MEMORANDUM

To: Mike Weiher, Terracina Design

From: Cassie Slade, PE, PTOE

Date: December 6, 2024

Project: Prairie Point **Filing No. 5** in Aurora, Colorado

Subject: Traffic Conformance Memo

The Fox Tuttle Transportation Group has completed a traffic analysis for the proposed development of Filing No. 5 of the Prairie Point (previously known as Kings Point) Development project in Aurora, Colorado. The project is located between Parker Road and Ireland Way and between future Aurora Parkway and Long Avenue as shown in **Figure 1**.

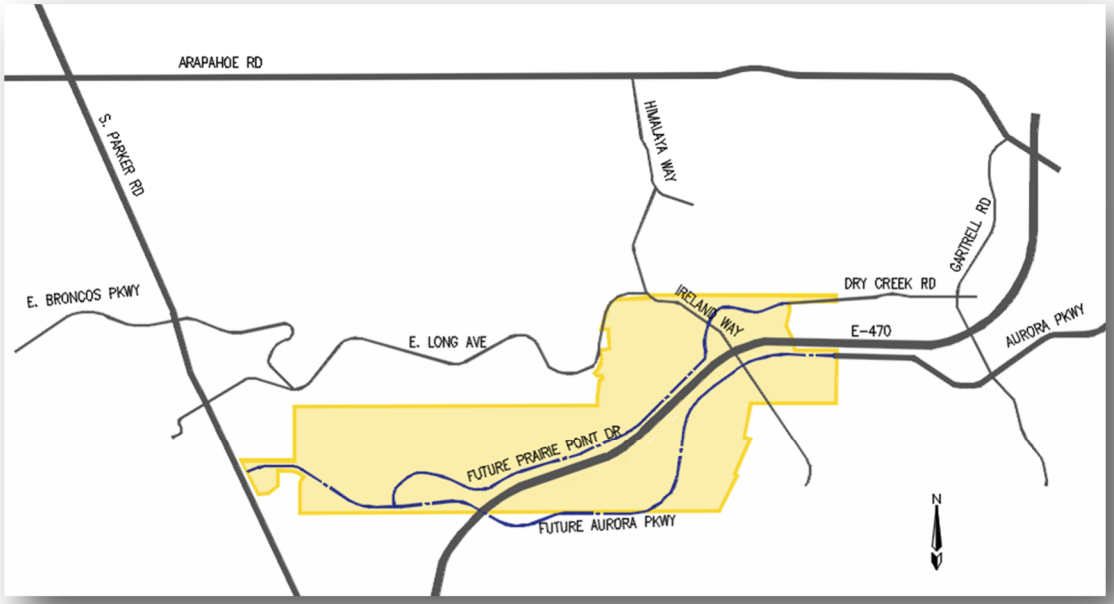

Figure 1. Vicinity Map

Filing No. 5 proposes constructing 120 dwelling units Planning Area (PA) 7. The existing and future roadways and intersections have been planned or built to support Prairie Point traffic including the property of Filing No. 5. The master development includes extending Aurora Parkway from the current end point that is east of Ireland Way to Parker Road, midway between Longs Avenue and Cottonwood Drive. In addition, a new collector roadway (Prairie Point Drive) will be constructed north of E-470 as a parallel east-west connection that will connect to Dry Creek Road. Filing No. 5 will have two (2) accesses on Aurora Parkway, one full movement on the west end that will align with the access to Filing No. 4 (Nova Drive) and one right-in, right-out access on the east end of the parcel. The internal circulating roadway within PA-7 will be constructed with one travel lane per direction.

The purpose of this "traffic conformance memo" is to determine if the proposed Filing No. 5 project compares to the trip generation assumptions for PA-7 as analyzed in the master traffic study and to determine if additional traffic analyses are necessary.

Comparison to the Master Traffic Study

A "Master" traffic impact study[1] (TIS) was previously prepared for the entire Prairie Point development, including the subject planning area, as shown in **Figure 2**. Filing No. 5 is south of Filing No. 4. The proposed roadways and intersections have been planned and will be built to support this full buildout traffic of Prairie Point. A review of the Master TIS shows that PA-7 included up to 125 multi-family (low-rise) dwelling units. Filing No. 5 proposed to construct 120 duplex homes referred to as "duets", which is a decrease of five (5) dwelling units (4% decrease). Access will remain the same along Aurora Parkway as shown in **Figure 3** and as previously evaluated (MTS Intersection #101 and #102).

