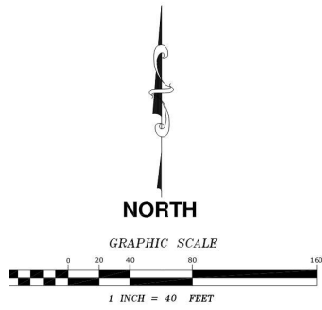


# Attachments



## Site Plan

1" = 80'-0"

## CONCEPT DESIGN PLAN

D2 | 20042

## Applewood Pointe of Blaine

BLAINE, MINNESOTA  
08/28/20

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## EXTERIOR FINISH SCHEDULE

S1	PREFINISHED VINYL SHAKE SIDING
S2	HORIZONTAL STEEL SIDING
S3	RAISED STUCCO TEXTURED PANEL SIDING - FIELD PAINTED
M1	BRICK
M2	MANUFACTURED VINYL Siding
CMU	COLORADO ROCK FACE BLOCK



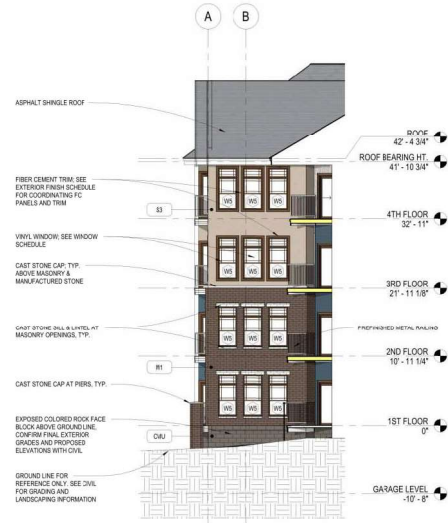
1 NORTH ELEVATION - INTERIOR  
SCALE 1/8" = 1'-0"



2 EAST ELEVATION - INTERIOR  
SCALE 1/8" = 1'-0"







1 WEST ELEVATION - NORTH LEG  
SCALE 1/8" = 1'-0"



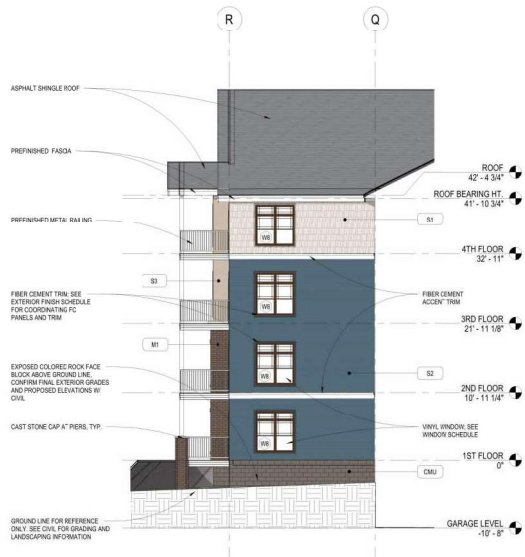
2 NORTHWEST ELEVATION  
SCALE 1/8" = 1'-0"



3 WEST ELEVATION  
SCALE 1/8" = 1'-0"



1 SOUTH ELEVATION  
SCALE: 1/8" = 1'-0"



2 EAST ELEVATION - REGENT  
SCALE: 1/8" = 1'-0"



3 EAST ELEVATION - SOUTH LEG  
SCALE: 1/8" = 1'-0"











# Technical Memorandum

**To:** Dave Young, Senior Development Manager  
**From:** Jonah Finkelstein, PE  
**Date:** December 17, 2020  
**Re:** Trip Generation Assessment – Applewood Pointe of Blaine

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## Purpose of Report and Study Objectives

United Properties has hired Spack Solutions to examine the trip generation impacts of a potential development to be located at 11967 Radisson Road. The city's current intentions are to develop this parcel as a medium density residential development. However, the proposed plan falls under the category of high density residential. Based on this, the City of Blaine has requested a traffic memo be completed examining the difference in site related trips when comparing the proposed high density development to a medium density development. This review will help provide additional information guiding their decision on what density and type of development to construct on the parcel.

This technical memorandum presents this high-level traffic analysis.

