MEMORANDUM

TO: Sherri Sirwaitis, Case Manager
Planning and Zoning Department

FROM: Scott A. James, P.E., PTOE
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Development Services Department/Land Use Review

DATE: ~~September 28, 2018~~ **REVISED December 6, 2018**

SUBJECT: Traffic Impact Analysis for Metric and US 183 (also called Fairfield Residential)
Zoning application C14 – 2018 – 0001

Section 25 – 6 – 114 of the Land Development Code requires that a traffic impact analysis be conducted for a project proposed with a zoning application if the project is anticipated to generate more than 2,000 daily trips. The project site is located on the north side of US Highway 183/ Research Boulevard, west of Metric Boulevard. The applicant is proposing to rezone approximately 4.66 acres from NBG – CI – NP (Commercial Industrial) to NBG – CMU – NP (Commercial Mixed Use) to allow for residential land use.

Staff from the Austin Transportation Department have reviewed and approved the August 21, 2018 *"Traffic Impact Analysis, Fairfield Residential"* submitted by Alliance Transportation Group with the following comments:

Nearby Roadways

Metric Boulevard is classified a collector roadway in north Austin, beginning at the intersection with Wells Branch Parkway and terminating at US Highway 183/ Research Boulevard (north of Howard Lane, Metric Boulevard is called Thermal Drive). Within the study area, Metric Boulevard is a four-lane divided roadway, narrowing to a three-lane divided roadway at the intersection with US Highway 183/Research Boulevard. Metric Boulevard has a posted speed of 35 MPH.

West Rundberg Lane is classified a major arterial roadway beginning west of the intersection with Metric Boulevard and terminating at Cameron Road. Within the study area, West Rundberg Lane is a four-lane divided roadway with a posted speed of 35 MPH.

Burnet Road is classified a major arterial roadway beginning at the intersection with West 40th Street and terminating north of the intersection with Gracy Farms Road. Within the study area, Burnet Road has a posted speed of 45 MPH. North of Research Boulevard, Burnet Road is a six-lane divided roadway with three southbound lanes, two northbound lanes, and a center two-way left-turn lane. South of Research Boulevard, Burnet Road is a five-lane divided roadway with two lanes in each direction and a center two-way left-turn lane.

Northbound Research Boulevard is classified a major urban arterial roadway, serving as a parallel facility to US Highway 183. Within the study area, Research Boulevard serves as the frontage roadway with a posted speed of 50 MPH. Southeast of Burnet Road, each direction offers three travel lanes, and northwest of Burnet Road each direction offers four travel lanes. Sidewalks front both segments within the vicinity of the project.

Trip Generation Estimates

Based on the ITE Trip Generation Manual, 9th Edition, the development will generate approximately 2,548 new daily trips per day (vpd) with 200 trips occurring during the AM peak hour, and 237 occurring during the PM peak hour. Table 1 provides the unadjusted estimated number of daily trips.

Table 1 – Unadjusted estimate of weekday trip generation

		Weekday AM Peak		Weekday PM Peak		Daily Totals
Land Use (ITE Code)	Intensity	Enter	Exit	Enter	Exit	
Apartments (220)	~~400 DU~~ 428 DU	~~40~~ 43	~~160~~ 171	~~154~~ 164	~~83~~ 89	~~2,548~~ 2,718
Totals		~~40~~ 43	~~160~~ 171	~~154~~ 164	~~83~~ 89	~~2,548~~ 2,718

A reduction was applied to the estimated peak hour trip generation rates by the applicant. Table 2 on the following page presents the adjusted estimated trips for daily and peak hours.

Table 2 – Adjusted estimate of weekday trip generation							
		Weekday AM Peak			Weekday PM Peak		
Land Use (ITE Code)	Intensity	Enter	Exit	Total	Enter	Exit	Total
Apartments (220)	~~400~~ DU 428 DU	~~11~~ 12	~~147~~ 154	~~158~~ 167	~~108~~ 110	~~39~~ 42	~~147~~ 152
Totals		~~11~~ 12	~~147~~ 154	~~158~~ 167	~~108~~ 110	~~39~~ 42	~~147~~ 152

Data Collection

Traffic counts were conducted on November 29, 2017 when public schools were in session, and driveway counts for the existing land use were conducted to determine the current traffic volumes.

Trip Distribution

Table 3 presents how the site generated traffic was assigned to the surrounding network of public streets. These percentages were used to determine the impact of the proposed development upon existing transportation infrastructure.

Table 3 –Directional Distribution of Site Traffic		
Direction	AM Trips	PM Trips
Research Blvd (westbound)	40%	45%
Research Blvd (eastbound)	45%	40%
Metric Blvd	13%	13%
Rundberg Lane	2%	2%
Totals	**100%**	**100%**

Traffic Analysis Methodology

Table 4 on the following page presents the Highway Capacity Manual (HCM) definitions of 'levels of service' for both ***signalized and unsignalized*** intersections. Within the City of Austin, LOS "D" is considered the acceptable threshold for signalized operations and for intersections where the LOS is projected at "E" or lower, mitigation should be proposed.

Table 4 – Summary of Level of Service as defined by HCM		
Level of Service	**Signalized Intersection Average Total Delay (Sec/Veh)**	**Unsignalized Intersection Average Total Delay (Sec/Veh)**
A	≤10	≤10
B	>10 and ≤20	>10 and ≤15
C	>20 and ≤35	>15 and ≤25
D	>35 and ≤55	>25 and ≤35
E	>55 and ≤80	>35 and ≤50
F	>80	>50

The following tables present a summary of the analysis performed within the TIA. Table 5 presents the existing peak hour levels of service (seconds delay per vehicle) modeled for current year.