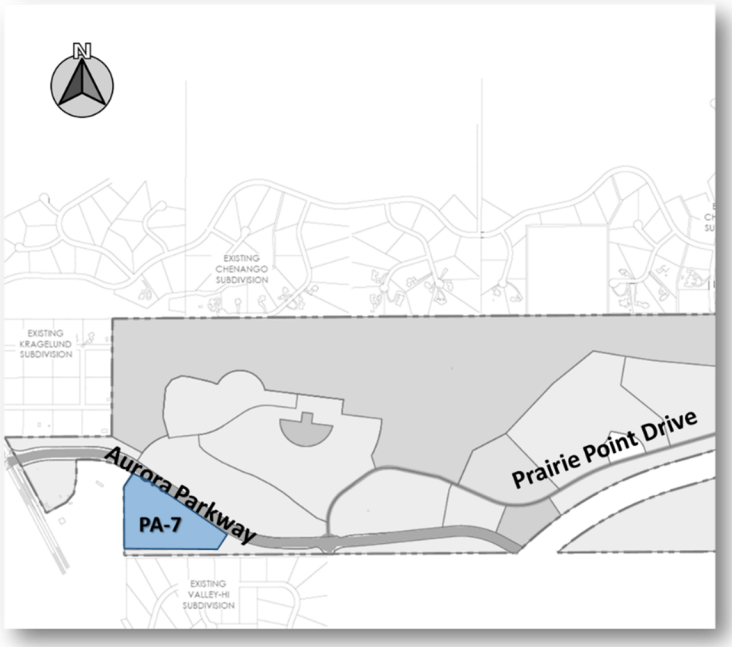

Figure 2. Proposed Filing No. 5 of Prairie Point Map

[1] *Kings Point Development Traffic Impact Study*. Fox Tuttle Transportation Group, LLC. February 2022.

