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September 26, 2017

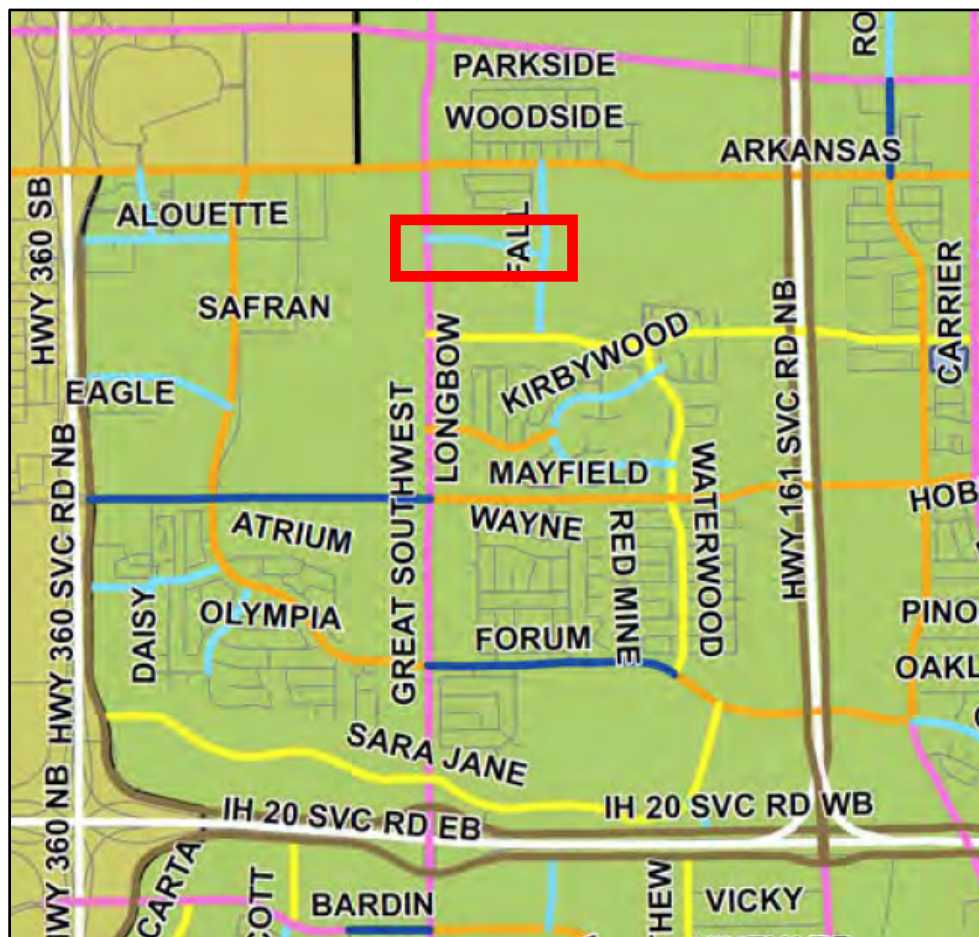
Mr. Douglas S. Cooper, AICP
mycoskie+mcinnis+associates
200 E. Abram Street
Arlington, TX 76010

RE: Grand Prairie Thoroughfare Plan Amendment – E-W Collector Roadway E of Great Southwest Pkwy

Dear Mr. Cooper:

Lee Engineering has completed its evaluation of the proposed E-W Collector roadway between Great Southwest Parkway and Fall Drive in Grand Prairie, Texas. This analysis focuses on the E-W Collector roadway, shown by the red rectangle in the City of Grand Prairie Thoroughfare Plan in **Figure 1**, and evaluates whether this roadway is necessary under future conditions.

