/17/2024

1: Old Fredericksburg Road & Diets Elkhorn Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.2	0.1	0.1	0.2	0.1
Total Delay (hr)	0.7	2.7	0.2	0.5	4.1
Total Del/Veh (s)	10.0	19.6	7.0	7.2	13.4

2: Square Gate & Dietz Elkhorn Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.2	0.1	0.1	0.1
Total Delay (hr)	1.0	1.3	0.1	0.1	2.5
Total Del/Veh (s)	9.7	10.4	4.8	5.1	9.2

3: Fair oaks Pkwy & Dietz Elkhorn Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.1
Denied Del/Veh (s)	0.1	0.2	0.4	0.3	0.3
Total Delay (hr)	1.2	0.4	1.5	0.8	4.0
Total Del/Veh (s)	12.8	7.5	11.9	9.8	11.0

4: Noble Lark & Dietz Elkhorn Road Performance by approach

Approach	EB	WB	NB	All
Denied Delay (hr)	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.1	0.0
Total Delay (hr)	0.2	0.2	0.2	0.6
Total Del/Veh (s)	2.9	3.5	6.8	3.7

Total Network Performance

Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.3
Total Delay (hr)	12.3
Total Del/Veh (s)	19.9

SimTraffic Simulation Summary
Baseline

05/17/2024

Summary of All Intervals

Start Time	6:50
End Time	8:00
Total Time (min)	70
Time Recorded (min)	60
# of Intervals	5
# of Recorded Intervals	4
Vehs Entered	2928
Vehs Exited	2851
Starting Vehs	47
Ending Vehs	124
Travel Distance (mi)	2209
Travel Time (hr)	117.5
Total Delay (hr)	39.8
Total Stops	4010
Fuel Used (gal)	79.6

Interval #0 Information Seeding

Start Time	6:50
End Time	7:00
Total Time (min)	10

Volumes adjusted by Growth Factors.
No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Vehs Entered	765
Vehs Exited	689
Starting Vehs	47
Ending Vehs	123
Travel Distance (mi)	551
Travel Time (hr)	25.2
Total Delay (hr)	5.9
Total Stops	1109
Fuel Used (gal)	19.0

Interval #2 Information Recording

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Vehs Entered	742
Vehs Exited	749
Starting Vehs	123
Ending Vehs	116
Travel Distance (mi)	569
Travel Time (hr)	30.2
Total Delay (hr)	10.2
Total Stops	1052
Fuel Used (gal)	20.2

Interval #3 Information Recording

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Vehs Entered	711
Vehs Exited	719
Starting Vehs	116
Ending Vehs	108
Travel Distance (mi)	559
Travel Time (hr)	31.7
Total Delay (hr)	12.1
Total Stops	942
Fuel Used (gal)	20.7

Interval #4 Information Recording

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Vehs Entered	710
Vehs Exited	694
Starting Vehs	108
Ending Vehs	124
Travel Distance (mi)	531
Travel Time (hr)	30.4
Total Delay (hr)	11.6
Total Stops	907
Fuel Used (gal)	19.7

SimTraffic Performance Report
Baseline

05/17/2024

1: Old Fredericksburg Road & Diets Elkhorn Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.1
Denied Del/Veh (s)	0.2	0.1	0.2	0.2	0.2
Total Delay (hr)	0.5	3.6	0.5	0.4	5.1
Total Del/Veh (s)	8.4	22.4	7.2	6.3	14.1

2: Square Gate & Dietz Elkhorn Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.1	0.1	0.0
Total Delay (hr)	0.9	1.6	0.1	0.2	2.8
Total Del/Veh (s)	9.0	8.5	4.7	5.8	8.2

3: Fair oaks Pkwy & Dietz Elkhorn Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.0	3.8	3.9
Denied Del/Veh (s)	0.1	0.4	0.4	21.9	8.5
Total Delay (hr)	1.1	1.4	1.5	20.1	24.1
Total Del/Veh (s)	14.0	14.7	13.8	115.7	52.9

4: Noble Lark & Dietz Elkhorn Road Performance by approach

Approach	EB	WB	NB	All
Denied Delay (hr)	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.4	0.2
Total Delay (hr)	0.2	0.3	1.9	2.4
Total Del/Veh (s)	2.4	3.9	15.2	8.1

Total Network Performance

Denied Delay (hr)	4.0
Denied Del/Veh (s)	4.9
Total Delay (hr)	35.8
Total Del/Veh (s)	43.4

SimTraffic Simulation Summary
Baseline

06/09/2024

Summary of All Intervals

Start Time	6:50
End Time	8:00
Total Time (min)	70
Time Recorded (min)	70
# of Intervals	5
# of Recorded Intervals	5
Vehs Entered	3324
Vehs Exited	3196
Starting Vehs	0
Ending Vehs	128
Travel Distance (mi)	2608
Travel Time (hr)	160.7
Total Delay (hr)	69.2
Total Stops	4318
Fuel Used (gal)	98.1

Interval #0 Information Seeding

Start Time	6:50
End Time	7:00
Total Time (min)	10

Volumes adjusted by Growth Factors.