## Conclusions

The 102-unit high density senior residential development is expected to generate less traffic than the 94-unit medium density residential development. These results were achieved using both nationally collected ITE data and locally collected Spack Solution data. The following list shows a more specific breakdown of how many fewer trips are expected to be generated by the 102-unit senior development when compared to the 94-unit residential development:

- ITE Data
  - 310 less daily trips.
  - 23 less a.m. peak hour trips
  - 24 less p.m. peak hour trips
- Locally Collected Data
  - 142 less daily trips
  - 24 less a.m. peak hour trips
  - 24 less p.m. peak hour trips

Additionally, upon routing these new trips through the adjacent transportation system, under the two access and single access configurations, the 102-unit high density senior residential development is expected to result in smaller volume increases at adjacent intersections than that of a 94-unit medium density residential development. This is the case for the a.m. peak hour, p.m. peak hour, and standard weekday condition.

Based on these results the 102-unit high density senior residential development is expected to generate less trips and reduced traffic impacts than a 94-unit medium density residential development.

## Site Characteristics

The analysis site is located at 11967 Radisson Road in Blaine, MN. The proposed site, as shown in the site plan provided by United Properties, includes a 102-unit senior cooperative building with two accesses. A right-in/right-out access on Radisson Road as well as a full access connecting to 121 Avenue/Vermillion Street.

As a part of this study the City has requested that two site access configurations are reviewed. One analyzing the two-access condition stated above, and a second examining if only the full access on 121 Avenue/Vermillion Street is provided.

Finally, and as mentioned earlier, the City's current plan is to develop this parcel as a medium density residential development. The 102-unit senior cooperative building does not fall under this category and falls into the high density residential development category. Based on conversations with the City, a 94-unit residential development would fall within the medium density development classification and was noted for use in this analysis.

## Trip Generation Forecasts

The traffic forecasts for both land-uses are based on the data and methods published in the *Institute of Transportation Engineers (ITE) Trip Generation Manual, 10<sup>th</sup> Edition*. The *ITE Trip Generation Manual* is a compilation of traffic data for various land uses from existing developments throughout the United States. Locally collected data, captured by Spack Solutions, is also presented. Table 1 presents the weekday trip generation for each development and the difference in trips between the two for both ITE and Local Data.

**Table 1 – Weekday Trip Generation**

Source	Description - size	Daily Trips		AM Peak Hour		PM Peak Hour	
		Entering	Exiting	Entering	Exiting	Entering	Exiting
ITE 220	Multi-family Housing (low rise) – 94 Units	344	344	10	33	33	19
ITE 252	Senior Adult Housing - Attached – 102 Units	189	189	7	13	15	13
<b>DIFFERENCE</b>		<b>155</b>	<b>155</b>	<b>3</b>	<b>20</b>	<b>18</b>	<b>6</b>
Local	Townhomes – 94 Units	255	255	11	32	32	19
Local	Senior Living Center – 102 Units	184	184	13	6	11	16
<b>DIFFERENCE</b>		<b>71</b>	<b>71</b>	<b>-2</b>	<b>26</b>	<b>21</b>	<b>3</b>

As shown in Table 1, the medium density residential development of 94 units is projected to generate more traffic over a standard weekday and during both peak hours than the proposed high density senior living facility. In total, 310 less daily trips, 23 less a.m. peak hour trips, and 24 less p.m. peak hour trips are expected by the senior living facility when based on ITE data. Local data provided similar results with 142 less daily trips, 24 less a.m. peak hour trips, and 24 fewer p.m. peak hour trips than the medium density development.

Based on these results, the 102-unit high density senior residential development is projected to generate less traffic and have a smaller impact on the surrounding transportation network than a medium density residential development.

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## Roadway Volumes

Utilizing available sources, the surrounding existing roadway volumes were reviewed. The resulting daily traffic volumes, as determined through MnDOT's Traffic Mapping Application and turning movement counts provided by the County, are as follows:

- i. 11,300 vehicles per day on Radisson Road north of Lakes Parkway
- ii. 1,850 vehicles per day on Cloud Drive east of Radisson Road
- iii. 3,000 vehicles per day on Lake Boulevard
- iv. 7,300 vehicles per day on Lakes Parkway east of Radisson Road
- v. 21,000 vehicles per day on Radisson Road south of Lakes Parkway
- vi. 1,700 vehicles per day on Lakes Parkway west of Radisson Road
- vii. 1,600 vehicles per day on Cloud Drive west of Radisson Road

Based on the available roadway data, all of the study corridor's daily volume levels are well within their planning level capacities under the existing condition and lane configurations. Additionally, with the proposed senior living facility projecting less than 400 new daily trips, no roadways are projected to exceed their planning level capacities.

