

TECHNICAL MEMORANDUM

To: Conner Roberts, Planner II
City of Rowlett, TX

From: Rod Kelly, P.E.
Kelly & Associates

Date: May 3, 2022

RE: Updated Preliminary Traffic Impact Assessment – Proposed Miller Creekview Village, in Rowlett, Texas

PURPOSE

The purpose of this memorandum is to document the results of the updated preliminary traffic impact assessment to determine the adequacy of the street capacity adjacent to the proposed Miller Creekview Village mixed-use development to be located in the southeast quadrant of the intersection of Miller Rd. and Rowlett Rd., as shown in **Figure 1**.

Figure 1 – Updated Proposed Development Site

Table 2A - Revised Trip Generation Table for Proposed Miller Creekview Village Traffic accessing Rowlett Road

Land Use	ITE Code	Quantity	Units	Trips/ Unit	Daily Trip Rate	Daily Trips	Daily Trips In	Daily Trips Out	AM PK Hr Trip Rate	AM Pk Hr Trips	AM Pk Hr Trips In	AM Pk Hr Trips Out	PM PK Hr Trip Rate	PM Pk Hr Trips	PM Pk Hr Trips In	PM Pk Hr Trips Out
Grocery Store	850	20,000	Square Feet	/1K GLA	93.84	1,877	938	938	2.86	57	34	23	8.95	179	91	88
Retail	820	15,000	Square Feet	/1K GLA	37.01	555	278	278	0.84	13	8	5	9.03	135	65	70
Office	710	5,000	Square Feet	/1K GLA	37.75	294	147	147	0.94	7	4	3	3.81	29	15	14
Dental Office	720	8,000	Square Feet	/1K SF	36.00	288	144	144	3.10	25	20	5	3.93	31	9	23
Restaurant	932	7,000	Square Feet	/1K SF	107.20	750	375	375	9.57	67	37	30	9.05	63	39	25
Total Development		55,000	Square Feet			3,764	1,882	1,882		169	102	66		438	219	219

Table 2B - Trip Generation Table for Proposed Miller Creekview Village Traffic accessing Miller Road

7000	ITE Code	Quantity	Units	Trips/ Unit	Daily Trip Rate	Daily Trips	Daily Trips In	Daily Trips Out	AM PK Hr Trip Rate	AM Pk Hr Trips	AM Pk Hr Trips In	AM Pk Hr Trips Out	PM PK Hr Trip Rate	PM Pk Hr Trips	PM Pk Hr Trips In	PM Pk Hr Trips Out
Single Family Residential	210	39	Dwelling Units	/DU	9.44	368	184	184	0.74	29	7	22	0.99	39	24	14
Total Development		39	Dwelling Units			368	184	198		29	7	22		39	24	14

The directions of approach and departure for the development traffic during the AM and PM peak hour period, were derived from examining the distribution of traffic from 2019 TxDOT 24 hour traffic counts obtained from the TxDOT Transportation Planning and Programming Division's Statewide Traffic Analysis and Reporting System II. These counts are included in **Appendix A** at the end of the memorandum. Based on this information, the estimated general approach and departure traffic patterns were developed for the proposed residential and retail development site and are shown in **Table 3**.

Table 3 – Directional Distribution of Development Traffic

Directions	AM Peak Hour		PM Peak Hour	
	In	Out	In	Out
	% From	% To	% From	% To
North	13%	17%	33%	28%
South	30%	37%	30%	24%
East	33%	22%	14%	28%
West	24%	24%	23%	20%
Total	100%	100%	100%	100%

With this information, the number and distribution of vehicle trips to and from the Miller and Rowlett Road separate portions of the development. This information is shown in **Table 4**.

Table 4 – 2024 Peak Hour Traffic Volumes Accessing Development

Development Access	AM Peak Hour	PM Peak Hour
NB Rowlett Road	15	74
SB Rowlett Road	33	68
EB Miller Road	26	86
WB Miller Road	22	71
Total Directions	96	299

In addition, the background traffic growth rate of 2% applied to the 2019 traffic counts in this letter was extended to 2024, the buildout year of the current proposed development. These projections are shown in **Table 5** to be used for projecting the background traffic forward to the buildout year.