Vehs Entered	309
Vehs Exited	240
Starting Vehs	0
Ending Vehs	69
Travel Distance (mi)	239
Travel Time (hr)	9.6
Total Delay (hr)	1.3
Total Stops	431
Fuel Used (gal)	7.8

Interval #1 Information Recording

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Vehs Entered	782
Vehs Exited	705
Starting Vehs	69
Ending Vehs	146
Travel Distance (mi)	589
Travel Time (hr)	30.0
Total Delay (hr)	9.4
Total Stops	1069
Fuel Used (gal)	20.8

Interval #2 Information Recording

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Vehs Entered	771
Vehs Exited	786
Starting Vehs	146
Ending Vehs	131
Travel Distance (mi)	627
Travel Time (hr)	39.4
Total Delay (hr)	17.3
Total Stops	983
Fuel Used (gal)	23.6

Interval #3 Information Recording

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Vehs Entered	717
Vehs Exited	734
Starting Vehs	131
Ending Vehs	114
Travel Distance (mi)	563
Travel Time (hr)	37.0
Total Delay (hr)	17.2
Total Stops	894
Fuel Used (gal)	21.9

Interval #4 Information Recording

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Vehs Entered	745
Vehs Exited	731
Starting Vehs	114
Ending Vehs	128
Travel Distance (mi)	589
Travel Time (hr)	44.7
Total Delay (hr)	24.0
Total Stops	941
Fuel Used (gal)	24.0

SimTraffic Performance Report
Baseline

06/09/2024

1: Old Fredericksburg Road & Diets Elkhorn Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.1
Denied Del/Veh (s)	0.3	0.1	0.3	0.1	0.2
Total Delay (hr)	1.7	3.4	1.6	0.5	7.1
Total Del/Veh (s)	15.6	21.6	14.6	7.0	16.0

2: Square Gate & Dietz Elkhorn Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.2	0.2	0.1	0.1
Total Delay (hr)	2.6	2.4	0.4	0.3	5.7
Total Del/Veh (s)	14.1	16.0	6.8	8.1	13.2

3: Fair oaks Pkwy & Dietz Elkhorn Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.1	24.3	24.4
Denied Del/Veh (s)	0.1	0.3	0.4	120.7	46.3
Total Delay (hr)	1.3	1.5	2.8	24.0	29.6
Total Del/Veh (s)	14.1	14.1	21.5	129.3	57.8

4: Noble Lark & Dietz Elkhorn Road Performance by approach

Approach	EB	WB	NB	All
Denied Delay (hr)	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.1	0.0
Total Delay (hr)	0.5	0.5	0.0	1.0
Total Del/Veh (s)	2.5	4.3	3.4	3.2

Total Network Performance

Denied Delay (hr)	24.6
Denied Del/Veh (s)	26.2
Total Delay (hr)	44.7
Total Del/Veh (s)	48.4

Queuing and Blocking Report
Baseline

06/09/2024

Intersection: 1: Old Fredericksburg Road & Diets Elkhorn Road

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	LT	R
Maximum Queue (ft)	190	247	265	50	100
Average Queue (ft)	87	108	85	30	44
95th Queue (ft)	170	201	163	48	77
Link Distance (ft)	1590	3575	1110	862	862
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 2: Square Gate & Dietz Elkhorn Road

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	LT	R
Maximum Queue (ft)	239	341	50	98	112	31
Average Queue (ft)	87	111	15	47	34	25
95th Queue (ft)	164	219	44	76	66	44
Link Distance (ft)	3575	2074	989	989	697	697
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 3: Fair oaks Pkwy & Dietz Elkhorn Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	153	143	392	764
Average Queue (ft)	79	80	118	566
95th Queue (ft)	135	133	254	989
Link Distance (ft)	3799	998	787	701
Upstream Blk Time (%)				69
Queuing Penalty (veh)				0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Queuing and Blocking Report
Baseline

06/09/2024

Intersection: 4: Noble Lark & Dietz Elkhorn Road

Movement	NB
Directions Served	R
Maximum Queue (ft)	31
Average Queue (ft)	18
95th Queue (ft)	41
Link Distance (ft)	630
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 0

SimTraffic Simulation Summary
Baseline

06/04/2024

Summary of All Intervals

Start Time	6:50
End Time	8:00
Total Time (min)	70
Time Recorded (min)	60
# of Intervals	5
# of Recorded Intervals	4
Vehs Entered	2207
Vehs Exited	2167
Starting Vehs	53
Ending Vehs	93
Travel Distance (mi)	1948
Travel Time (hr)	80.4
Total Delay (hr)	12.6
Total Stops	3305
Fuel Used (gal)	63.6

Interval #0 Information Seeding

Start Time	6:50
End Time	7:00
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:00
End Time	7:15
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Vehs Entered	546
Vehs Exited	520
Starting Vehs	53
Ending Vehs	79
Travel Distance (mi)	475
Travel Time (hr)	19.5
Total Delay (hr)	3.0
Total Stops	801
Fuel Used (gal)	15.5

Interval #2 Information Recording

Start Time	7:15
End Time	7:30
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Vehs Entered	556
Vehs Exited	541
Starting Vehs	79
Ending Vehs	94
Travel Distance (mi)	500
Travel Time (hr)	20.6
Total Delay (hr)	3.2
Total Stops	845
Fuel Used (gal)	16.3

Interval #3 Information Recording

Start Time	7:30
End Time	7:45
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Vehs Entered	548
Vehs Exited	574
Starting Vehs	94
Ending Vehs	68
Travel Distance (mi)	494
Travel Time (hr)	20.5
Total Delay (hr)	3.3
Total Stops	846
Fuel Used (gal)	16.3

Interval #4 Information Recording

Start Time	7:45
End Time	8:00
Total Time (min)	15

Volumes adjusted by PHF, Growth Factors.

