

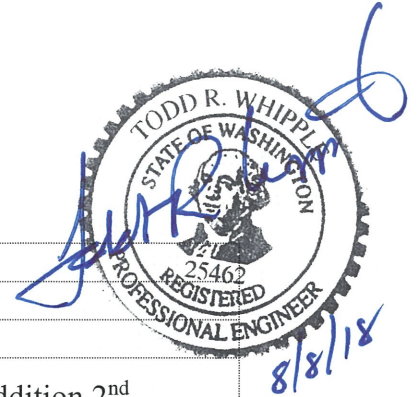
# WCE

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## MEMORANDUM

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



This memorandum is for the proposed McCarroll's East Addition 2<sup>nd</sup> 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 5<sup>th</sup> Addition and McCarroll's East Remainder. Please see the attached copy of the Traffic Impact Analysis of McCarroll's 5<sup>th</sup> 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 SE $\frac{1}{4}$  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 established 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**

Dwelling Units	AM Peak Hour Trips			PM Peak Hour Trips		
	Vol. @ 0.75 trips/Units	Directional Distribution		Vol. @ 1.00 trips / Units	Directional Distribution	
		25% In	75% Out		63% In	37% Out
117	88	22	66	117	74	43
Average Daily Trip Ends (ADT)						
Units	Rate		ADT			
117	9.52		1114			

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 2<sup>nd</sup> 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 5<sup>th</sup> Addition & Remainder of McCarrolls East

City of Spokane, Washington

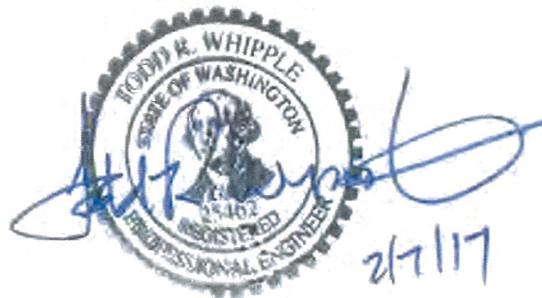
February 6, 2017

2016-1604

Prepared by:

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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.

## TABLE OF CONTENTS

<i>EXECUTIVE SUMMARY</i> .....	1
<i>INTRODUCTION</i> .....	4
<i>Introduction, Purpose of Report and Study Area</i> .....	4
<i>Site Location and Development Description</i> .....	4
<i>EXISTING CONDITIONS</i> .....	7
<i>Existing Conditions Within Study Area</i> .....	7
<i>Land Use &amp; Zoning</i> .....	7
<i>Existing Roadways</i> .....	7
<i>Indian Trail Road</i> .....	7
<i>Barnes Road</i> .....	7
<i>Strong Road</i> .....	7
<i>Pacific Park Drive</i> .....	8
<i>Francis Avenue/ State Route 291</i> .....	8
<i>Alberta Street</i> .....	8
<i>Ash/Maple Couplet</i> .....	8
<i>Study Area Intersections</i> .....	8
<i>Traffic Control and Descriptions</i> .....	8
<i>Indian Trail Road &amp; Barnes Road</i> .....	8
<i>Indian Trail Road &amp; Strong Road/ Pacific Park Drive</i> .....	9
<i>Indian Trail Road &amp; Francis Avenue</i> .....	9
<i>Francis Avenue &amp; Alberta Street</i> .....	9
<i>Francis Avenue &amp; Ash Street</i> .....	9
<i>Francis Avenue &amp; Maple Street</i> .....	9
<i>Traffic Volumes and Peak Hours of Operation</i> .....	10
<i>Public Transit Transportation</i> .....	10
<i>Local Trails</i> .....	14
<i>LEVEL OF SERVICE</i> .....	11
<i>Signalized Intersections</i> .....	11
<i>Unsignalized Intersections</i> .....	12
<i>EXISTING LEVEL OF SERVICE AND TRAFFIC ANALYSIS</i> .....	13
<i>BACKGROUND TRAFFIC GROWTH &amp; BACKGROUND PROJECTS</i> .....	16
<i>Background Traffic Growth</i> .....	16
<i>Background Project Traffic</i> .....	16
<i>TRIP GENERATION AND DISTRIBUTION</i> .....	20
<i>Trip Distribution Characteristics for the Proposed Project</i> .....	20

