December 15, 2021
W.O. No. 2021-3091

Spokane County
1026 E. Broadway Avenue
Spokane, WA 99260

Attn: Barry Greene, P.E.

Re: Hastings Road Comprehensive Plan Amendment Change from Low Density Residential (LDR) to Medium Density Residential (MDR)
1121 E Hastings Road
Planning Level Traffic (Trip) Distribution Letter

Dear Mr. Greene:

Per the Spokane County requirements, we have prepared a planning level trip generation and distribution letter for the 1.46 acre +/- residential property located at 1121 E. Hastings Road.

This letter will establish the potential trip generation and distribution for the change of land use from Low Density Residential to (LDR) to Medium Density Residential (MDR) for the subject property as shown on Figure 2, Aerial Plan, and determine if further study may be required. This report will follow the standards for doing traffic distribution letters as required by Spokane County and the Institute of Transportation Engineers (ITE).

PROJECT DESCRIPTION
The planning level project proposes to change the current land use code designation from Low Density Residential (LDR) to Medium Density Residential (MDR). The subject property is a 1.46 acre +/- of developed land. The project site is currently developed with a single-family residence and outbuildings.

The existing land use is Low Density Residential (LDR) which has a maximum density of 8 residential units per acre, per Chapter 14.606 under the Spokane County Municipal Code. Under the current land use designation, the subject property can be developed into 11 single family residential lots with access to Hastings Road and Farwell Road.

The proposed zoning is Medium Density Residential (MDR) which is primarily for multi-family uses. MDR allows for a density of up to 15 dwelling units per acre per chapter 14.606 under the Spokane County Municipal Code. Considering the development requirements, it is anticipated that the highest and best land use for the subject property is calculated at 22 multi-family units. The project site is proposed to be accessed by Hastings Road and Farwell Road.
Vicinity / Aerial View of Site

The site is listed on the current comprehensive plan as Low Density Residential and currently zoned as LDR. The site lies on a portion of the NE 1/4 of Section 8, T. 26 N., R.43 E., W.M. within Spokane County, Washington. A vicinity map is included as Figure 1 and a preliminary copy of the Aerial Photo is included as Figure 2, please see the Appendix. The parcel number for the site is 36081.9074.

Trip Generation and Distribution

Trip Types

The existing and proposed land uses are residential. ITE has developed data regarding various trip types that all developments experience. These are found in several places, however, for this analysis the Trip Generation Manual 10th Edition as well as the Trip Generation Handbook were used to develop the criteria for this analysis.

Generally, all existing and proposed developments will be made up of one or more of the following trip types: new (destination) trips, pass-by trips, diverted trips, and shared (internal trips). In order to better understand the trip types available for land access a description of each specific trip type follows.

New (Destination) Trips - These types of trips occur only to access a specific land use such as a new retail development or a new residential subdivision. These types of trips will travel to and from the new site and a single other destination such as home or work. This is the only trip type that will result in a net increase in the total amount of traffic within the study area. The reason primarily is that these trips represent planned trips to a specific destination that never took trips to that part of the City prior to the development being constructed and occupied. This project will develop new trips.

Pass-by Trips - These trips represent vehicles which currently use adjacent roadways providing primary access to new land uses or projects and are trips of convenience. These trips, however, have an ultimate destination other than the project in question. They should be viewed as customers who stop in on their way home from work. An example would be on payday, where an individual generally drives by their bank every day without stopping, except on payday. On that day, this driver would drive into the bank, perform the prerequisite banking and then continue on home. In this example, the trip started from work with a destination of home, however on the way, the driver stopped at the grocery store/latte stand and/or bank directly adjacent to their path. Pass-by trips are most always associated with commercial/retail types of development along major roadways. Therefore, for this project pass-by trips will not be considered.
Diverted (Linked) Trips - These trips occur when a vehicle takes a different route than normal to access a specific facility. Diverted trips are similar to pass-by trips, but diverted trips occur from roadways, which do not provide direct access to the site. Instead, one or more streets must be utilized to get to and from the site. For this project, because of the many different routes that can be taken to and from the site, we believe that these would be difficult to track and verify. Therefore, no diverted trips were acknowledged for this analysis.

Shared Trips - These are trips which occur on the site where a vehicle/consumer will stop at more than one place on the site. For example, someone destined for a certain shop at a commercial site may stop at a bank just before or after they visit the shop that they went to the site to visit. This trip type reduces the number of new trips generated on the public road system and is most commonly used for commercial developments. Determining these trip types is more difficult to quantify and without specific guidance are usually determined by engineering judgment on a project by project basis. Although some shared trips between land uses may occur with this project, there is no supporting data to justify a large shared trip reduction. Therefore, to be conservative no shared trips were credited for this project.