Figure 1: City of Grand Prairie 2010 Thoroughfare Plan

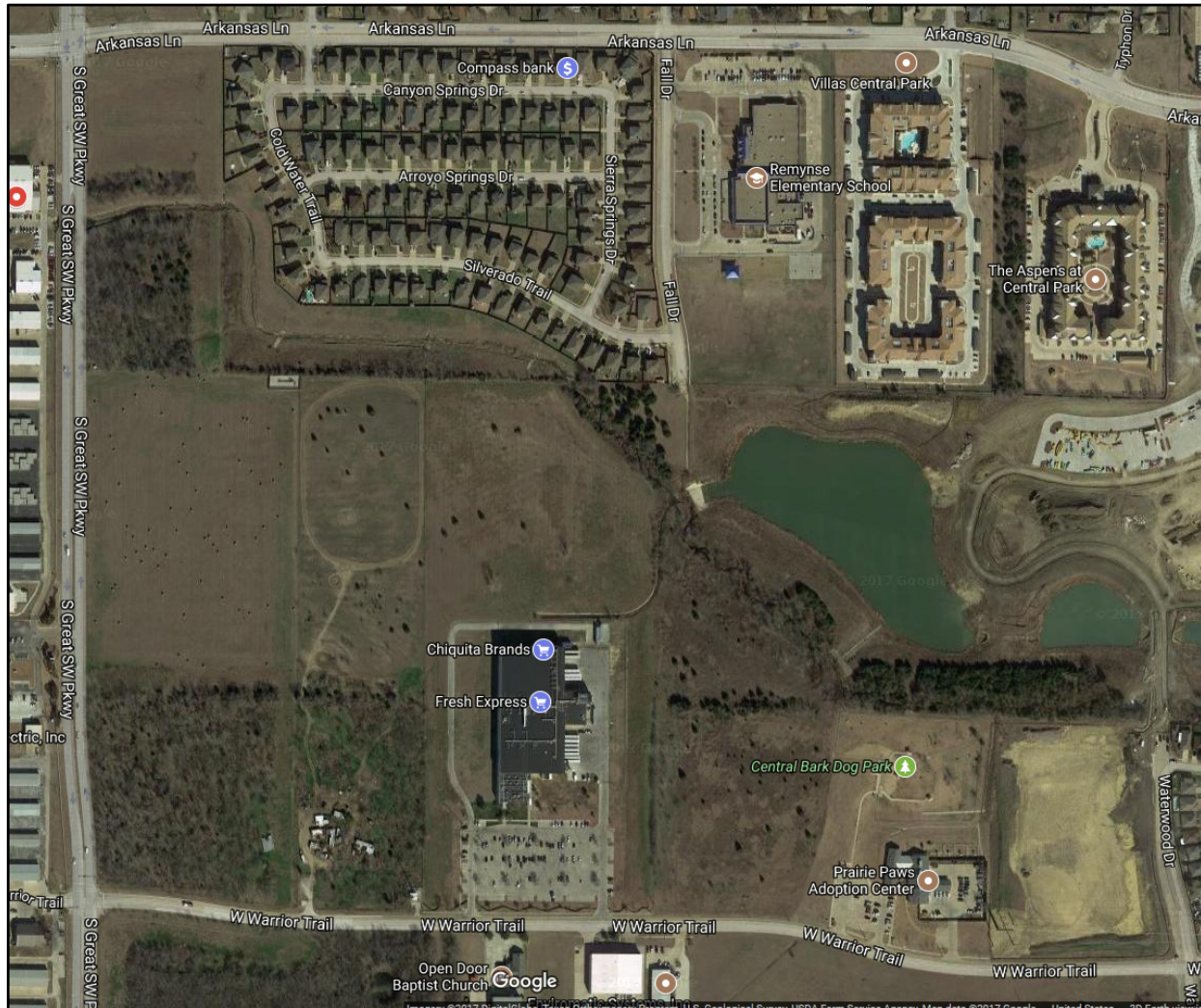


The proposed E-W Collector roadway is proposed to extend for approximately 1,800 feet and connect Great Southwest Parkway with the future extension of Fall Drive. The proposed E-W Collector roadway is classified as a “C2U: Collector, 2 Lane, Undivided” in the City of Grand Prairie 2010 Thoroughfare Plan.

EXISTING CONDITIONS

An aerial map of the existing area is provided in **Figure 2**.

Figure 2: Aerial Map



A description of other roadways in the area includes:

Great Southwest Parkway – Great Southwest Parkway is classified as a “P6D: Principal Arterial, 6 Lane, Divided” in the City of Grand Prairie 2010 Thoroughfare Plan. It is currently a 4-lane divided north-south roadway in the study area and extends from the northern City limits south to Lakeridge Parkway.

Fall Drive – Fall Drive is classified as a “C2U: Collector, 2 Lane, Undivided” in the City of Grand Prairie 2010 Thoroughfare Plan. It currently extends from Arkansas Lane to approximately 1,000 feet south of Arkansas Lane. The Thoroughfare Plan shows that this roadway will eventually be extended south to Warrior Way.