<i>FUTURE YEAR TRAFFIC IMPACT ANALYSIS</i> .....	25
<i>Year 2017, without the Project, with the Vested Background Projects</i> .....	25
<i>Year 2017, with the Project, with the Vested Background Projects</i> .....	28
<i>Year 2021, without the Project, with the Vested Background Projects</i> .....	31
<i>Year 2021, with the Project, with the Vested Background Projects</i> .....	34
<i>Traffic Impact Fee</i> .....	35
<i>Year 2021, with the Project, with the Vested Background Projects, With Hunts Pointe</i> ..	38
<i>Regional Consideration – Intersecting Transportation Corridors</i> .....	41
<i>Jug Handle Option</i> .....	41
<i>CONCLUSIONS &amp; RECOMMENDATIONS</i> .....	32
<i>Conclusions</i> .....	32
<i>Recommendations</i> .....	32

**LIST OF FIGURES**

<i>Figure 1 – Vicinity Map</i> .....	5
<i>Figure 2 – Site Plan</i> .....	6
<i>Figure 3 – Existing AM Peak Hour Traffic Volumes &amp; LOS</i> .....	14
<i>Figure 4 – Existing PM Peak Hour Traffic Volumes &amp; LOS</i> .....	15
<i>Figure 5 – Background Project Location</i> .....	17
<i>Figure 6 – Background Project AM Peak Hour Traffic Volumes</i> .....	18
<i>Figure 7 – Background Project PM Peak Hour Traffic Volumes</i> .....	19
<i>Figure 8 – 5<sup>th</sup> Addition AM Peak Hour Trip Distribution</i> .....	21
<i>Figure 9 – 5<sup>th</sup> Addition PM Peak Hour Trip Distribution</i> .....	22
<i>Figure 10 – Remainder AM Peak Hour Trip Distribution</i> .....	23
<i>Figure 11 – Remainder PM Peak Hour Trip Distribution</i> .....	24
<i>Figure 12 – 2017 AM Traffic Volumes, without Project, with Vested Background</i> .....	26
<i>Figure 13 – 2017 PM Traffic Volumes, without Project, with Vested Background</i> .....	27
<i>Figure 14 – 2017 AM Traffic Volumes, with Project, with Vested Background</i> .....	29
<i>Figure 15 – 2017 PM Traffic Volumes, with Project, with Vested Background</i> .....	30
<i>Figure 16 – 2021 AM Traffic Volumes, without Project, with Vested Background</i> .....	32
<i>Figure 17 – 2021 PM Traffic Volumes, without Project, with Vested Background</i> .....	33
<i>Figure 18 – 2021 AM Traffic Volumes, with Project, with Vested Background</i> .....	36
<i>Figure 19 – 2021 PM Traffic Volumes, with Project, with Vested Background</i> .....	37
<i>Figure 20 – 2021 AM Traffic Volumes, w/ Project, w/ Vested Background w/ Hunts Pointe</i> .....	39
<i>Figure 21 – 2021 PM Traffic Volumes, w/ Project, w/ Vested Background w/ Hunts Pointe</i> .....	40
<i>Figure 22 – ALT 2021 AM Traffic Vol., w/ Project, w/ Vested Background w/ Hunts Pointe</i> .....	31
<i>Figure 23 – ALT 2021 PM Traffic Vol., w/ Project, w/ Vested Background w/ Hunts Pointe</i> .....	32

**LIST OF TABLES**

*Table 1 – Existing Intersections Levels of Service ..... 13*  
*Table 2 – Background Projects ..... 16*  
*Table 3 – Trip Generation Rates for Single Family Units LUC #220..... 20*  
*Table 4 – Year 2017 Levels of Service, w/o the Project, w/ the vested Background Projects ..... 25*  
*Table 5 – Year 2017 Levels of Service, w/ the Project, w/ the vested Background Projects ..... 28*  
*Table 6 – Year 2021 Levels of Service, w/o the Project, w/ the vested Background Projects ..... 31*  
*Table 7 – Year 2021 Levels of Service, w/ the Project, w/ the vested Background Projects ..... 34*  
*Table 8 – McCarrolls 5<sup>th</sup> Proposed Land Use Impact Fee ..... 35*  
*Table 9 – McCarrolls Remainder Proposed Land Use Impact Fee ..... 35*  
*Table 10 – Year 2021 Levels of Service, w/ the Project, w/ the vested Background Projects, w/  
Hunts Pointe ..... 38*  
*Table 11 – ALT. Year 2021 Levels of Service, w/ the Project, w/ the vested Background Projects,  
w/ Hunts Pointe ..... 42*