## Intersection Impact Analysis

To see the impact of site trips on surrounding intersections, vehicles need to be distributed from the development throughout the roadway network. A trip distribution pattern for trips going to/from the site was developed based on location, daily roadway volumes, and access to the surrounding region. That pattern is:

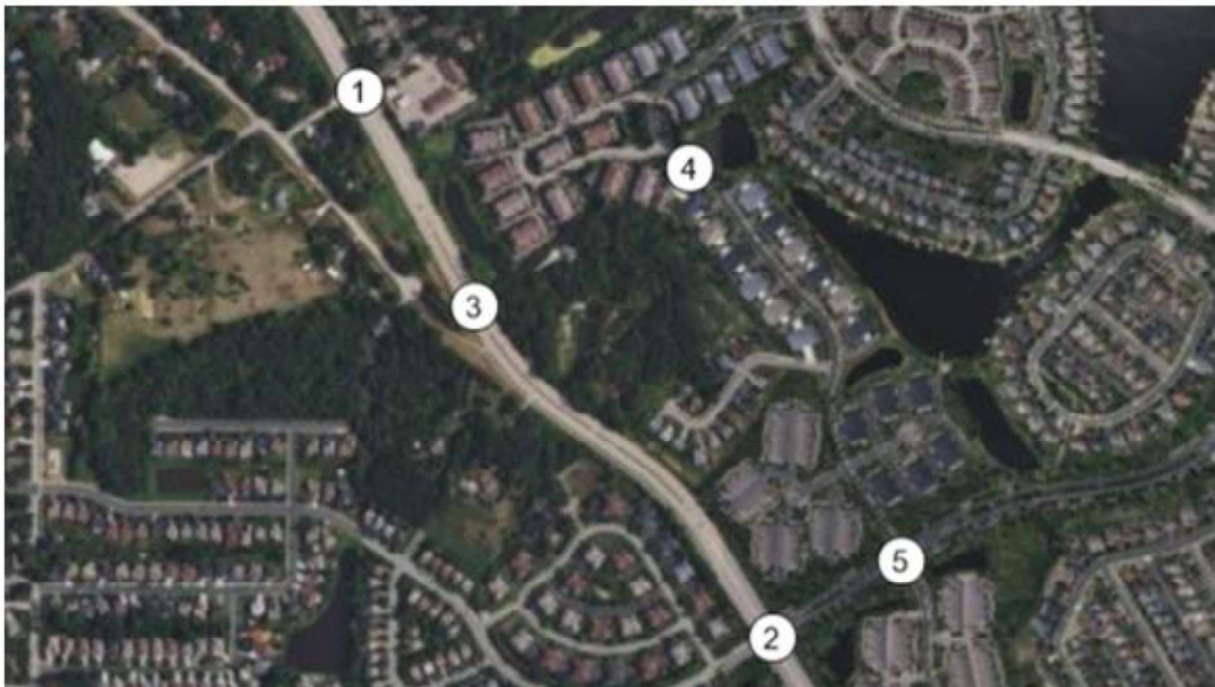
- 25% of the generated traffic to/from the north on Radisson Road.
- 6% of the generated traffic to/from the north on Lake Boulevard.
- 16% of the generated traffic to/from the east on Lakes Parkway.
- 46% of the generated traffic to/from the south on Radisson Road.
- 4% of the generated traffic to/from the west on Lakes Parkway.
- 3% of the generated traffic to/from the west on Cloud Drive.