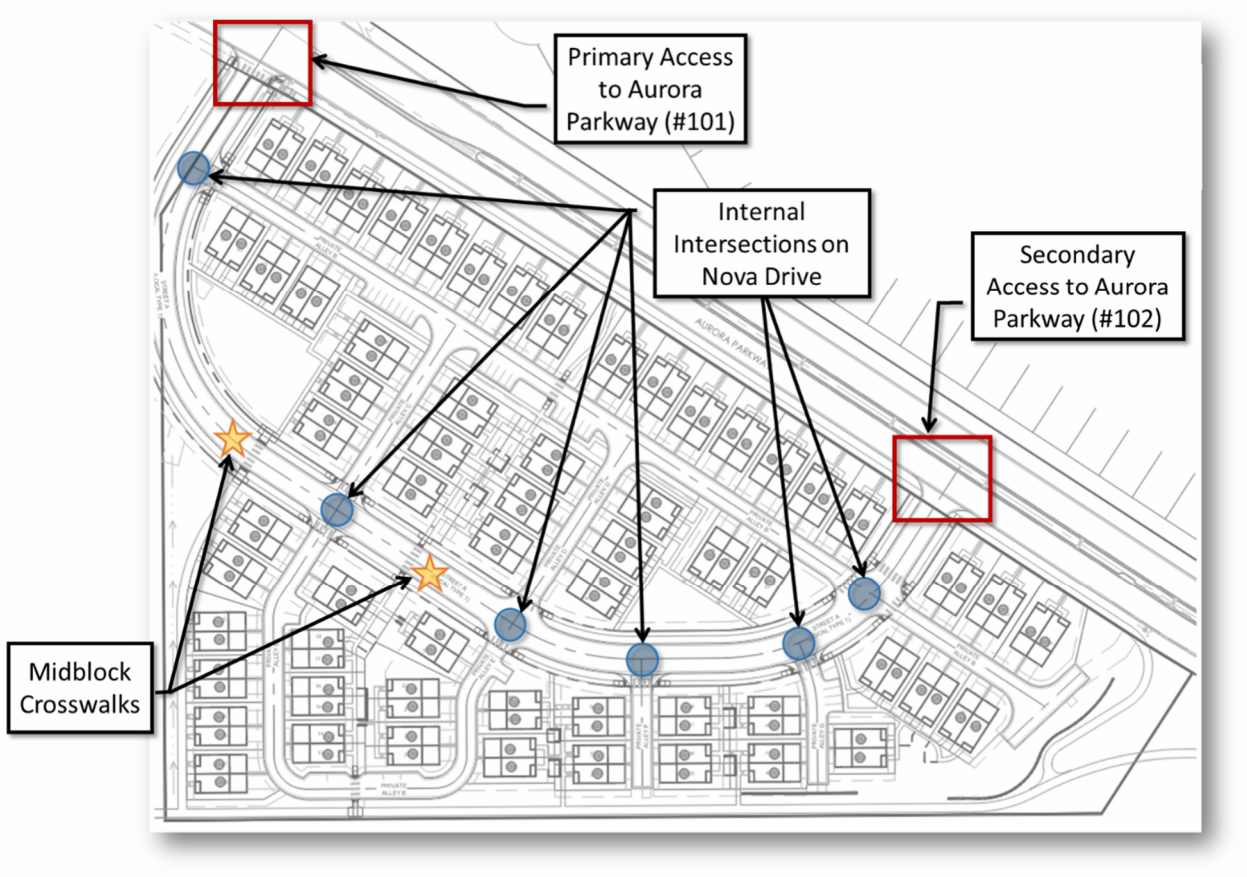

Figure 3. Proposed Access for Filing No. 5

Trip Generation

To establish the volume of trips associated with the proposed Prairie Point Filing No. 5, the data contained in the Institute of Transportation Engineers' (ITE) *Trip Generation Handbook and Manual* (11th Edition, Year 2021) was applied to the most applicable land use category. The proposed land use is estimated to mostly be new trips, known as 'primary trips', which is discussed below:

> Primary Trips. These trips are made specifically to visit the site and are considered "new" trips. Primary trips would not have been made if the proposed project did not exist. Therefore, this is the only trip type that increases the number of trips made on a regional basis.

The Master TIS applied the rates for "Multi-Family (Low-Rise) Housing" and this traffic analysis updated the land use type to "Single-Family Attached Housing".

In the Master TIS, it was assumed that there will be 10% internal capture/non-auto reduction with the mix of land uses and connectivity to multi-modal facilities. For comparison purposes, the same percentage was applied to Filing No. 5. The estimated trip generation is summarized in **Table 1** for weekday daily, weekday AM, and weekday PM periods.

Table 1. Trip Generation Estimate and Comparison

Land Use	Size	Unit	Internal Capture & Non-Auto	Average Daily New Trips				AM Peak Hour New Trips				PM Peak Hour New Trips			
				Rate	Total	In	Out	Rate	Total	In	Out	Rate	Total	In	Out
Master Traffic Study															
ITE 220 - Multi-Family (Low Rise) Housing	125	DU	10%	7.32	824	412	412	0.46	52	12	40	0.56	63	40	23
Proposed Filing No. 5															
ITE 215 - Single-Family Attached	120	DU	10%	7.20	778	389	389	0.48	52	13	39	0.57	62	37	25
Change from Previous Land Use Assumptions					***-46***	***-23***	***-23***	***AM >***	***0***	***1***	***-1***	***PM >***	***-1***	***-3***	***2***
Percent Difference					*-6%*				*0%*				*-2%*		

Source: ITE Trip Generation 11th Edition, 2021.

Based on the comparison to the Master TIS, **it was estimated that the trips associated with Filing No. 5 will have 6% fewer vehicles daily, the same trips in the AM peak hour, and 2% fewer vehicles during the PM peak hour**. The daily traffic volume was estimated to be decreased by 46 vehicles per day (vpd). The AM peak hour was estimated to have the same number of vehicles with one (1) more entering and one (1) less exiting. During the PM peak hour, it was estimated there will be two (2) fewer vehicles. The change in dwelling units does not impact the recommendations or require additional improvements.

Updated Access Volumes and Analysis

To estimate the traffic forecasts at the access intersections for Filing No. 5, the trip generation and assignment from the MTS was updated with the changes in dwelling units from Filing No. 1 through Filing No. 5. It was calculated that the latest site plans for these filings are 114 fewer units than the MTS, which reduces the traffic throughout the study area.

The Filing No. 5 secondary access (#102) on Aurora Parkway was previously assumed to be full-movement; it has been updated to be restricted to right-in, right-out with Filing No. 5. The left-

turns into and out of the secondary access (#102) were reassigned to the full-movement access on the west end of the planning area (#101). **Figure 4** provides the Year 2040 total volumes from the MTS at the two access intersections that will serve Filing No. 5. The updated volumes are illustrated in **Figure 5**.