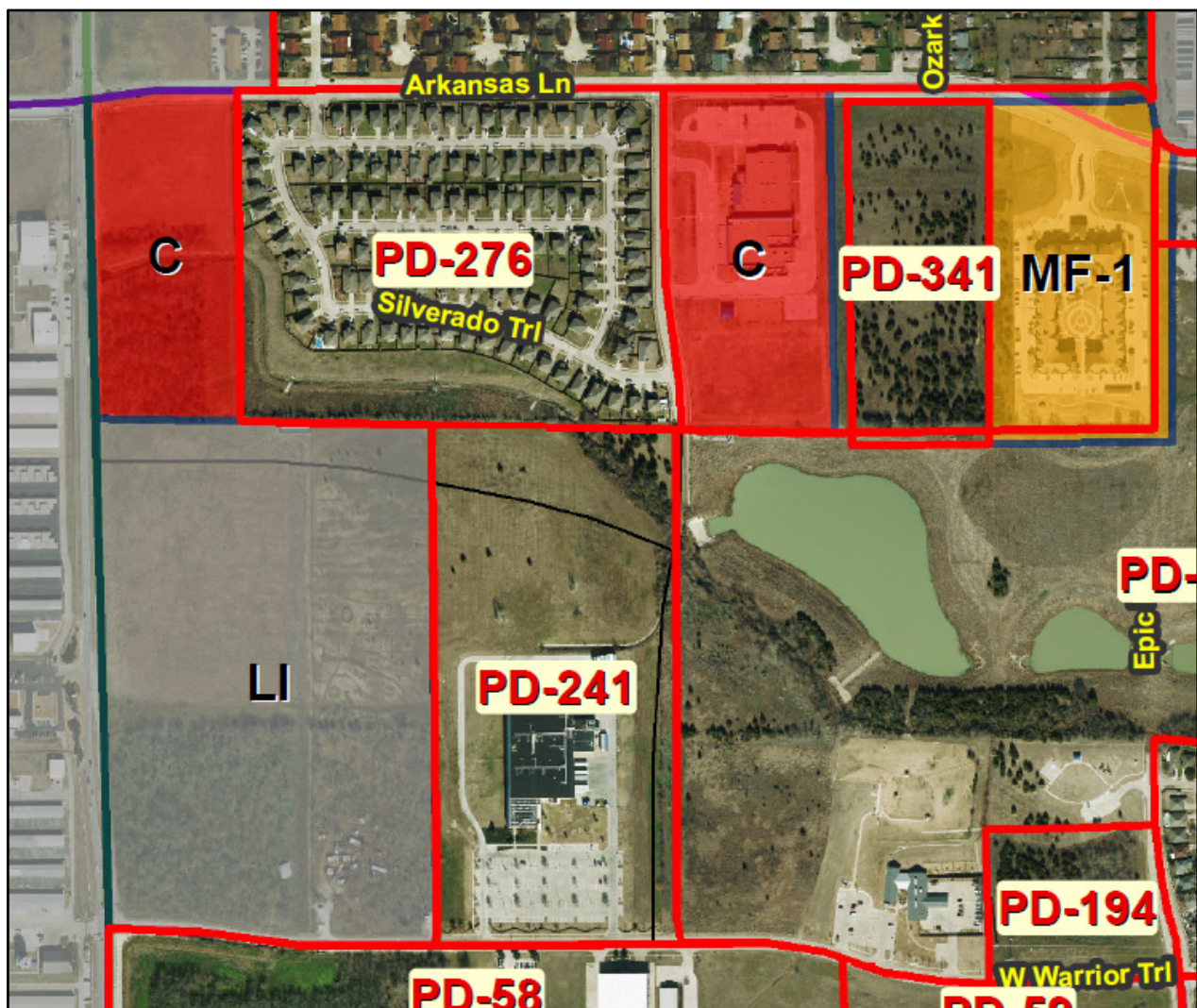
Arkansas Lane – Arkansas Lane is classified as a “P4D: Principal Arterial, 5 Lane, Divided” in the City of Grand Prairie 2010 Thoroughfare Plan. It is currently a 4-lane divided east-west roadway in the study area that extends from the western city limits east to Carrier Parkway.

Warrior Trail – Warrior Trail is classified as a “M4U: Minor Arterial, 4 Lane, Undivided” in the City of Grand Prairie 2010 Thoroughfare Plan. It is currently a 4-lane undivided east-west roadway in the study area that extends from Great Southwest Parkway and terminates to the east at 14th Street (eastern city limits).