Using the trip generation and trip distribution, new trips for the development were routed through the following intersections:

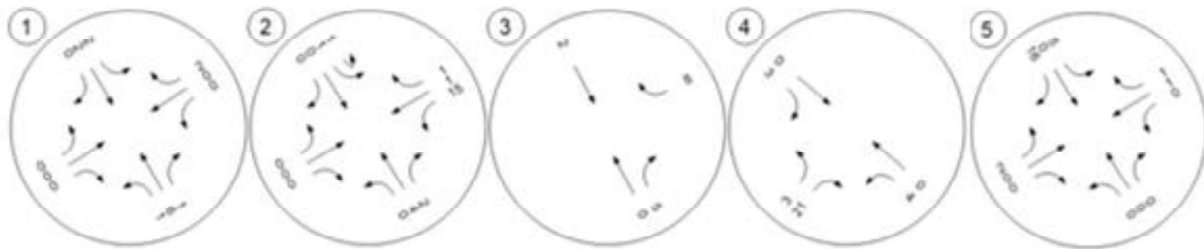
- Radisson Road/Cloud Drive
- Radisson Road/Lakes Parkway
- Radisson Road/Site Access
- Vermillion Street/121 Avenue (Residential Site Access)
- Lakes Parkway/Vermillion Street

Both the two access scenario and one access scenario (residential site access only) were reviewed in this analysis. The forecasted change in site trips at the surrounding intersections due to the development of the site are shown in Figure 1 and Figure 2 for the two access scenario, and Figure 3 and Figure 4 for the one access scenario. Additionally, only the local data is presented in this analysis. Local data is considered more relevant than the ITE national data as it is generally newer and accounts for our area's specific characteristics and driving habits. Per the procedure in the *Trip Generation Manual*, local trip generation data is used when possible and supplemented with national ITE data when local data is not available.

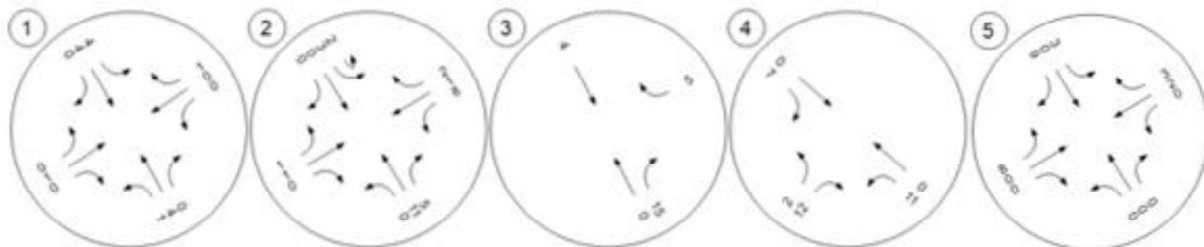
**Figure 1 – Two Access Medium Density Residential**