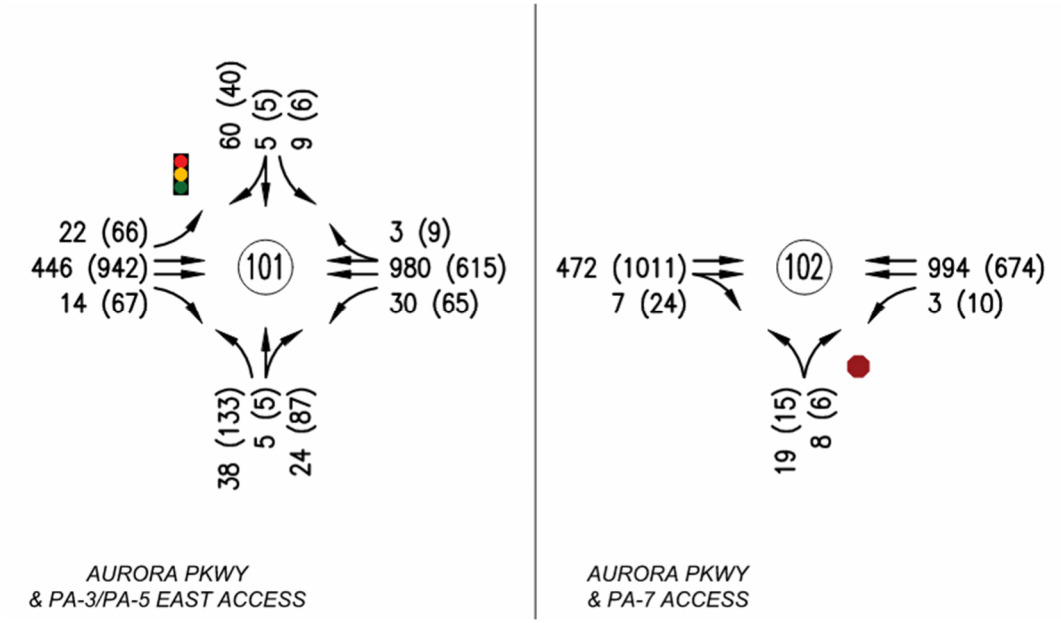

Figure 4. Year 2040 Total Volumes from MTS

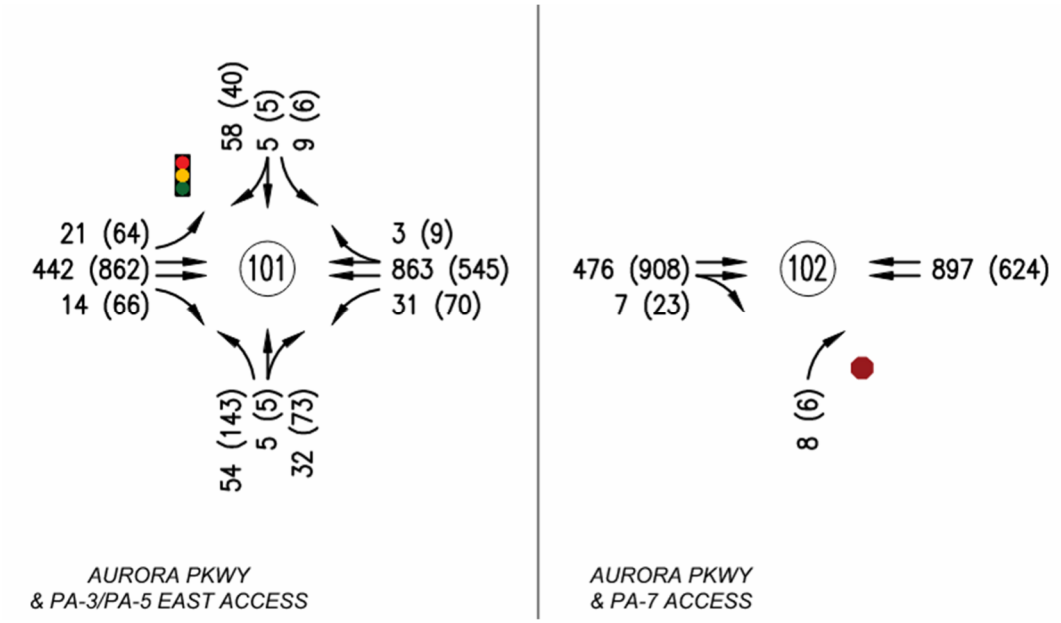

Figure 5. Updated Year 2040 Total Volumes

The capacity analysis for Year 2040 was updated for the Filing No. 5 access intersections with the new volumes and movement restrictions. Compared to the delays and 95th percentile queues from the Master TIS, the updated analysis improves the operations with slightly lower delays and queues. The full movement intersection (#101) will continue to operate overall at LOS B with all movements operating at LOS C or better. The secondary access (#102) will experience less delay on the side-street when restricted to right-in, right-out only (LOS A/B). The recommendations in the Master TIS were not impacted by the updated intersection evaluation and no new improvements are warranted.

Table 2 provides the delays and levels of service from both evaluations. **Table 3** provides the 95th percentile queues.