Vehs Entered	557
Vehs Exited	532
Starting Vehs	68
Ending Vehs	93
Travel Distance (mi)	478
Travel Time (hr)	19.8
Total Delay (hr)	3.1
Total Stops	813
Fuel Used (gal)	15.5

SimTraffic Performance Report
Baseline

06/04/2024

1: Old Fredericksburg Road & Diets Elkhorn Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.2	0.1	0.2	0.2	0.1
Total Delay (hr)	0.6	2.7	0.3	0.5	4.1
Total Del/Veh (s)	9.4	19.4	7.8	7.5	13.2

2: Square Gate & Dietz Elkhorn Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.3	0.1	0.1	0.2
Total Delay (hr)	0.9	1.2	0.1	0.1	2.4
Total Del/Veh (s)	9.3	10.2	4.8	4.7	9.0

3: Fair oaks Pkwy & Dietz Elkhorn Road Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.1	0.0	0.1
Denied Del/Veh (s)	0.1	0.2	0.4	0.4	0.3
Total Delay (hr)	1.1	0.6	1.7	0.9	4.3
Total Del/Veh (s)	12.8	8.4	13.0	10.0	11.4

4: Noble Lark & Dietz Elkhorn Road Performance by approach

Approach	EB	WB	NB	All
Denied Delay (hr)	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.1	0.0
Total Delay (hr)	0.2	0.2	0.0	0.4
Total Del/Veh (s)	2.9	3.5	2.2	3.1

Total Network Performance

Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.3
Total Delay (hr)	12.4
Total Del/Veh (s)	19.7

Queuing and Blocking Report
Baseline

06/04/2024

Intersection: 1: Old Fredericksburg Road & Diets Elkhorn Road

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	LT	R
Maximum Queue (ft)	93	194	91	119	52
Average Queue (ft)	55	109	42	43	30
95th Queue (ft)	80	173	69	77	50
Link Distance (ft)	1575	3574	1240	1132	1132
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 2: Square Gate & Dietz Elkhorn Road

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	LT	R
Maximum Queue (ft)	109	128	53	52	54	55
Average Queue (ft)	51	77	16	24	28	24
95th Queue (ft)	79	109	44	48	46	47
Link Distance (ft)	3574	2073	1026	1026	881	881
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 3: Fair oaks Pkwy & Dietz Elkhorn Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	137	136	245	132
Average Queue (ft)	79	60	97	69
95th Queue (ft)	109	98	167	106
Link Distance (ft)	3799	1344	931	929
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Queuing and Blocking Report
Baseline

06/04/2024

Intersection: 4: Noble Lark & Dietz Elkhorn Road

Movement	NB
Directions Served	R
Maximum Queue (ft)	31
Average Queue (ft)	12
95th Queue (ft)	35
Link Distance (ft)	716
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 0

APPENDIX D – EXISTING LOS RESULTS 2021 FAIR OAKS PARKWAY & DIETZ ELKHORN ROAD

EXHIBIT A

Dietz Elkhorn & Fair Oaks	Intersection Analysis									
	Northbound Fair Oaks		Southbound Fair Oaks		Eastbound Dietz Elkhorn		Westbound Dietz Elkhorn		Intersection Average	
	Delay (Sec)	LOS	Delay (Sec)	LOS	Delay (Sec)	LOS	Delay (Sec)	LOS	Delay (Sec)	LOS
2021 AM Peak Period										
Existing	9.0	A	9.9	A	8.8	A	9.3	A	9.4	A
Rounabout	5.1	A	6.5	A	5.1	A	5.0	A	5.6	A
2026 AM Peak Period										
Existing	12.6	B	17.1	C	11.0	B	12.5	B	14.3	B
Rounabout	6.5	A	10.0	B	6.7	A	6.7	A	8.0	A
2031 AM Peak Period										
Existing	56.7	F	232.6	F	20.8	C	34.9	D	121.5	F
Rounabout	10.1	B	31.7	D	11.2	B	11.0	B	19.4	C
2021 PM Peak Period										
Existing	12.1	B	10.3	B	9.9	A	10.0	A	11.0	B
Rounabout	7.6	A	5.8	A	5.6	A	6.2	A	6.6	A
2026 PM Peak Period										
Existing	54.6	F	21.2	C	15.6	C	16.3	C	33.9	D
Rounabout	13.7	B	8.2	A	8.0	A	9.6	A	10.8	B
2031 PM Peak Period										
Existing	545.9	F	206.3	F	51.5	F	61.7	F	306.0	F
Rounabout	101.6	F	16.6	C	16.6	C	27.1	D	54.7	F