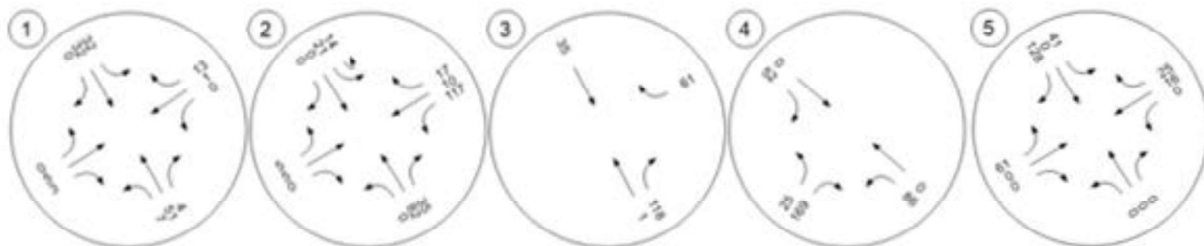
**AM Peak**



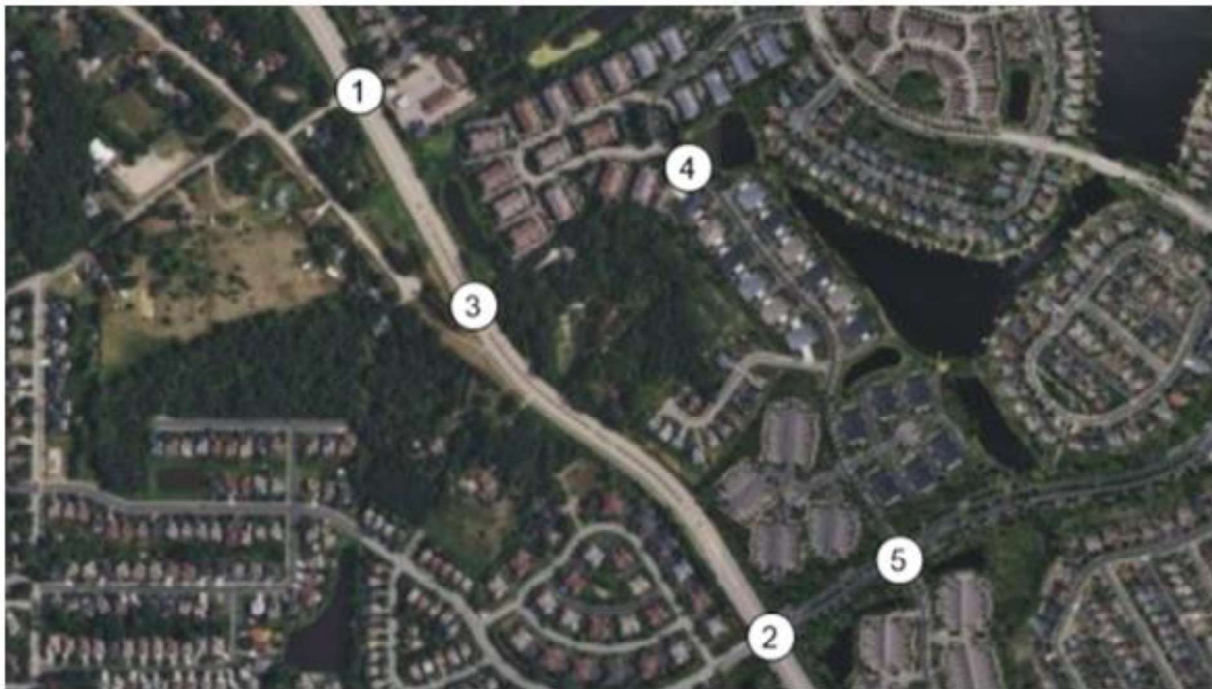
**PM Peak**



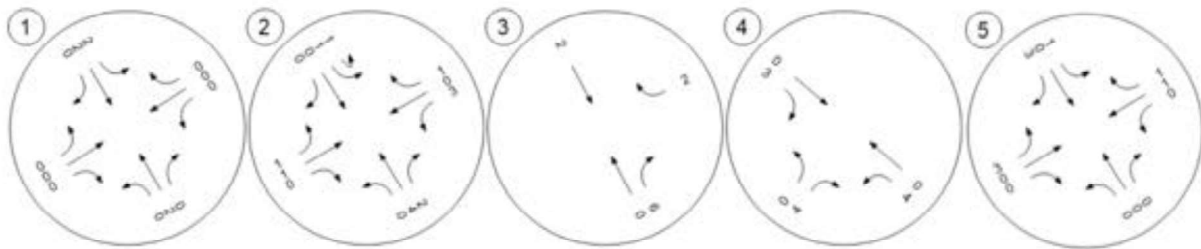
**Daily**



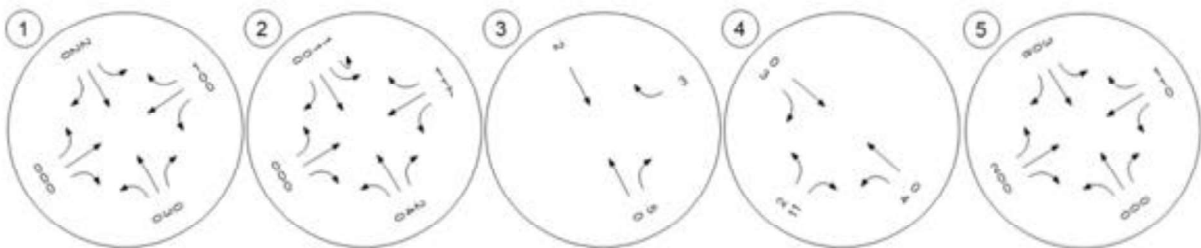
**Figure 2 – Two Access High Density Senior Cooperative**