PROPOSED DEVELOPMENTS

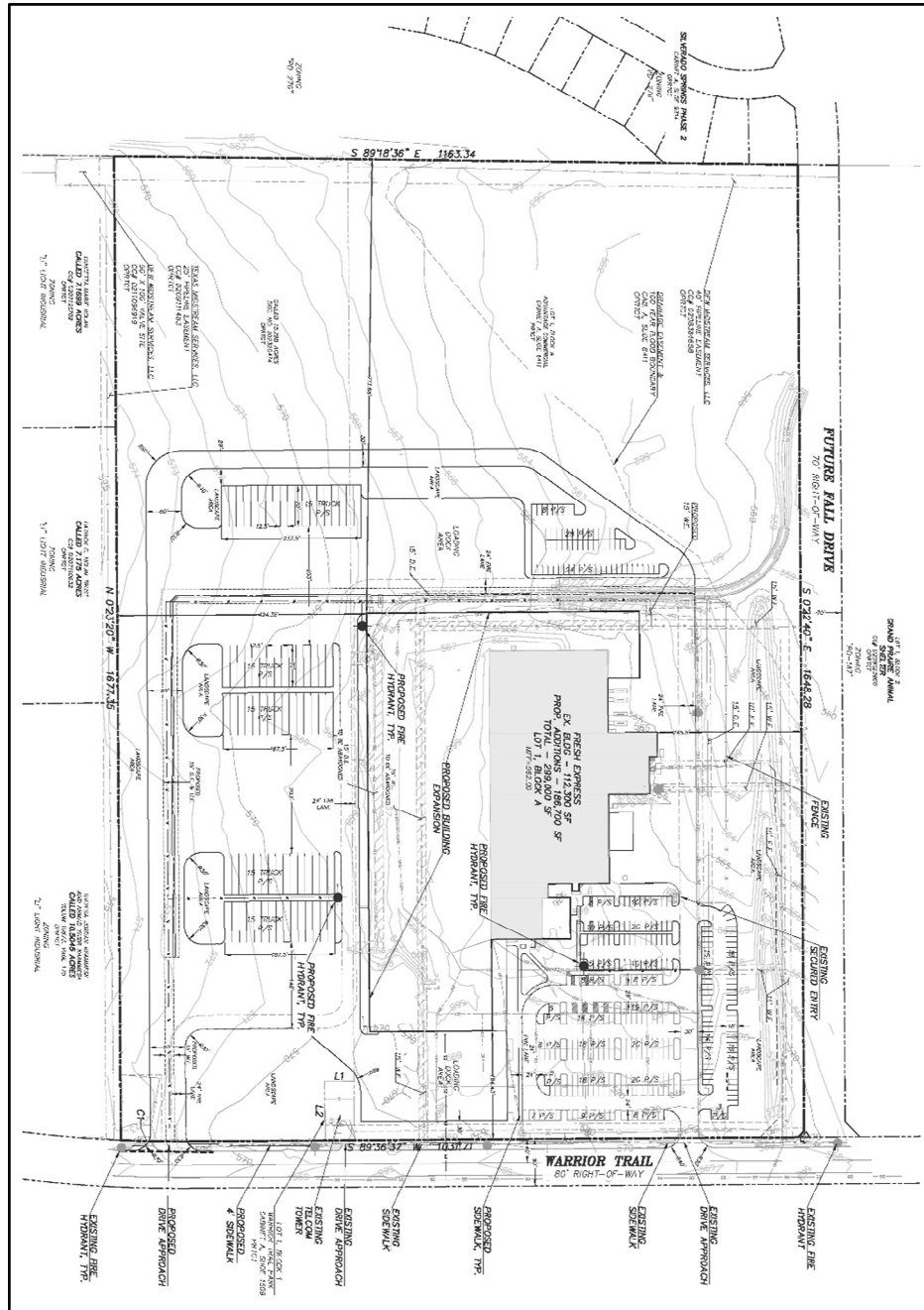
Figure 3 shows the existing zoning in the vicinity of the proposed E-W Collector roadway between Great Southwest Parkway and Fall Drive. The Fresh Express expansion will include some of the existing Light Industrial (“LI”) zoning west of the existing Fresh Express facility. This will result in approximately 25 acres of Light Industrial zoning remaining. Approximately 10 acres of Commercial (“C”) zoning exists on the southeast corner of the Great Southwest Parkway and Arkansas Lane intersection. The property east of the future Fall Drive is owned by City of Grand Prairie

Figure 3: Existing Zoning in Study Area



The existing Fresh Express food processing plant currently located on Warrior Trail, between Great Southwest Parkway and the future Fall Drive, is proposed to expand to the west, increasing the size of the building by 186,700 ft². **Figure 4** shows the proposed site plan of the expanded Fresh Express facility.