APPENDIX E – RIGHT-OUT AUTOTURN EXHIBIT DISPLAYING TURNAROUND MOVEMENT

EXHIBIT A
334 LF
DIETZ ELKHORN RD
NOBLE LARK DR
Noble Lark Traffic Study
Dietz Elkhorn Road & Noble Lark Drive
Proposed Option #5 (Right-Out Only)
Legend
Raised Concrete Median
DATE:
6/10/2024
SCALE:
1" = 25'
PAGE:
LEGACY ENGINEERING GROUP
Legacy Engineering Group, PLLC
7800 W Interstate 10, Ste 630, San Antonio, Texas 78230
210.660.1960 / TBPE Firm Registration No. 20623

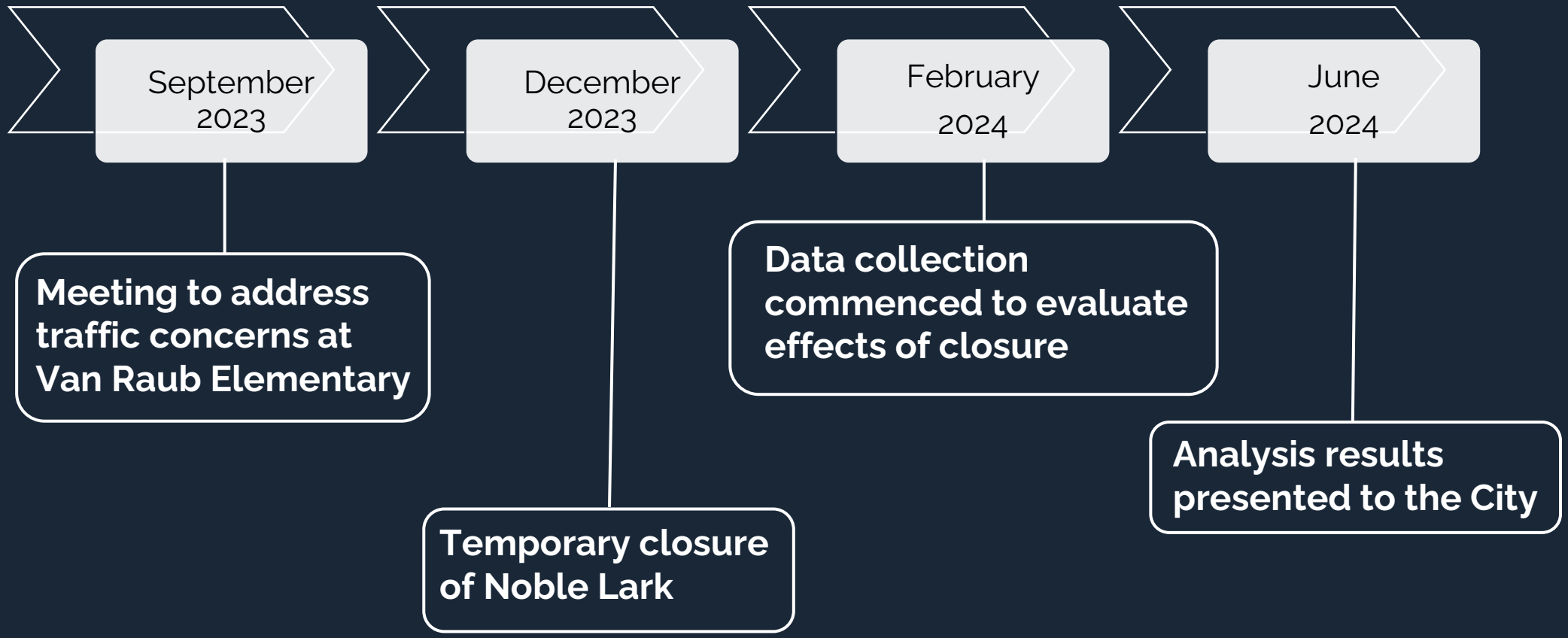
Exhibit B

NOBLE LARK DRIVE CLOSURE ANALYSIS

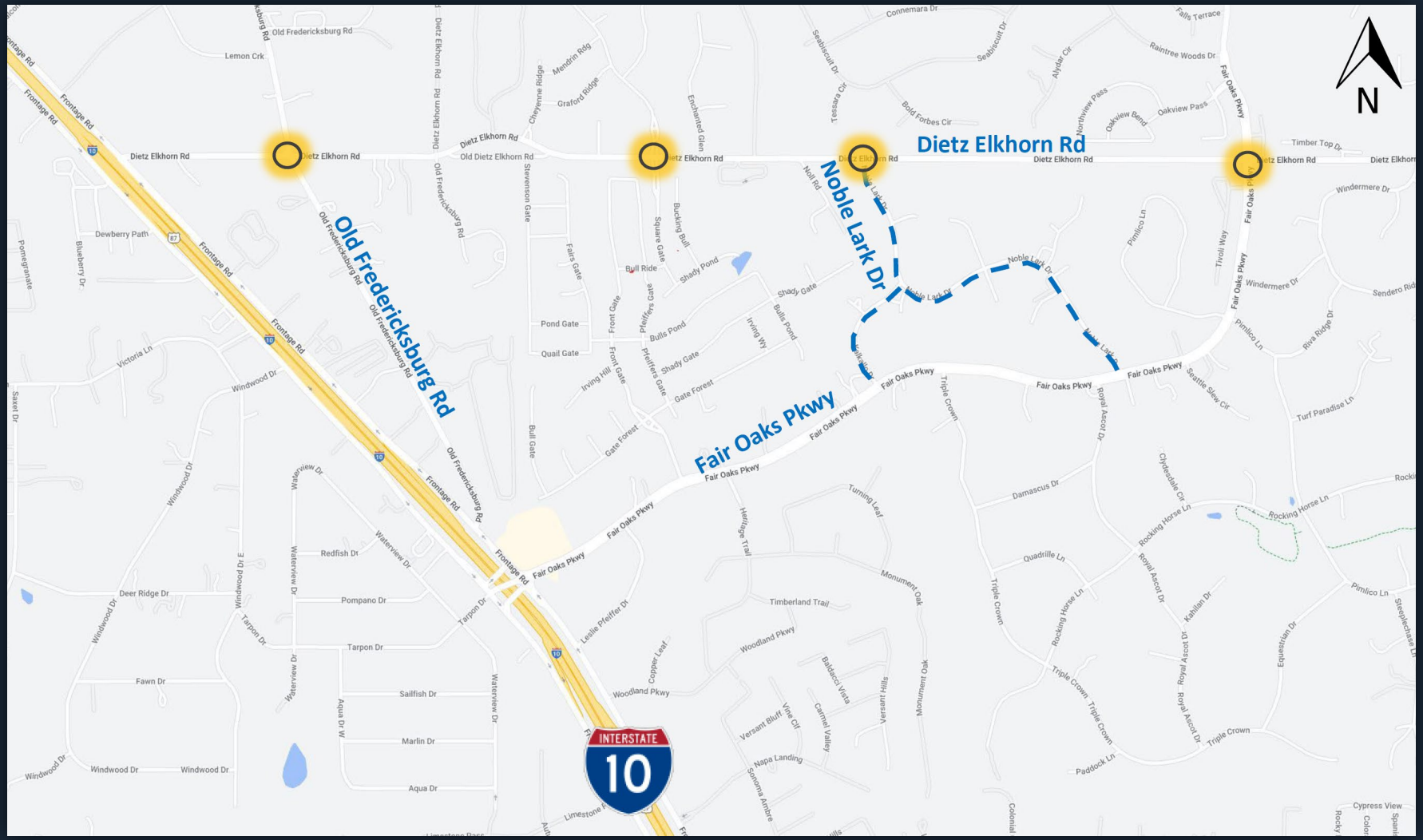
Carole Vanzant, Assistant City Manager

Oscar Michael Garza, PE, PTOE, PTP, RSP1, City of Fair Oaks Ranch GEC

BACKGROUND


September 2023
Meeting to address traffic concerns at Van Raub Elementary