Table 5 – Annual Growth of Background Traffic

5 Year Growth Rate of Average Daily Traffic (ADT) on IH30 in vicinity of Miller Road at			
Year	ADT	Change	% Change
2015	160939		
2016	161278	339	0.21%
2017	164507	3229	2.00%
2018	164168	-339	-0.21%
2019	164465	297	0.18%
Avg.			0.55%
Use			2.00%
Year	Per Year	Total	Built
2019		1	
2020	1.02	1.02	
2021	1.02	1.04	
2022	1.02	1.06	
2023	1.02	1.08	
2024	1.02	1.10	Buildout

Roadway Capacity Assessment

Next, the preliminary assessment was made to determine the impact of the combination of development site and background non-site traffic on the street accessing the proposed development. Capacity values for roadways (divide / one-way and undivided by land use area type and functional class. These values, presented in **Table 6**, are used by the North Central Texas Council of Governments (NCTCOG) to determine planning-level directional hourly capacities on roadway links in their regional travel models. Following **Table 5** is a summary of the roadway level of service used within the model.

Table 6 – Roadway Link Capacity Analysis Values

Area Type	Functional Class						
	Freeway	Principal Arterial	Minor Arterial	Collector	Freeway Ramp	Frontage Road	HOV
CBD	n/a	725	725	475	1250	725	n/a
Outer Business District	n/a	775	750	500	1375	775	n/a
Urban Residential	n/a	850	825	525	1425	850	n/a
Suburban Residential	n/a	925	900	575	1600	900	n/a
Rural	n/a	1025	975	600	1725	975	n/a

* Service volumes at Level of Service E (the model requires LOS E service volumes)

- if Volume/Service Volume Ratio is ≤ 0.45 , then LOS = A or B
- if Volume/Service Volume Ratio is > 0.45 and ≤ 0.65 , then LOS = C
- if Volume/Service Volume Ratio is > 0.65 and ≤ 0.80 , then LOS = D
- if Volume/Service Volume Ratio is > 0.80 and ≤ 1.00 , then LOS = E
- if Volume/Service Volume Ratio is > 1.00 , then LOS = F

For this roadway capacity assessment, Miller Road and Rowlett Road are both 4-lane divided roadways in a “suburban residential” area. However, from the Rowlett Thoroughfare Plan (2015 Amended), Miller Road is classified as a 6-lane divided Major Thoroughfare and is classified in **Table 6** as a Principal Arterial. Rowlett Road is classified as a 6-lane divided Major Thoroughfare in the Plan north of Miller Road, but only a 4-lane divided, Secondary Thoroughfare south of Miller Road. However, there is a wide median to the south that will accommodate additional lanes. **Table 7** shows a link capacity analysis conducted for the proposed development 2024 background only and background with development buildout conditions.

Table 7 – Roadway Link Analysis Results

Miller Road (East of Rowlett Road)									
Analysis Period	Direction	Lane Configuration	Capacity	AM Peak Hour			PM Peak Hour		
				Volume	V/C	LOS	Volume	V/C	LOS
2024 Buildout Year Background Traffic	EB	4U	1850	872	0.47	C	1119	0.60	C
	WB		1850	1027	0.56	C	638	0.34	A/B
2024 Buildout Year Total Traffic	EB	4U	1850	889	0.48	C	1193	0.64	C
	WB		1850	1052	0.57	C	689	0.37	A/B
Rowlett Road (South of Miller Road)									
Analysis Period	Direction	Lane Configuration	Capacity	AM Peak Hour			PM Peak Hour		
				Volume	V/C	LOS	Volume	V/C	LOS
2024 Buildout Year Background Traffic	NB	4U	1850	939	0.51	C	1373	0.74	D
	SB		1850	1467	0.79	D	939	0.51	C
2024 Buildout Year Total Traffic	NB	4U	1850	948	0.51	C	1418	0.77	D
	SB		1850	1482	0.80	D	991	0.54	C

Conclusions

The results indicate that there are some differences in the impacts on the two streets providing access to the two parts of the development. Miller Road appears to receive the least impact, achieving LOS C, or better, in both directions during the AM and PM peak hour. This is expected for both the background traffic and the background traffic with site traffic. Rowlett Road achieved LOS Cs in one direction and Ds in the other direction in the AM peak hour and the reverse in the PM peak hour. This is expected for both the background traffic and the background traffic with site traffic. However, as mentioned earlier in the memorandum, Rowlett Road has a wide median that could provide space for any needed capacity mitigation measures.