MEMORANDUM

TO: Inga Note
FROM: Todd R. Whipple, P.E.
DATE: July 6, 2018
PROJECT NO: 18-2025
NAME: McCarrolls East Addition 2nd
REGARDING: Trip Generation

This memorandum is for the proposed McCarroll's East Addition 2nd development. This letter will establish the anticipated trip generation and distribution for the development and is an extension of the Traffic Impact Study for McCarroll's 5th Addition and McCarroll's East Remainder. Please see the attached copy of the Traffic Impact Analysis of McCarroll's 5th Addition dated January 27, 2017 for a full analysis.

The project proposes to develop a 31.51 acre +/- parcel into a 117 single family lots. The project will include public roads with water, sewer, and storm systems. The property is currently undeveloped with trees and field grass. The project proposes to have two accesses via Sorenson Drive and Strong Road.

The site is currently zoned as Residential Single Family (RSF). The subject property is located on a portion of the SE¼ of Section 22, T 26 N., R 42 E., W.M. The parcel numbers for the project are 26224.0134, 26224.0127, and 26225.0256.

For the single family residential development, Land Use Code (LUC) #210 Single-Family Detached Housing was used to establish the number of potential trips generated by this proposed land use. The trip generation rates and the anticipated number of AM & PM peak hour trips for the proposed land use are shown in Table 1.
Table 1 – Trip Generation Rates for LUC #210 – Single-Family Detached Housing

<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>Vol. @ 0.75 trips/Units</td>
<td>Directional Distribution</td>
</tr>
<tr>
<td></td>
<td>25% In</td>
<td>75% Out</td>
</tr>
<tr>
<td>117</td>
<td>88</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>66</td>
<td></td>
</tr>
</tbody>
</table>

Average Daily Trip Ends (ADT)

<table>
<thead>
<tr>
<th>Units</th>
<th>Rate</th>
<th>ADT</th>
</tr>
</thead>
<tbody>
<tr>
<td>117</td>
<td>9.52</td>
<td>1114</td>
</tr>
</tbody>
</table>

As shown in Table 1, the proposed land use of the development is anticipated to generate 88 trips in the AM peak hour with 22 trips entering the site and 66 trips exiting the site. In the PM, peak hour, the land use of the proposed project is anticipated to generate 117 trips with 74 trips entering the site and 43 trips exiting the site. The land use of the proposed project is anticipated to generate 1,114 average daily trips to/from the project.

This area of development has been previously analyzed for traffic impact as part of the approved McCarroll’s East TIA dated January 27, 2017. The McCarroll’s East Addition 2nd area is included in the “Remainder” portion of the study with 203 lots in the remainder area of the study.
TRAFFIC IMPACT ANALYSIS

McCarrolls East 5th Addition
&
Remainder of McCarrolls East

City of Spokane, Washington

February 6, 2017

2016-1604

Prepared by:

Whipple Consulting Engineers, Inc.
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Spokane Valley, WA 99216
(509) 893-2617

This report has been prepared by the staff of Whipple Consulting Engineers, Inc. under the direction of the undersigned professional engineer whose seal and signature appears hereon.

Todd R. Whipple, P.E.
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Level of Service Calculations for year 2021 with the Project, with vested Background with Hunts Pointe Development Jug Handle Alternate.
EXECUTIVE SUMMARY

Supplemental to and in accordance with the Hearing Examiners condition the following traffic impact analysis for the McCarrols East development applies:

1. The City of Spokane and WSDOT has established level of service D as the minimum acceptable level for signalized intersections and level of service E for unsignalized intersections.

2. The McCarrols 5th Addition proposes to develop 19.27 ac +/- into 112 residential dwelling units within 70 individual lots and 21 duplex lots. The 5th Addition is located on the northeast side of Indian Trail Road. The 5th Addition proposes the extensions of Farmdale Street and James Drive to the southern border where the streets terminate as cul-de-sacs. The 5th Addition will provide frontage improvements to Lowell Avenue and Strong Road.

3. The remainder of the McCarrols plat proposes to develop 57.35 ac +/- into 203 residential lots. The remainder of McCarrols East is located on the hillside east of the 5th addition, south and west of Barnes Road. Per the preliminary plats of record dated July 1994 and revised in 1999.