December 2023
Temporary closure of Noble Lark
February 2024
Data collection commenced to evaluate effects of closure
June 2024
Analysis results presented to the City

STUDY LOCATION



STUDY METHODOLOGY

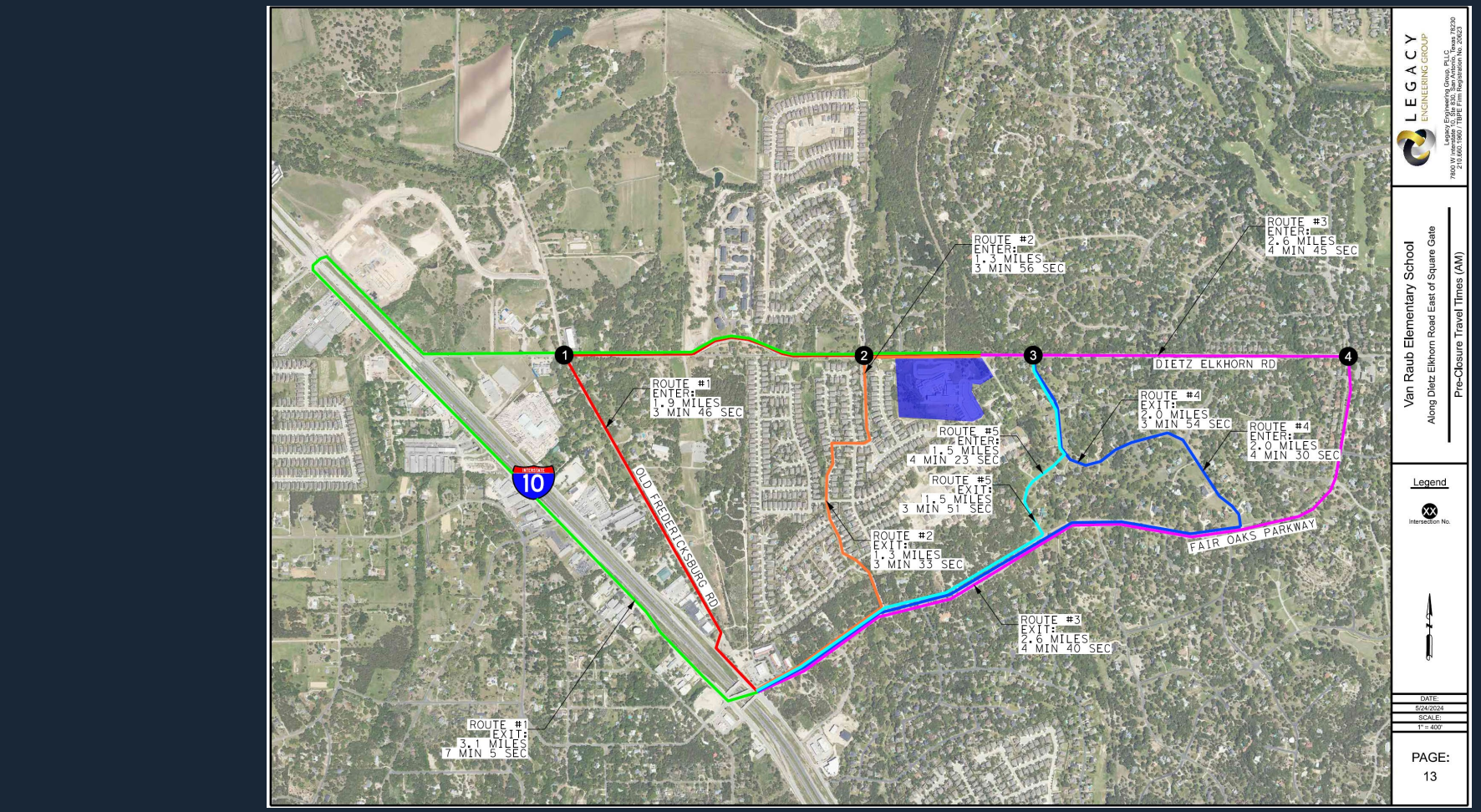
- Multiple Project Site Visits were conducted to observe and document existing traffic conditions.
- Travel time runs were conducted between I-10 & Fair Oaks Pkwy and Van Raub Elementary School.
- Data Collection in the form of Turning Movement Counts (TMCs) were collected and analyzed.
- An analysis of the traffic operations and travel times at four intersections along Dietz Elkhorn Road for the Pre & Post Closure of Noble Lark Drive.
- Sim Traffic was utilized to establish queuing along the corridor.