Figure 4: Fresh Express Site Plan



The proposed E-W Collector roadway, if constructed, would bisect the northern portion of the Fresh Express property. As shown by the proposed site plan, driveways for the Fresh Express site are provided on Warrior Trail, thus the proposed E-W Collector roadway does not provide access for Fresh Express traffic.

The remainder of the land (approximately 25 acres) between the Fresh Express expansion and Great Southwest Parkway is zoned Light Industrial, as stated previously. For the purposes of this study, we have assumed a floor-area ratio of 0.40 for a facility of this type. This results in a total of 435,000 square feet of Light Industrial land use.

On the southeast corner of the Great Southwest Parkway and Arkansas Lane intersection, approximately 10 acres of Commercial zoning exists. For the purposes of this study, we have assumed a floor-area ratio of 0.25 for a facility of this type. This results in a total of approximately 110,000 square feet of Commercial land use.

TRIP GENERATION OF FUTURE DEVELOPMENT

The number of trips generated by the development is a function of the type and quantity of land use for the development. The number of vehicle trips generated by the proposed developments in the vicinity of the proposed E-W Collector roadway was estimated based on the trip generation rates provided in the publication entitled *Trip Generation Manual, Ninth Edition*, by the Institute of Transportation Engineers (ITE). Estimates of the number of trips generated were made for the AM and PM peak hours, as well as on a daily basis. The trip generation rates, directional splits, and estimated number of trips generated by the proposed developments at build-out are provided in **Table 1**.

Table 1: ITE Trip Generation Calculations for Future Developments

Land Use	ITE Code	Average Weekday			AM Peak Hour			PM Peak Hour		
Equations/Rates ¹										
General Light Industrial	110	T = 6.97(X)			T = 1.18(X) – 89.28			T = 1.43(X) – 157.36		
Shopping Center	820	ln(T) = 0.65*ln(X) + 5.83			ln(T) = 0.61*ln(X) + 2.24			ln(T) = 0.67*ln(X) + 3.31		
Directional Splits ²										
General Light Industrial	110	50 / 50			88 / 12			12 / 88		
Shopping Center	820	50 / 50			62 / 38			48 / 52		
Trips Generated										
Land Use	Amount	Total	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit
General Light Industrial (Fresh Express)	186,700 ft ²	1,302	651	651	131	115	16	110	13	97
General Light Industrial (25 acres)	435,000 ft ²	3,032	1,516	1,516	424	373	51	465	56	409
Shopping Center (10 acres)	110,000 ft ²	7,226	3,613	3,613	165	102	63	639	307	332
TOTAL		11,560	5,780	5,780	720	590	130	1,214	376	838

¹ T = Trip Ends; X = 1,000 Square Feet

² XX / YY = % entering vehicles / % exiting vehicles

SITE ACCESS OF FUTURE DEVELOPMENT

Based on the proposed site plan, the expanded Fresh Express facility will continue to have direct access to Warrior Trail. Warrior Trail provides access to the President George Bush turnpike (PGBT) to the east and Great Southwest Parkway to the west. Using Great Southwest Parkway will allow Fresh Express traffic to have access to other east-west arterials which connect to SH 360. With no driveways planned for the north side of the Fresh Express property, not providing this E-W Collector roadway is predicted to have no impact to the Fresh Express facility.

For the Light Industrial tract of land west of the Fresh Express site, direct access could be provided via driveways on Great Southwest Parkway to the west and Warrior Trail to the east. Similar to the Fresh Express site, these two roadways provide access to destinations north and south of the site, as well as PGBT to the east and SH 360 via nearby arterials (Arkansas Lane and Mayfield Road). An E-W Collector, if provided, would provide a connection only to the future Fall Drive, approximately 1,100 feet to the east and would be anticipated to provide little benefit for traffic generated by the Light Industrial tract.