4. The McCarrols East 5th Add and remainder area can be accessed via Phoebe, James, and Farmdale Drives off Barnes Road. From Indian Trail Road, the development can be Accessed via Strong Road and Lowell Avenue. Strong Road is not proposed to connect into the future extension of Barnes Road.

5. The McCarrols East 5th Addition along Indian Trail Road is currently listed on the comprehensive plan and zoned as Residential Two Family (RTF). The remainder of the 5th Addition and the Remainder of McCarrols East is listed as Residential Single Family. The subject property is located on a portion of Section 22, T26N R42E W.M., within the City of Spokane, Washington. The parcel numbers for the subject property are 26224.0129, 26224.0130, 26224.0127, 26225.0251, and 26221.0233. The surrounding area includes residential to the east, west, and north of the property with undeveloped land to the south of the development.

6. The project study area intersections were identified through discussions with the City of Spokane and WSDOT. The study encompasses the AM & PM Peak hour analysis of the following intersections:

- Indian Trail Road & Barnes Road
- Indian Trail Road & Strong Road/ Pacific Park Drive
- Indian Trail Road & Francis Avenue
- Francis Avenue & Alberta Street
- Francis Avenue & Ash Street
- Francis Avenue & Maple Street
7. The following projects have been scoped by the City of Spokane, the Background projects are sorted by their Traffic Analysis Zone (TAZ) location.

<table>
<thead>
<tr>
<th>Background Project</th>
<th>MFDU</th>
<th>SFDU</th>
<th>TFDU</th>
<th>Total SFDU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hunts Pointe*</td>
<td>183</td>
<td>48</td>
<td>231</td>
<td></td>
</tr>
<tr>
<td>Windhaven First Addition</td>
<td>286</td>
<td></td>
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<tr>
<td>Ponderosa 3rd Addition</td>
<td>12</td>
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<tr>
<td>Ponderosa 4th Addition</td>
<td>25</td>
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<td>25</td>
<td></td>
</tr>
<tr>
<td>Diamond Rock Apartments</td>
<td>96</td>
<td></td>
<td></td>
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<tr>
<td>Replat McCarrolls Addition Phase 2</td>
<td>13</td>
<td></td>
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<tr>
<td>McCarrolls East 3rd Addition</td>
<td>10</td>
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<td>McCarrolls East 4th Addition</td>
<td>15</td>
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<tr>
<td>McCarrolls East platted remainder</td>
<td>7</td>
<td>28</td>
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<tr>
<td>Woodridge</td>
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<tr>
<td>Estates at Rocky Ridge</td>
<td>15</td>
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<tr>
<td>Westwinds PUD</td>
<td>19</td>
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</tr>
</tbody>
</table>

*As the Hunts Pointe development, has not been platted at this time and will need to complete a traffic study to meet traffic concurrency the Hunts Pointe Development trips of are added in a separate scenario.

8. For the proposed 112 dwelling units of McCarrolls East 5th Addition and the anticipated 203 dwelling units of the Remainder of McCarrolls East a total of 315 dwelling units are to be considered for analysis, Land Use Code (LUC) 210 Single Family Detached was used to establish the number of potential trips generated by the land use. The trip generation rates and the anticipated number of AM & PM peak hour trips for the land use of the proposed project are shown on Table 3.

<table>
<thead>
<tr>
<th>Dwelling Units</th>
<th>AM Peak Hour Trips</th>
<th>PM Peak Hour Trips</th>
<th>Directional Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Vol. @ 0.75 per Unit</td>
<td>25% In 75% Out</td>
<td>Vol. @ 1.00 per Unit</td>
</tr>
<tr>
<td>112</td>
<td>84</td>
<td>21</td>
<td>112</td>
</tr>
<tr>
<td>203</td>
<td>153</td>
<td>38</td>
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</tr>
<tr>
<td>315</td>
<td>237</td>
<td>59</td>
<td>315</td>
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</table>

9. Conclusions

This Traffic Impact Analysis (TIA) has reviewed and analyzed the study area per the scope established by the City of Spokane, and WSDOT. Based upon the analysis, field observations, assumptions, methodologies and results which are provided in the body of this report. It is concluded that the proposed project will generate new trips on the existing transportation system.
However, these increased trips at the intersections scoped for analysis will generally not degrade the levels of service of these intersections below acceptable levels. Therefore, no offsite mitigation is required by this project. This conclusion was reached and has been documented within the body of this report.

Under the existing condition all scoped intersections are functioning at an acceptable level of service.