KEY STUDY CONSIDERATIONS

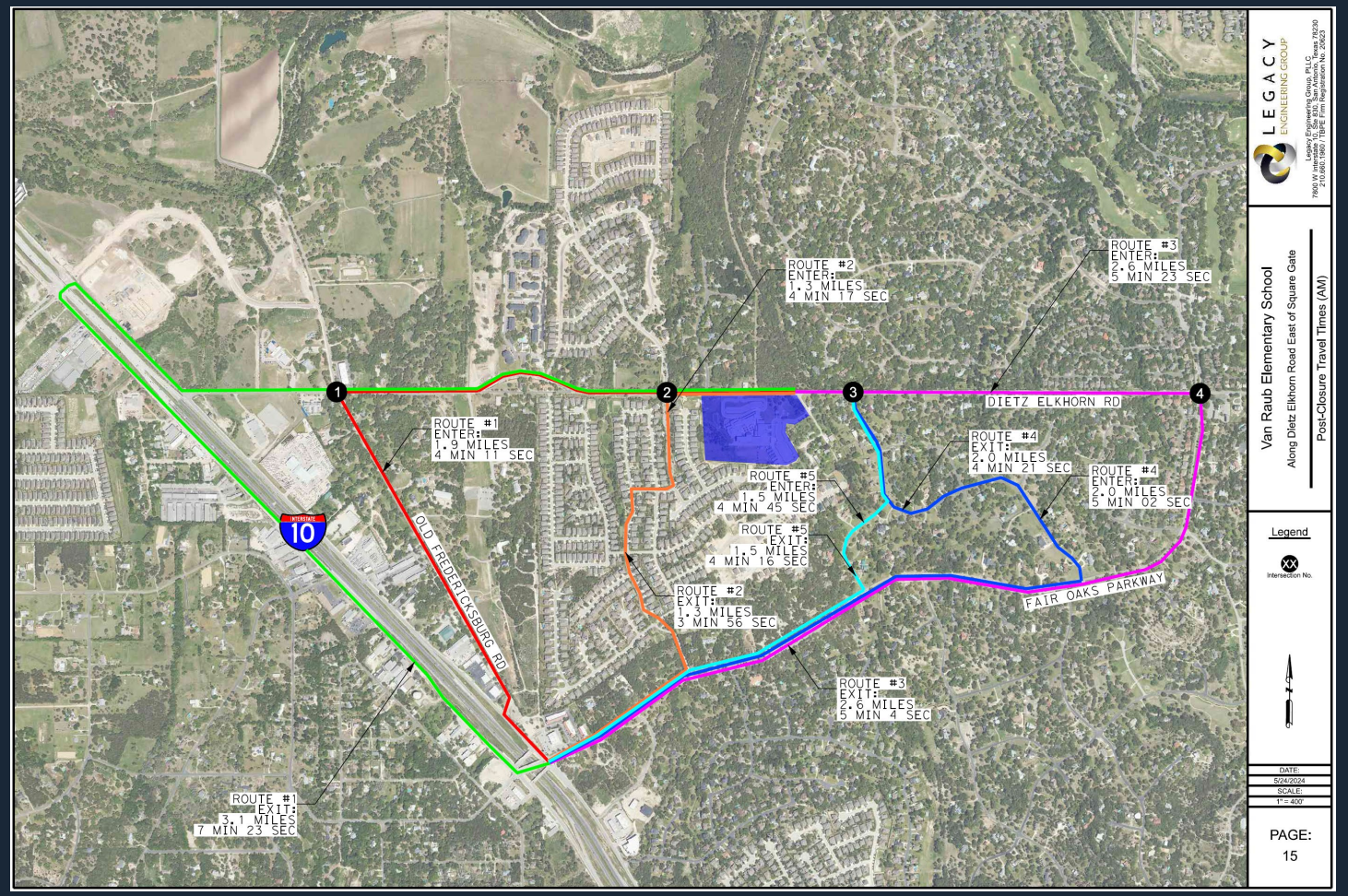
- Van Raub Elementary School opened on Dietz Elkhorn Road
- I-10 Frontage Road converted to one-way system/flow
- Traffic increased on Noble Lark Road (due to cut-through)
- An all-way stop condition was installed at Dietz Elkhorn Road & Square Gate to enhance safety for students crossing
- Traffic increasing due to Lemon Creek Development
- Noble Lark Drive temporarily closed for assessment

