

Technical Memorandum

To: Ian Schwickert, Real Estate Equities
From: Max Moreland, PE
Date: April 24, 2019
Re: Traffic Assessment – Senior Residential Development in Lauderdale

A residential building with 114 affordable senior living units is proposed in Lauderdale, Minnesota. This development will be at 1795 Eustis Street on the southwest corner of the Eustis Street/Spring Street intersection.

This technical memorandum presents a high-level traffic analysis of the proposed development. The primary purpose is to determine the impact of this development on surrounding roadways. A site plan dated February 18, 2019 is attached for reference.

Study Area

Table 1 shows the primary characteristics of the key roadway corridors around this site that traffic from this development would be anticipated to utilize.

Table 1 – Study Corridor Characteristics

Name	Designation ¹	Classification ²	Daily Traffic Volume ³	Speed Limit	Lanes	Fixed Route Transit	Bike/Ped Facilities
Eustis Street – Larpenteur to Roselawn	Ramsey CR 127 ⁴	Major Collector	1,200	30 mph	2 undivided	None	None
Larpenteur Avenue – East of Eustis Street	Ramsey CSAH 30	A Minor Arterial	14,300	30 mph	4-5 undivided	1 Bus Route	Sidewalks Both Sides
Larpenteur Avenue – West of Eustis Street	Ramsey CSAH 52	A Minor Arterial	15,100	30 mph	4-5 divided	2 Bus Routes	Sidewalks Both Sides
Roselawn Avenue	Ramsey CSAH 26 ⁴	Major Collector	1,800	30 mph	2 undivided	None	None

¹CR = County Road, CSAH = County State Aid Highway

² Source: Lauderdale Comprehensive Plan

³ Source: MnDOT’s Traffic Mapping Application

⁴ Eustis Street and Roselawn Avenue are in the process of changing to be under City of Lauderdale jurisdiction.

Estimated Traffic Generation

Trip generation for the proposed development was established using the Institute of Transportation Engineers’ (ITE) *Trip Generation Manual, 10th Edition*. Spack Consulting also has local data compiled through various studies across the Twin Cities. Table 2 shows the resulting new trips based on ITE and local data, respectively.

Table 2 – Trip Generation – New Trips on a Weekday

Land Use (size)	Data Source	Daily			AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total	In	Out	Total
Senior Adult Housing – Attached (114 Units)	ITE	211	211	422	8	15	23	16	13	29
Senior Living Center (114 Units)	Local	193	193	386	13	8	21	12	15	27

As shown in Table 2, the trip generation based on local data is similar to the trip generation forecasts based on the national ITE dataset. Since the ITE data is higher, to present a conservative analysis those are the volumes used in the analysis in this memorandum.

Daily Volume Analysis

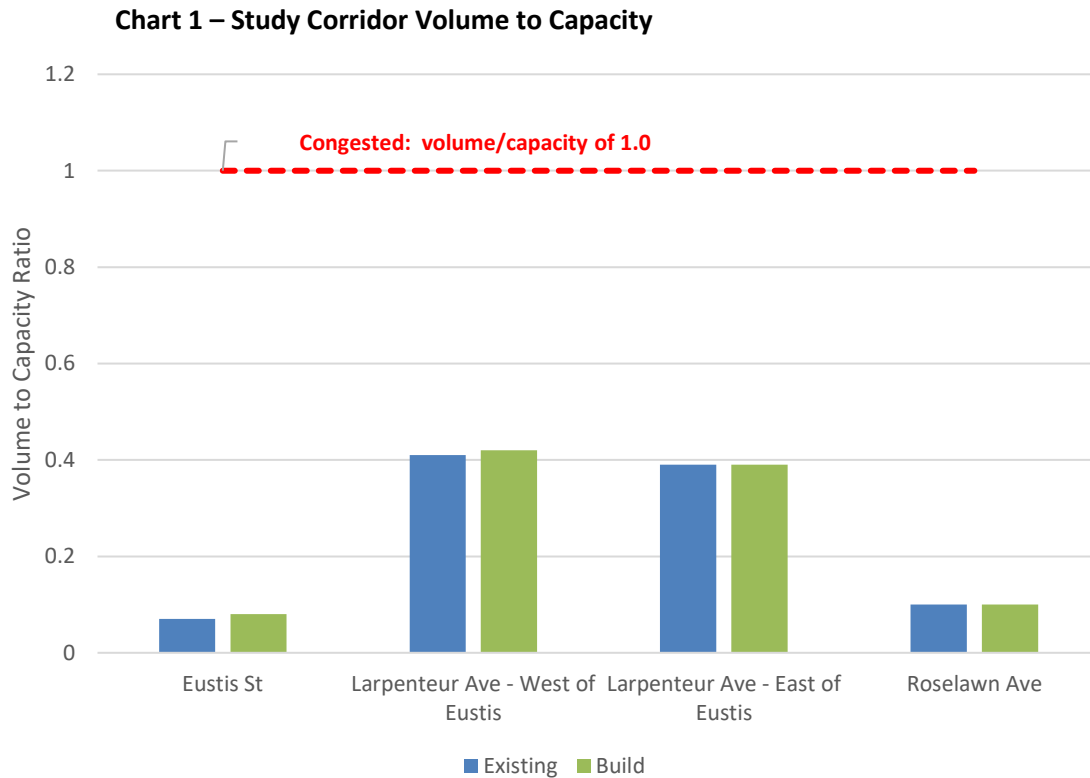
While many factors contribute to a road feeling congested, the two biggest factors are volume, how many vehicles are using the road, and capacity, how many vehicles the road can accommodate per day. Transportation professionals use these pieces of information to create a ratio of volume to capacity. For example, a road with a volume to capacity ratio of 1.0, where the traffic demand is nearly equal to the traffic supply, will feel congested to motorists.