Table 5 – Existing Levels of Service (Year 2017)				
Intersection	**Control**	**Peak Hour**	**Delay**	**LOS**
Metric Boulevard and West Rundberg Lane	Signal	AM	27.3	C
		PM	36.5	D
Metric Boulevard and Northbound Research Boulevard	TWSC	AM	**69.3**	F
		PM	**39.3**	E
Burnet Road and Northbound Research Boulevard	Signal	AM	50.3	D
		PM	**67.1**	E
Burnet Road and Southbound Research Boulevard	Signal	AM	**59.6**	E
		PM	**93.7**	F

Table 6 on the following page presents the model results for the "No Build" and "Built" conditions for the year 2020.

Table 6 – No Build and Built w/o mitigation Levels of Service (Year 2020)					
		No Build Conditions		Built w/o mitigation	
Intersection	Peak Hour	Delay	LOS	Delay	LOS
Metric Boulevard and West Rundberg Lane	AM	28.5	C	29.1	C
	PM	41.4	D	41.5	D
Metric Boulevard and Northbound Research Boulevard	AM	**90.3**	**F**	**263.6**	**F**
	PM	**54.9**	**F**	**117.7**	**F**
Burnet Road and Northbound Research Boulevard	AM	**60.8**	**E**	**64.9**	**E**
	PM	**72.6**	**E**	**74.1**	**F**
Burnet Road and Southbound Research Boulevard	AM	**71.3**	**E**	**72.9**	**E**
	PM	**109.5**	**F**	**113.9**	**F**
Driveway 1 and Metric Boulevard	AM	-	-	0.3	A
	PM			0.5	A
Driveway 2 and Metric Boulevard	AM	-	-	0.1	A
	PM			0.4	A
Driveway 3 and Research Boulevard	AM	-	-	1.1	A
	PM			0.2	A

Summary of Future Conditions

The following conditions were identified in the TIA, as reflecting the future conditions of the project development, assuming all of the recommended improvements are implemented. Table 7 presents the results for the "Built with mitigations" scenario for the year 2020.

Table 7 – Future Levels of Service Built w/ mitigations scenario (Year 2020)				
Intersection	Control	Peak Hour	Delay	LOS
Burnet Road and Northbound Research Boulevard	Signal	AM	54.8	D
		PM	51.6	D
Burnet Road and Southbound Research Boulevard	Signal	AM	54.1	D
		PM	54.8	D

Recommended Transportation Improvements

The TIA identified improvements to the surrounding public infrastructure to mitigate the calculated impact to traffic resulting from this development. The following is a summary of the proposed improvements:

1) Revise the signal timings for the interchange of US Hwy/Research Boulevard and Burnet Road
2) Construct a dedicated westbound deceleration lane (with 200 feet of storage) for the approach to Driveway 3 on northbound Research Boulevard

Review staff discussed the need to implement physical improvements concurrently with the development of the site and prioritized the infrastructure elements accordingly. Therefore, after review and acceptance of the TIA findings, the following goals were identified:

1) Wherever feasible, staff prefers to have the developer construct physical improvements instead of posting fiscal towards the estimated costs of construction.

2) In locations where more than one improvement is identified, staff would accept a fully constructed single improvement in the place of several partial funded elements.

3) Where the suggested or recommended improvements are within or along Texas Department of Transportation facilities, the City of Austin shall defer to TxDOT review and approval for said transportation improvements.

Conclusions and Recommendations

After consultation with the applicant, transportation review staff recommends approval of this zoning application to allow up to ~~400~~ 428 residential apartments, subject to the following conditions:

Prior to the 3rd reading of City Council, the applicant shall commit to the following:

1) Dedicate up to 200 feet of right-of-way (as measured from the existing centerline) along US Highway 183 in accordance with the Austin Metropolitan Area Transportation [LDC 25-6-51 and 25-6-55].

2) The applicant shall post fiscal for the following transportation improvements:

Table 8 – Phase 1 List of Improvements			
Location	**Improvements**	**Total Cost**	**Developer Share %**
Burnet Road and Research Boulevard	Modify Signal Timings	$5,000.00	100%
Research Boulevard and Driveway 3	Westbound Deceleration Lane	$77,650.00	100%
	Total cost participation	**$82,650**	**$82,650**

At the time of Site Plan Application, the applicant shall commit to the following:

3) Revise the signal timings for the interchange of US Hwy 183/Research Boulevard and Burnet Road

4) Construct a dedicated westbound deceleration lane (with 200 feet of storage) for the approach to Driveway 3 on northbound Research Boulevard as approved by the Texas Department of Transportation. A Donation Agreement shall be approved and executed prior to approval of the Site Plan Application.

5) The location and number of driveways shall be reviewed at the time of the site plan application in accordance with City of Austin standards. The traffic impact analysis does not establish the location(s) and/or number of driveways.

6) Development of this property should not vary from the approved uses, nor exceed the approved intensities **listed above** and estimated traffic ~~generation~~ assumptions within the TIA document (dated August 21, 2018), including land use, trip generation, trip distribution, traffic controls and other identified conditions.

7) The findings and recommendations of this TIA memorandum remain valid until ~~September 28, 2023~~, **December 6, 2023,** after which a revised TIA or addendum may be required.

Scott A. James, P.E., PTOE
Development Services Department