DRONE VIDEOS

TRAVEL TIME ANALYSIS (AM ~ PRE-CLOSURE)



TRAVEL TIME ANALYSIS (AM ~ POST-CLOSURE)



ALTERNATIVES CONSIDERED

- Permanently Close Noble Lark Drive at Dietz Elkhorn Road
- Re-Open Noble Lark Drive at Dietz Elkhorn Road
- Convert Noble Lark Drive to One-Way Operation (Southbound)
- Convert Noble Lark Drive to One-Way Operation (Northbound)
- Right-In/Right-Out Configuration

ALT 1: PERMANENTLY CLOSE NOBLE LARK DRIVE

PROS

- Enhances Safety for Noble Lark Drive
- Prevents Cut-Through Traffic Flow on Neighborhood Street
- Aligns with City Transportation Plan (Moving Traffic to Collectors)

CONS

- Increases Travel Times / Delays on Collectors
- Requires Permanent Structure

$ Cost is Dependent on Closure Method

ALT 2: RE-OPEN NOBLE LARK DRIVE

PROS

- Decreases Travel Times / Delays on Collectors

CONS

- Impacts Safety for Noble Lark Drive
- Impacts Roadway Infrastructure
- Traffic Calming Measures May be Required

- $ Cost is dependent on traffic calming measures implemented

ALT 3: CONVERT NOBLE LARK DRIVE (SB ONLY)

PROS

- Reduces Cut-Through Traffic Flow on Neighborhood Street

CONS

- Impacts Safety for Noble Lark Drive
- Increases Travel Times / Delays on Collectors
- Creates Driver Confusion
- Includes Risk of Wrong-Way Driving

~$10,000 Estimated Cost for signage and raised median

ALT 4: CONVERT NOBLE LARK DRIVE (NB ONLY)

PROS

- Reduces Cut-Through Traffic Flow on Neighborhood Street
- Decreases Travel Times / Delays on Collectors

CONS

- Impacts Safety for Noble Lark Drive
- Creates Driver Confusion
- Includes Risk of Wrong-Way Driving

~$10,000 Estimated cost for signage and raised median

ALT 5: RIGHT OUT ONLY AT NOBLE LARK DRIVE

PROS

- Reduces Cut-Through Traffic Flow on Neighborhood Street
- Decreases Travel Times / Delays on Collectors

CONS

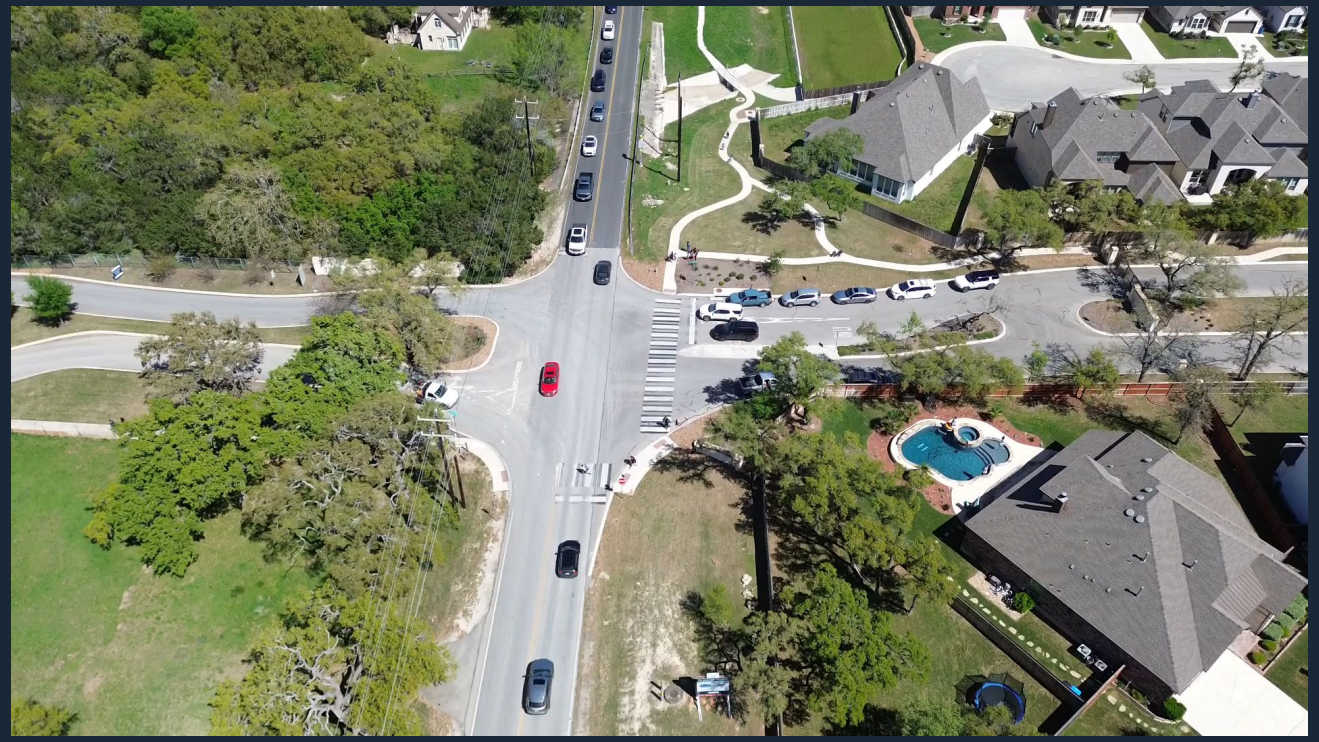
- Impacts Safety for Noble Lark Drive
- Includes Risk of U-Turns on Dietz-Elkhorn
  (See Next Slide)
- Potential Impacts to Adjacent Properties