Below is a rough guide of the daily traffic volumes different types of roads can accommodate based on Exhibit 16-16 of the *Highway Capacity Manual, 6th Edition*. If the Average Daily Traffic (ADT) volume on a roadway is below the threshold, then it is considered un-congested. If the daily volume falls inside the range, the road is almost congested. If the daily volume is over the threshold, the road is congested.

- 2-Lane (one in each direction with left turn lanes at busy intersections and coordinated signals), undivided street, are considered congested with a volume between 8,900 to 18,300 vehicles per day.
- 4-Lane (two in each direction with left turn lanes at busy intersections and coordinated signals), – 18,600 to 36,800 vehicles per day.

To provide an initial planning level screening, Chart 1 provides volume to capacity ratios of the study corridors to determine if either of the roadway corridors is nearing the planning-level capacity. The Existing and Build scenarios are looked at. To analyze the Build scenario, total daily volumes from Table 2 were added to the existing roadway volumes per the following distribution pattern:

- 60% to/from the west on Larpenteur Avenue
- 20% to/from the east on Larpenteur Avenue
- 20% to/from the east on Roselawn Avenue



As shown in Chart 1, the surrounding roadways are forecast to be able to accommodate the increase in roadway traffic from this proposed development.

Traffic Assessment

The forecast traffic generated from the development is not anticipated to cause significant impacts on any of the surrounding intersections or roadways in such a way that mitigation would be required.

The Institute of Transportation Engineers’ *Transportation Impact Analyses for Site Development* report recommends completing a detailed traffic impact study when a proposed development’s expected trip generation is 100 or more new trips in a peak hour. MnDOT uses a slightly different threshold of 2,500 daily trips or 250 peak hour trips. These thresholds represent the level where new traffic on the surrounding roadways may impact operations. Under those thresholds, the traffic generation is not significant and not expected to meaningfully alter or change the current operations. Based on this and the daily volume capacity analysis in Chart 1, a full traffic impact study is not necessary for this proposed development.

Parking Analysis

The underground parking level is proposed to include 98 parking spaces. The surface parking level will accommodate 24 parking spaces. That totals to 122 parking spaces on site.

The Lauderdale City Code lists a minimum off-street parking requirement of 1.5 spaces per dwelling unit for multiple family dwellings. For a 114-unit building that would equate to 171 off-street parking spaces. Per the City Code, this development falls short of the parking requirement. However, since this is going to

be a senior residential development, the parking demand is different than at a standard apartment building.

The Institute of Transportation Engineers (ITE) has put together a document, *ITE Parking Generation, 5th Edition*, that compiled parking demand data from different land uses. From that document, the average peak period parking demand at senior adult housing developments is 0.61 parking spaces per unit. For a 114-unit building that leads to a peak parking demand of 70 parking spaces. The 122 parking spaces this development is proposing to include on site well exceeds the anticipated parking demand for the site. That means all parking for this site is anticipated to be able to be accommodated off-street and without the need to use any on-street spaces.

Site Accesses & Circulation

Vehicular access to the development will be via one site access on Eustis Street. The current site has two accesses on Spring Street and one access on Malvern Street that will be removed resulting in a net decrease in accesses to this site. The alley directly south of this site currently has an outlet on to Malvern Street. That outlet will be removed and the alley will lead into the site parking area allowing for alley access via the one access to the site. It is not anticipated that any traffic going to/from the site will use the alley as it will be a faster route to utilize Eustis Street.

Two-way traffic operations will be able to be accommodated within the site's parking area. A loop around the surface parking area is provided to allow for drop-off/pick-up operations at the main doors. Based on the parking layout, it is anticipated most site traffic will utilize the underground parking area. Vehicles accessing the underground parking area do not need to go by the main door leading to the lobby meaning drop-off/pick-up operations will be able to occur with little conflicts.

Sidewalks are provided adjacent to the building throughout the parking area allowing for access to all building doors. No sidewalks currently exist on the streets surrounding the site so the sidewalks around the building will be for internal use only.

Conclusions

The proposed development is expected to generate approximately 400 new daily trips and about 40 peak hour trips on a typical weekday. This level of traffic is below the ITE and MnDOT thresholds generally cited for when a more detailed traffic impact study is necessary. In addition, a daily volume capacity analysis shows the surrounding roads are able to accommodate the expected increase in traffic and remain well below the planning-level capacities of each study road.

Based on this information, traffic from this development is not anticipated to cause significant impacts on any of the surrounding intersections or roadways in such a way that mitigation would be required.

The amount of off-street parking to be provided on site is anticipated to exceed the actual parking demand of the site. Good circulation is also anticipated at the site.

Attachments

- Site Plan