Table 2. Comparison of Peak Hour Delay and LOS

Intersection and Critical Lanes Groups	2040 Bkgrd + Project Master Traffic Study				2040 Bkgrd + Project Updated			
	AM Peak		PM Peak		AM Peak		PM Peak	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
SIGNAL CONTROL								
#101. Aurora Parkway at PA-3/PA-5/Comm. East Access	**17**	**B**	**13**	**B**	**16**	**B**	**13**	**B**
Eastbound Left	*12*	*B*	*8*	*A*	*12*	*B*	*8*	*A*
Eastbound Through	*13*	*B*	*13*	*B*	*14*	*B*	*13*	*B*
Eastbound Right	*11*	*B*	*9*	*A*	*12*	*B*	*10*	*A*
Westbound Left	*10*	*B*	*10*	*A*	*11*	*B*	*9*	*A*
Westbound Through+Right	*21*	*C*	*11*	*B*	*18*	*B*	*11*	*B*
Northbound Left	*13*	*B*	*22*	*C*	*12*	*B*	*21*	*C*
Northbound Through+Right	*12*	*B*	*20*	*B*	*11*	*B*	*19*	*B*
Southbound Left	*12*	*B*	*21*	*C*	*11*	*B*	*19*	*B*
Southbound Through+Right	*12*	*B*	*19*	*B*	*11*	*B*	*18*	*B*
STOP SIGN CONTROL								
#102. Aurora Parkway at PA-7 Access	**0**	**A**	**1**	**A**	**0**	**A**	**0**	**A**
Westbound Left	*9*	*A*	*11*	*B*				
Northbound Left+Right	*20*	*C*	*35*	**E**				
Northbound Right					*10*	*A*	*12*	*B*

Note: Delay represented in average seconds per vehicle. At stop-controlled intersections, the movements that are free flowing and were estimated to have zero delay are not listed.

Table 3. Comparison of Peak Hour 95th Percentile Queues

Intersection and Lanes Groups	Existing Storage	2040 Bkgrd + Project MTS 95th % Q AM	2040 Bkgrd + Project MTS 95th % Q PM	2040 Bkgrd + Project Updated 95th % Q AM	2040 Bkgrd + Project Updated 95th % Q PM	Max. Queue	CDOT SHAC Requirement (NR-B) Speed (mph)	CDOT SHAC Requirement (NR-B) Total (feet)	CDOT SHAC Requirement (NR-B) Storage (feet)	CDOT SHAC Requirement (NR-B) Taper (feet)	Proposed Future Storage
#101. Aurora Parkway at PA-3/PA-5/Comm. East Access		*Signalized*		*Signalized*							
Eastbound Left	-	12'	29'	12'	29'	29'	35	310	190	120	**190'**
Eastbound Through	-	98'	268'	97'	244'	268'	-	-	-	-	**-**
Eastbound Right	-	0'	11'	0'	11'	11'	35	310	190	120	**190'**
Westbound Left	-	15'	29'	16'	31'	-	35	-	-	-	**-**
Westbound Through+Right	-	250'	153'	208'	13'	-	-	-	-	-	**-**
Northbound Left	-	30'	119'	38'	126'	119'	25	180	90	90	**120'**
Northbound Through+Right	-	17'	38'	19'	36'	-	-	-	-	-	**-**
Southbound Left	-	11'	13'	11'	13'	16'	25	180	90	90	**90'**
Southbound Through+Right	-	24'	28'	24'	28'	-	-	-	-	-	**-**
#102. Aurora Parkway at PA-7 Access		*Stop-Controlled*		*Stop-Controlled*							
Westbound Left	-	0'	3'			-	-	-	-	-	**-**
Northbound Left+Right	-	10'	15'			-	-	-	-	-	**-**
Northbound Right	-			0'	0'	-	-	-	-	-	**-**

Conclusions

It is anticipated that the existing and proposed roadway network, intersections, and accesses can accommodate the Prairie Point Filing No. 5 trips since these trips were estimated to be 6% less than the Master TIS trip forecasts for this parcel. Filing No. 5 proposes constructing five (5) fewer single-family units than the Master TIS anticipated. Please note, Filing No. 1 contained 65 fewer units than anticipated, Filing No. 2 had an increase in two (2) units, Filing No. 3 had 36 fewer units and Filing No. 4 had 13 fewer units. As noted above, the **proposed land use is consistent with the trip generation assumptions of the Master TIS, and thus the findings and recommendations of that study are still valid.** No additional traffic analysis is necessary to support this project.

I hope that the contents of this memorandum are helpful to you. If you have any questions, please feel free to give me a call.

Sincerely,
FOX TUTTLE TRANSPORTATION GROUP, LLC

Cassie Slade

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Principal