**TECHNICAL APPENDIX**

*Level of Service Methods, Criteria and Tables*  
*Background Projects*  
*Accident Data*  
*Raw Traffic Counts*  
*Level of Service Calculations for Existing Conditions*  
*Level of Service Calculations for year 2017 without the Project, with vested Background*  
*Level of Service Calculations for year 2017 with the Project, with vested Background*  
*Level of Service Calculations for year 2021 without the Project, with vested Background*  
*Level of Service Calculations for year 2021 with the Project, with vested Background*  
*Level of Service Calculations for year 2021 with the Project, with vested Background, With  
Hunts Pointe Development*  
*Level of Service Calculations for year 2021 with the Project, with vested Background with Hunts  
Pointe Development Jug Handle Alternate.*

## EXECUTIVE SUMMARY

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Supplemental to and in accordance with the Hearing Examiners condition the following traffic impact analysis for the McCarrolls 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 McCarrolls 5<sup>th</sup> Addition proposes to develop 19.27 ac +/- into 112 residential dwelling units within 70 individual lots and 21 duplex lots. The 5<sup>th</sup> Addition is located on the northeast side of Indian Trail Road. The 5<sup>th</sup> Addition proposes the extensions of Farmdale Street and James Drive to the southern border where the streets terminate as cul-de-sacs. The 5<sup>th</sup> Addition will provide frontage improvements to Lowell Avenue and Strong Road.
3. The remainder of the McCarrolls plat proposes to develop 57.35 ac +/- into 203 residential lots. The remainder of McCarrolls East is located on the hillside east of the 5<sup>th</sup> addition, south and west of Barnes Road. Per the preliminary plats of record dated July 1994 and revised in 1999.
4. The McCarrolls East 5<sup>th</sup> 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 McCarrolls East 5<sup>th</sup> Addition along Indian Trail Road is currently listed on the comprehensive plan and zoned as Residential Two Family (RTF). The remainder of the 5<sup>th</sup> Addition and the Remainder of McCarrolls 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 2 - Background Projects**

TAZ	Background Project	MFDU	SFDU	TFDU	Total SFDU
200	Hunts Pointe*		183	48	231
	Windhaven First Addition		286		286
	Ponderosa 3 <sup>rd</sup> Addition		12		12
	Ponderosa 4 <sup>th</sup> Addition		25		25
300	Diamond Rock Apartments	96			
	Replat McCarrolls Addition Phase 2		13		13
	McCarrolls East 3 <sup>rd</sup> Addition		10		10
	McCarrolls East 4 <sup>th</sup> Addition		15		15
	McCarrolls East platted remainder		7	28	35
	Woodridge		7		7
400	Estates at Rocky Ridge		15		15
	Westwinds PUD		19		19

\*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 5<sup>th</sup> 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 3-Trip Generation Rates for LUC # 210 – Single Family Detached**

Dwelling Units	AM Peak Hour Trips			PM Peak Hour Trips		
	Vol. @ 0.75 per Unit	Directional Distribution		Vol. @ 1.00 per Unit	Directional Distribution	
		25% In	75% Out		63% In	37% Out
112	84	21	63	112	70	42
203	153	38	115	203	128	75
<b>315</b>	<b>237</b>	<b>59</b>	<b>178</b>	<b>315</b>	<b>198</b>	<b>117</b>
<b>Average Daily Trip Ends (ADT)</b>						
Units	Rate	ADT				
112	9.52	1,067				
203	9.52	1,933				
<b>315</b>	-	<b>3,000</b>				

## 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 5<sup>th</sup> 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 5<sup>th</sup> 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

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### *Introduction, Purpose of Report and Study Area*

This traffic impact analysis is required by The City of Spokane traffic concurrency process for the proposed McCarrolls East 5<sup>th</sup> 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 McCarrolls 5<sup>th</sup> Addition proposes to develop 19.27 ac +/- into 112 residential dwelling units within 70 individual lots and 21 duplex lots. The 5<sup>th</sup> Addition is located on the northeast side of Indian Trail Road. The 5<sup>th</sup> Addition proposes the extensions of Farmdale Street and James Drive to the southern border where the streets terminate as cul-de-sacs. The 5<sup>th</sup> Addition will provide frontage improvements to Lowell Avenue and Strong Road.

The remainder of the McCarrolls plat proposes to develop 57.35 ac +/- into 203 residential developments. The remainder of McCarrolls East is located on the hillside east of the 5<sup>th</sup> addition, south and west of Barnes Road. The remainder of McCarrolls 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 McCarrolls East 5<sup>th</sup> 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.