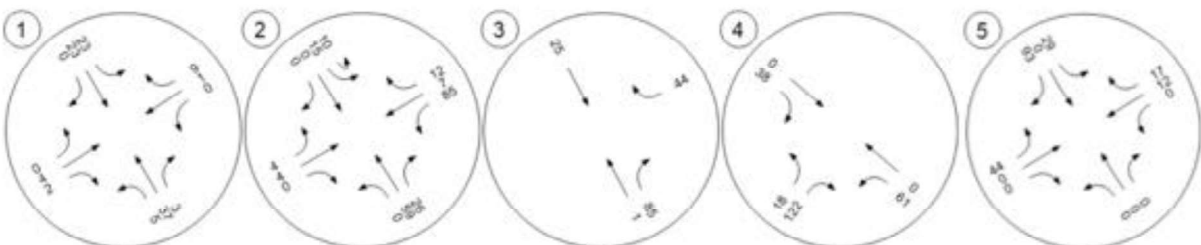
**AM Peak**



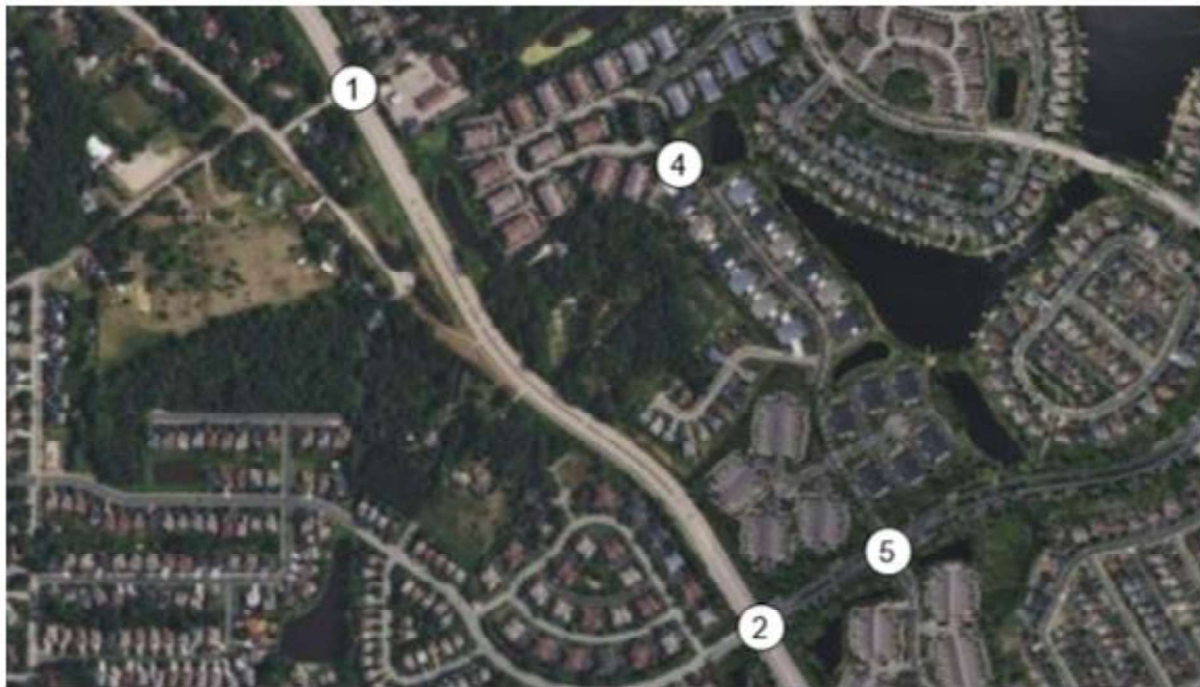
**PM Peak**



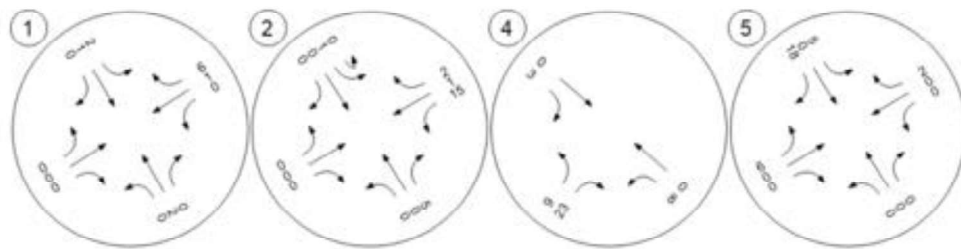
**Daily**



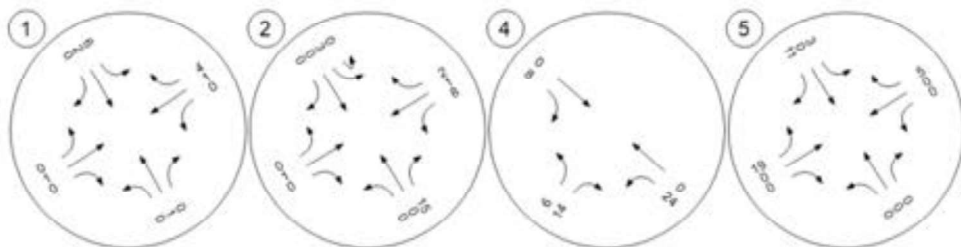
**Figure 3 – Single Access Medium Density Residential**