Intermodal trips (non-Vehicle)

Pedestrian Trips – When a residential or hospitality land use is located within close proximity of complimentary land uses such as, shops, restaurants, offices, or event centers, some vehicular trips will be replaced by pedestrian trips. The decision for residents/guests to drive or walk to their destination is dependent upon several factors and variables. The first may be trip length or distance; the second may be the route, typically the crossing of a large roadway without signalized crosswalks or other safe crossing facilities would be a deterrent; the third may be parking at the destination; and fourth may be the weather as rain or snow conditions may deter pedestrian activity. For this project pedestrian trips will not be considered.
Trip Generation Characteristics for the Proposed Project

As noted earlier, trip generation rates are determined by use of the *Trip Generation Manual, 10th Edition* published by the Institute of Transportation Engineers (ITE) to determine the number of trips generated during the PM Peak Hour. The purpose of the *Trip Generation Manual* is to compile and quantify empirical trip generation rates for specific land uses within the US, UK and Canada.

Existing Land Uses

For the existing single family residential land use, the highest and best use of 11 single family residential lots will be used therefore land Use Code (LUC) #210 will be used. Per section 4.4 of the Trip Generation Handbook 3rd Edition by ITE, the fitted curve equations were used to calculate new project trips. The fitted curve equations and the anticipated number of AM and PM peak hour trips for the land use of the proposed project are shown on Table 1.

<table>
<thead>
<tr>
<th>Dwelling Units</th>
<th>AM Peak Hour Trips</th>
<th>PM Peak Hour Trips</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fitted Curve Equation</td>
<td>Directional Distribution</td>
</tr>
<tr>
<td>11</td>
<td>13</td>
<td>3</td>
</tr>
</tbody>
</table>

Average Daily Trip Ends (ADT)

Units | Fitted Curve Equation | ADT |
11     | 137                  |

Proposed Land Uses

For the potential 22 units of the development under the MDR zone, Land Use Code (LUC) #221 Multifamily Residential (mid-Rise) will be used. LUC #221 will be used. Per section 4.4 of the Trip Generation Handbook 3rd Edition by ITE, the fitted curve equations were used to calculate new project trips. The fitted curve equations and the anticipated number of AM and PM peak hour trips for the land use of the proposed project are shown on Table 2.

<table>
<thead>
<tr>
<th>Dwelling Units</th>
<th>AM Peak Hour</th>
<th>PM Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fitted Curve</td>
<td>Directional Distribution</td>
</tr>
<tr>
<td>22</td>
<td>8</td>
<td>2</td>
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Average Daily Trip Ends (ADT)

<table>
<thead>
<tr>
<th>Dwelling Units</th>
<th>Fitted Curve</th>
<th>ADT</th>
</tr>
</thead>
<tbody>
<tr>
<td>22</td>
<td>-</td>
<td>119</td>
</tr>
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</table>
Trip Generation Comparison
Since the existing single family residential land use trip generation is proposed to be replaced by the proposed High Density Residential trip generation, the difference in trips generated is shown on Table 3.

Table 3 - Trip Generation Comparison (Fig. 5 & 6)

<table>
<thead>
<tr>
<th>Land Use Code (LUC)</th>
<th>AM Peak Hour</th>
<th></th>
<th>PM Peak Hour</th>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Vol. per LUC</td>
<td>Directional Distribution</td>
<td>Vol. per LUC</td>
<td>Directional Distribution</td>
</tr>
<tr>
<td></td>
<td></td>
<td>In</td>
<td>Out</td>
<td></td>
</tr>
<tr>
<td>LUC 220 Multifamily Residential (Proposed)</td>
<td>8</td>
<td>2</td>
<td>6</td>
<td>11</td>
</tr>
<tr>
<td>LUC 210 Single Family Residential (Existing)</td>
<td>&lt;13&gt;</td>
<td>&lt;3&gt;</td>
<td>&lt;10&gt;</td>
<td>&lt;13&gt;</td>
</tr>
<tr>
<td>Difference</td>
<td>&lt;5&gt;</td>
<td>&lt;1&gt;</td>
<td>&lt;4&gt;</td>
<td>&lt;2&gt;</td>
</tr>
</tbody>
</table>

Average Daily Trip Ends (ADT)

<table>
<thead>
<tr>
<th>Land Use Code (LUC)</th>
<th>Rate</th>
<th>ADT</th>
</tr>
</thead>
<tbody>
<tr>
<td>LUC 220 Multifamily Residential (Proposed)</td>
<td></td>
<td>119</td>
</tr>
<tr>
<td>LUC 210 Single Family Residential (Existing)</td>
<td>&lt;137&gt;</td>
<td></td>
</tr>
<tr>
<td>Difference</td>
<td></td>
<td>&lt;18&gt;</td>
</tr>
</tbody>
</table>

As shown on Table 3, the trips of the Medium Density Residential land use is anticipated to generate 5 less trips in the AM peak hour with 1 less trip entering the site and 4 less trips exiting the site. In the PM peak hour, the Medium Density Residential land use is anticipated to generate 2 less trips, with 1 less trip entering the site and 1 less trip exiting the site. For average daily trips ends, the Medium Density Residential land use is anticipated to generate 18 less average daily trips to and from the site.