~$7,500 for Raised Traffic Control Island

ALT 5: RIGHT OUT ONLY AT NOBLE LARK DRIVE

OTHER SPECIAL CONSIDERATIONS

- ✓ Square Gate is a gated community but is being used by non-residents of Square Gate
- ✓ Pedestrian crossing at Square Gate is not represented by a crossing guard
- ✓ Lemon Creek Development impacting traffic volumes on Dietz Elkhorn Road
- ✓ Dietz Elkhorn Road & Fair Oaks Parkway intersection experiences poor LOS during peak periods with or without closure



RECOMMENDATION

Based on this analysis, it is our recommendation to permanently close Noble Lark Drive at Dietz Elkhorn Road based on the following:

- The minor improvements in operations and travel times (~30 seconds) associated with re-opening the intersection do not supersede the safety benefits that the closure provides.
- The closure supports the City's Transportation Plan and UDC, which includes a defined breakdown of street classifications (with heavier traffic being sent to Collectors versus local neighborhood streets).
- The peak queues experienced at the study intersections are cleared within 5-10 minutes of the school drop-off and pick-up periods.

PERMANENT CLOSURE – NEXT STEPS

If Council supports this recommendation, the following options would need to be considered for a permanent barrier:

- Extend Existing Rock Fence
- Construct an Emergency Access Gate
- Construct a Partial Hammerhead Turnaround
- Construct a Boulder Barricade

~$1,000

~$10,000

~$5,000

~$15,000

QUESTIONS/DISCUSSION

TRANSPORTATION SAFETY ADVISORY COMMITTEE CONSIDERATION ITEM

CITY OF FAIR OAKS RANCH, TEXAS

AGENDA TOPIC: Consideration and possible action on implementing a no left turn onto Kalkallo from Fair Oaks Parkway from 7 – 9 a.m. Monday through Friday and no right-hand turn onto Noble Lark from Dietz Elkhorn from 2 – 4 p.m. Monday through Friday

DATE: February 26, 2025

REQUESTER Virigina Miller, Resident

REQUEST

Location/Situation for Review and Description of Concerns

Thank you in advance to the City Council for their time and effort in the speed limit reduction to the Kalkallo/Noble Lark traffic issue caused by the school traffic. While it certainly does help with the speeding issue, it does not address the safety issue of the two-way school traffic that creates an extremely dangerous situation for mothers pushing strollers, residents just doing their daily walks, and cyclists. These two narrow streets were never meant for continuous two-way traffic for any period of time. Thank you in advance for considering this much needed safety for the pedestrians and cyclists on these two streets.

Desired Outcome/Resolution

My strong suggestion along with many of our neighbors is that we defer that two-way school traffic by implementing no left-hand turn onto Kalkallo from Fair Oaks Parkway from 7 - 9 a.m. Monday through Friday and no right-hand turn onto Noble Lark from Dietz Elkhorn from 2 - 4 p.m. Monday through Friday. This would immensely decrease the two-way traffic for such prolonged periods of time which would definitely reduce the possibility of an accident, heaven forbid, a fatality.

STAFF REPORT

Public Works Comments

The Noble Lark/Dietz Elkhorn right turn option was one of five options presented to the City Council on June 20, 2024 relative to closing that intersection. The Council directed staff to bring back an agenda item on permanently closing intersection. They did not provide direction on the other four options. On July 18, City Council voted to indefinitely postpone the closure of Noble Lark and Dietz Elkhorn.

No discussions have been held on a no left turn onto Kalkallo from Fair Oaks Parkway.

Public Safety Comments

School traffic contributes to increased vehicle traffic for approximately 30 minutes twice a day. Removing the ability for travelers to move freely will add to the congestion and create new challenges (divert traffic to other streets). There have been no collisions reported because of excessive speed or congestion. This is one of the primary routes to access the Van Raub Elementary School.

COMMITTEE ACTION/RECOMMENDATION

I move to recommend ….