It can be assumed that the Commercial tract on the southeast corner of the Great Southwest Parkway and Arkansas Lane intersection would have driveway connections to both of these roadways. This access would allow travel north and south on Great Southwest Parkway and west to SH 360 and east to PGBT on Arkansas Lane. A connection between Great Southwest Parkway and the future Fall Drive via the proposed E-W Collector roadway could provide some assistance for travelling between the Silverado Springs subdivision and the Commercial tract but most of the traffic would be expected to use Arkansas Lane.

For the City property east of the existing Fresh Express site and the future Fall Drive, anything that develops would expect to have direct access to Fall Drive and/or Warrior Trail. Access to Great Southwest Parkway would be provided via Warrior Trail to the south or Arkansas Lane to the north by using the future Fall Drive.

Based on the existing and proposed access of the future developments, it is predicted that the proposed E-W Collector roadway would serve as connecting roadway between Great Southwest Parkway and Fall Drive for a small number of vehicles, in addition to bisecting the Fresh Express property. Traffic that would use the proposed E-W Collector roadway has the option of using either of the two arterials (Arkansas Lane and Warrior Trail) for connecting Great Southwest Parkway or Fall Drive.

ROADWAY CAPACITY

Traffic data collected by the City of Grand Prairie in 2013 indicated that a total of approximately 4,000 vehicles travel Arkansas Lane near Great Southwest Parkway on a daily basis. On Warrior Trail, east of Great Southwest Parkway, the 2013 traffic counts indicated approximately 2,400 vehicles travelled on this section of Warrior Trail on a daily basis. The typical daily capacity of four-lane roadways such as Arkansas Lane and Warrior Trail is expected to be approximately 21,000 -24,000 vehicles per day (to maintain Level of Service "C"), based on information provided in the City of Grand Prairie 2010 Comprehensive Plan. Therefore, based on the 2013 daily volumes, projected traffic growth since 2013, and additional traffic generated by the new developments, additional capacity on the adjacent east-west arterials is predicted to be available to handle traffic that would have used the proposed E-W collector roadway.

CONCLUSIONS

As a result of this analysis, the following conclusions can be made:

- All traffic generated by the expansion of the Fresh Express facility will continue to use driveways on Warrior Trail. The proposed E-W Collector roadway will not be needed to serve traffic provided by the Fresh Express expansion. If the proposed E-W Collector roadway is provided, this roadway would bisect the northern portion of the Fresh Express property.
- With the presence of two east-west arterials approximately ½ mile apart, little traffic generated by future developments would be anticipated to use the proposed E-W Collector roadway. These two east-west arterials (Arkansas Lane and Warrior Trail) provide access to roadways further east than Fall Drive and in the case of Arkansas Lane, further west than Great Southwest Parkway.
- Any traffic that would use the proposed E-W Collector roadway has the option of using Arkansas Lane to the north or Warrior Trail to the south.
- Daily traffic volumes collected in 2013 indicate that additional capacity exists on Arkansas Lane and Warrior Trail. Even assuming traffic growth from these 2013 volumes, traffic generated by future developments in the area is predicted to be accommodated by these two roadways, which are predicted to remain operating at less than capacity.
- If the proposed E-W Collector roadway was not provided, it is predicted that no traffic generated by the Light Industrial land uses would use the existing segment of Fall Drive, which currently serves residential and school developments. The only Commercial land use traffic that would use the existing segment of Fall Drive would be traffic to and from the residential neighborhood.
- After Fall Drive is extended south to Warrior Trail, and if the proposed E-W Collector roadway is not provided, the amount of traffic generated by the Light Industrial and Commercial land uses that would use Fall Drive would be less than if the proposed E-W Collector roadway was provided. By not providing the proposed E-W Collector roadway, this helps minimize the impact of all traffic, especially truck traffic, on Fall Drive.

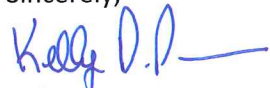
RECOMMENDATION

Based on the results of this analysis, the following recommendation is made:

- Remove the proposed E-W Collector Roadway between Great Southwest Parkway and Fall Drive from the City of Grand Prairie Thoroughfare Plan.

We appreciated the opportunity to provide these services to you. If you have any questions, please feel free to contact me at (972) 248-3006.

Sincerely,



Kelly D. Parma, P.E., PTOE
Senior Project Manager
Lee Engineering, LLC
TBPE Firm F-450