TRIP DISTRIBUTION
It is anticipated that the subject property will be accessed via Hastings Road. The roads anticipated to be used by the additional trips generated by a development of the subject property are listed below.

Hastings Road is generally an east/west two-way 2 & 5-lane urban principal arterial. Hastings Road is a 5-lane road that extends east from Mill Road through Division Street to just past Perry Street where it becomes Farwell Road. Hastings Road generally serves commercial, residential, and institutional land uses. The speed limit on the Hastings Road within the study area is 35MPH.

Farwell Road is an east/west two-way 2-lane principal arterial/major collector that extends east from Perry Street as an urban principal arterial through Newport Highway and Spokane Corridor (Highway 395) Interchange to Market Street and then continues as an urban major collector to Yale Road before becoming as an rural major collector and terminating at Bunke Road. Farwell
Road serves residential, institutional and rural land uses. The speed limit on Farwell Road within the study area is 35 MPH.

**Highway 395 (Division Street)** is generally a north/south highway that extends from Interstate 90 in the City of Spokane north along Division Street before angling west to Colville WA and the Canadian Border. Within the study area Highway 395 is a two-way 5- & 6-Lane principle state transportation route. The area surrounding the intersection of Highway 395 & Hastings Road is comprised of commercial land uses. The posted speed limit in the study area is 50 MPH.

**Newport Highway (Highway 2)** is generally a north/south interstate highway that extends northeast from Division Street through Hawthorne and Farwell Road before going under the North-south Corridor, and then sweep north through the Mead and Greenbluff area, and continues north through Colbert and Chatareoy before going to the City of Newport. Newport Highway within the study area is a 5-lane two-way highway. Newport Highway serves a mixture of commercial, industrial, and residential land uses. The speed limit within the study area is 55 MPH.

Considering many factors such as the surrounding transportation facilities, typical commuting patterns, existing development in the area, and Average Daily Traffic counts, traffic for the proposed development is anticipated as follows: 65% of the trips are anticipated to go to/from the west via Hastings Road. 35% of the trips are anticipated to go to/from the east via Farwell Road. Of the 65% of the trips to the west on Hastings Road, 10% of the trips are anticipated to be captured by commercial area at Division Street & Hastings Road, 5% of the trips are anticipated to go to/from the north via Division Street, 15% of the trips are anticipated to go to/from the west via Hastings Road, and 35% of the trips are anticipated to go to/from the south via Division Street. Of the 35% of the trips to the east on Hastings Road, 5% of the trips are anticipated to go to/from the north via Newport Highway, 10% of the trips are anticipated to go to/from the east via Farwell Road, and 20% of the trips are anticipated to go to/from the south via Newport Highway. Please see Figures 3-8 to see a graphical representation of theses distribution.

Exhibit 1: Trip Distribution Percentage (Source: COS and Spokane County ADT Counts) Existing Transit System
The existing bus routes nearest the project site are Route 124 and 25. The nearest bus stops from the project site to the route is 0.83 miles at Hastings Rd & Mayfair Rd (Hastings Park & Ride). The bus stops can be accessed by sidewalks along Hastings Rd. Please see the attached route map.

**Existing Pedestrian System**

There are sidewalks along Hastings and Farwell Roads. Northwood Middle School, Farwell Elementary School, Commercial Area at Hastings Road & Division Street, and Hastings Park and Ride are accessible via the sidewalks along Hastings and Farwell Roads.
Existing Bike System
There are bike lanes along Hasting/Farwell Roads from Division Street to Market Street and there is Children of the Sun Trail along southside of Spokane Corridor (Hwy 395) as a shared use path within the study area.
APPENDIX

1. Vicinity Map
2. Aerial View of Site
3. AM Existing Trip Distribution
4. PM Existing Trip Distribution
5. AM Proposed Trip Distribution
6. PM Proposed Trip Distribution
7. AM Trip Distribution Difference
8. PM Trip Distribution Difference
Conclusions and Recommendations
It is anticipated that a change of land use to Medium Density Residential (MDR) land use would generate 5 less AM peak hour trips and 2 less PM peak hour trips. Based on the number of trips generated the location of the project and an understanding of the operation of intersections within the area, we believe that if the change is approved that there would be minimal impact from this project on the surrounding transportation system. Additionally, at the time of any “real” project the “real” project would be reviewed for traffic impact at that time. Therefore, based upon the analysis provided and a working knowledge of traffic in the area we recommend that the comprehensive plan map amendment be allowed to move forward without further analysis.

Should you have any questions related to this document please do not hesitate to call at (509) 893-2617.

Sincerely,

[Todd R. Whipple, P.E.]

TRW/stt

encl. Appendix (Vicinity Map, Aerial View of Site, Trip Dist %, Intersection Details)

cc: Sponsor
    File