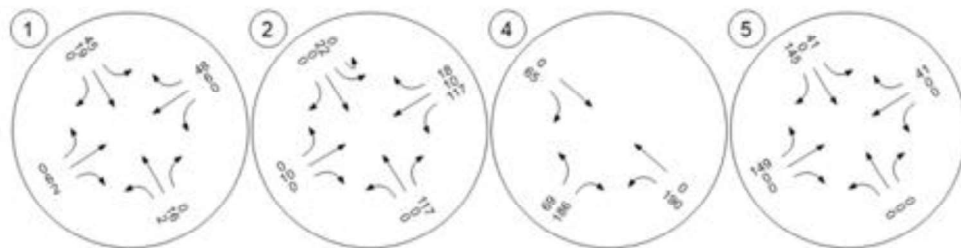
**AM Peak**



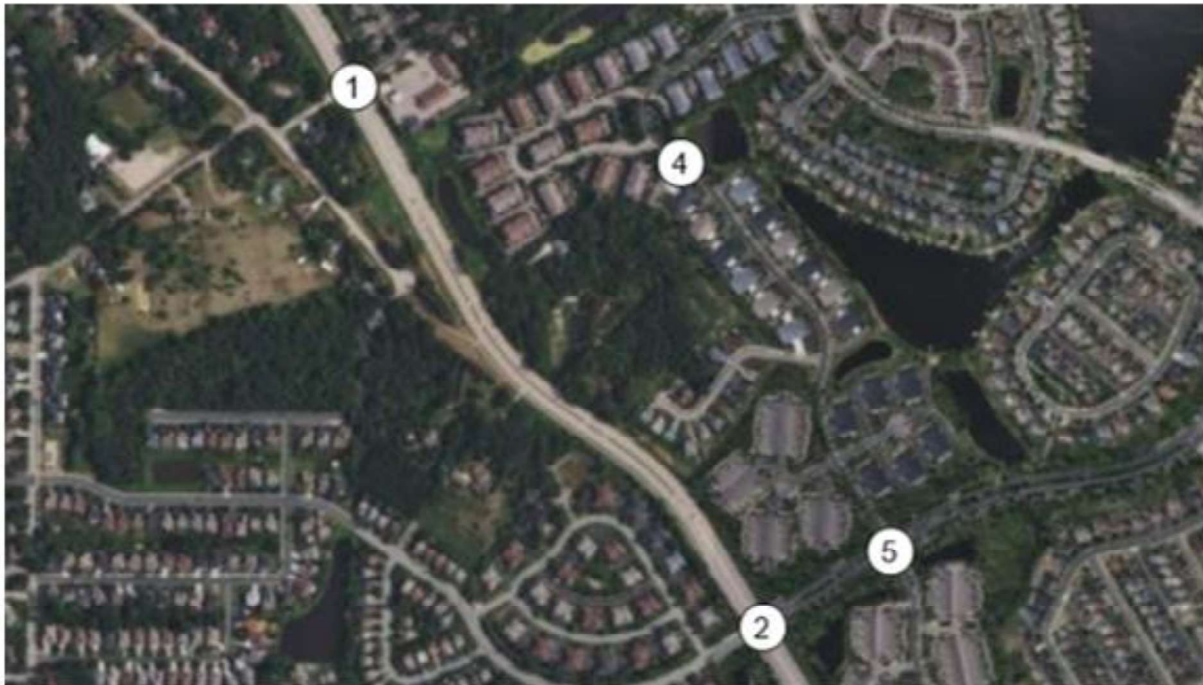
**PM Peak**



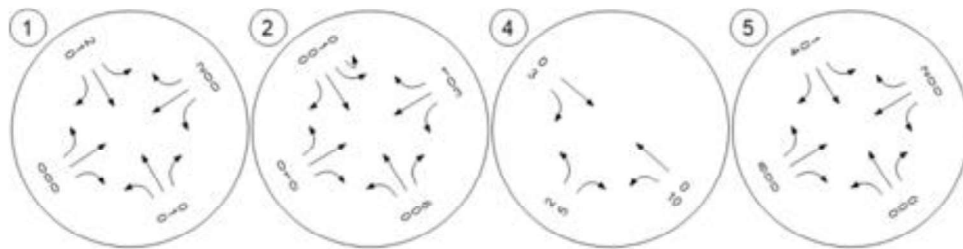
**Daily**



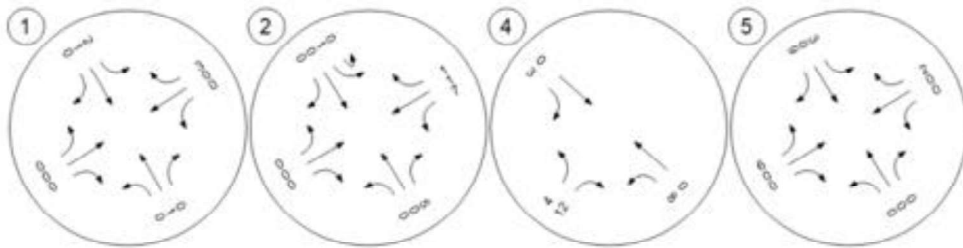
**Figure 4 – Single Access High Density Senior Cooperative**



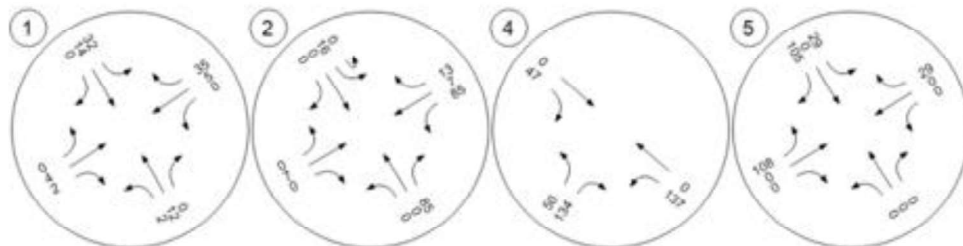
**AM Peak**



**PM Peak**



**Daily**



Per Figure 1 through Figure 4, the medium density residential development projects higher site related traffic volumes, at the analyzed intersections, than the proposed high density senior development. The following summarizes the largest volume change expected for each development and access configuration.

For the two access scenario, the largest increases in volume are as follows:

- AM Peak Hour Net New Volumes
  - High Density Senior Development - Six northbound rights into the development on Radisson Road.
  - Medium Density Residential – 21 outbound rights at the Vermillion Street Site Access.
- PM Peak Hour Net New Volumes
  - High Density Senior Development - 11 outbound rights at the Vermillion Street Site Access.
  - Medium Density Residential – 15 northbound rights into the development on Radisson Road.
- Daily Net New Volumes
  - High Density Senior Development - 122 outbound rights at the Vermillion Street Site Access.
  - Medium Density Residential – 169 outbound rights at the Vermillion Street Site Access.

For the single access scenario, the largest increases in volume are:

- AM Peak Hour Net New Volumes
  - High Density Senior Development - Ten northbound lefts into the development on Vermillion Street.
  - Medium Density Residential – 23 outbound rights at the Vermillion Street Site Access.
- PM Peak Hour Net New Volumes
  - High Density Senior Development - 12 outbound rights at the Vermillion Street Site Access.
  - Medium Density Residential – 23 northbound lefts into the development on Vermillion Street.
- Daily Net New Volumes
  - High Density Senior Development - 137 northbound lefts into the development on Vermillion Street.
  - Medium Density Residential – 190 northbound lefts into the development on Vermillion Street.

The above breakdown further shows that the 102-unit senior residential development is projected to generate less traffic and will result in fewer traffic impacts on the surrounding transportation network than the 94-unit medium density residential development. This is true for both two access and single access scenarios.

## Attachments

- i. Site Plan