In the Year 2017 with the background projects and with and without McCarrolls 5th Addition. The signalized intersection of Francis Avenue & Maple Street is anticipated to fall below an acceptable level of service, but can be brought back by adding a westbound right turn lane and retiming the signals. Specifically, with the 5th Addition the intersection of Indian Trail Road & Strong Road /Pacific Park Drive is anticipated to fall below an acceptable level of service, but can be brought back to an acceptable level by adjusting the signal timing.

In the year 2021 with the connection of Barnes Road to Strong Road and the development of the vested background projects, the signalized intersection of Francis Avenue & Maple Street is anticipated to fall below an acceptable level of service, but can be raised to an acceptable level of service by adding a westbound to northbound right turn lane and adjusting the signal timing. With the addition of the proposed projects trips on the transportation system, the intersection of Indian Trail Road & Strong Road /Pacific Park Drive is anticipated to fall below an acceptable LOS, but can be raised to an acceptable LOS by adjusting the signal cycle length equal to the cycle length of the intersection of Indian Trail Road & Barnes Road.

An additional year 2021 scenario was included for the Hunts Pointe Development. This scenario is mostly a planning level study as the Hunts pointe development is anticipated to complete their own traffic study to meet concurrency. With the addition of Hunts Pointe trips the following intersections are anticipated to fall below an acceptable level of service: Indian Trail Road & Strong Road /Pacific Park Drive, Francis Avenue & Alberta Street, Francis Avenue & Ash Street, Francis Avenue & Maple Street. While considering this scenario an alternate jug handle option has been presented.

10. Recommendations

As shown and concluded within this study the proposed project has been found to have no direct offsite impacts on the transportation system beyond those improvements anticipated to be needed due to background projects and the background growth of the area, or can be solved through signal timing adjustment. We recommend that the City of Spokane Include in the Transportation improvement projects the Westbound right turn lane at the intersection of Francis Avenue & Maple Street. We also recommend that the project pay the traffic impact fee at the time of permit and complete the frontage improvements of Indian Trail Road and Barnes Road. And finally, we recommend that the project complete their frontage improvements and be allowed to move forward without any further traffic analysis.
INTRODUCTION

Introduction, Purpose of Report and Study Area

This traffic impact analysis is required by The City of Spokane traffic concurrency process for the proposed McCarolls East 5th Addition and the development of the remaining parcels of the original preliminary plat. The proposed development is separated into two Please see Figure 1-Vicinity Map and Figure 2-Preliminary Site Plan.

The purpose of this analysis is to review, assess, and identify potential traffic related impacts that the proposed project may have on the transportation network and where possible minimize any impact. This TIA will be completed in accordance with the current traffic guidelines from the City of Spokane, WSDOT and the Institute of Transportation Engineers (A Recommended Practice – Traffic Access and Impact Studies for Site Development, 2010).

Site Location and Development Description

The McCarrells 5th Addition proposes to develop 19.27 ac +/- into 112 residential dwelling units within 70 individual lots and 21 duplex lots. The 5th Addition is located on the northeast side of Indian Trail Road. The 5th Addition proposes the extensions of Farndale Street and James Drive to the southern border where the streets terminate as cul-de-sacs. The 5th Addition will provide frontage improvements to Lowell Avenue and Strong Road.

The remainder of the McCarrells plat proposes to develop 57.35 ac +/- into 203 residential developments. The remainder of McCarrells East is located on the hillside east of the 5th addition, south and west of Barnes Road. The remainder of McCarrells East proposes to extend Phoebe Drive from Barnes Road through the extension of Lowell Avenue to Road A. Road A is one of the five roadways to be developed (Roads A through F) extending from James Drive up the hill. Road B connects into Road A, Road C connects Roads B and D together. Roads D and E terminate as cul-de-sacs. Road F extends to the Water Tower and turns to connect into Strong Road. With the extension of Barnes Road to Strong Road and the connection to the Five-Mile Plateau the Current Connection of Strong Road will be terminated below Barnes Road as a cul-de-sac. From Strong Road, Roads G and H are proposed to be extended to the southern border and terminate as cul-de-sacs.

The McCarrells East 5th Add and remainder area can be accessed via Phoebe, James, and Farndale Drives off Barnes Road. From Indian Trail Road, the development can be Accessed via Strong Road and Lowell Avenue. Strong Road is not proposed to connect into the future extension of Barnes Road.