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SUBJECT: North Clarkston Costco/Walmart Traffic Count Analysis

Background

The Lewis-Clark Valley Metropolitan Planning Organization (LCVMPO) hired Keller Associates to evaluate traffic counts at both the 5th Street & Costco/Walmart and 3rd & Fair Street intersections. The traffic counts that were evaluated were provided by the LCVMPPO.

It is our understanding that the City is considering moving forward with implementing the recommended improvements to the 5th Street & Costco/Walmart intersection identified in the 2014 North Clarkston Circulation Study (see Figure 1 below). This alternative includes the removal of north/south stop signs and the addition of a raised curb to prevent left turns and east/west through traffic. These improvements will cause the Costco and Walmart entrances to become right-in, right-out only.

The purpose of this memo is to provide an evaluation of the aforementioned traffic counts at both intersections and to provide assumptions and calculations of the number of vehicles that will likely divert from the 5th Street intersection to the 3rd & Fair Street intersection after the North Clarkston Study improvements are implemented.

Keller Associates' evaluation included traffic counts at the study intersections at two different time periods: 11:00 AM to 2:00 PM on a Saturday, and 3:00 PM to 6:00 PM during a weekday.



**Figure 1: 2014 North Clarkston Circulation Study
Recommended Alternative**

Traffic Counts

Traffic volumes at the two study intersections were provided by LCVMPPO for the time periods identified on page 1 of this memo. Counts were provided for each movement at both of the study intersections in 15 minute intervals for the three hour periods. The counts are attached to this memo for reference.

Assumptions

The following assumptions were made based on the impact that implementing the North Clarkston Circulation Study improvements will likely have on turning movements at the two study intersections:

1. Vehicles that currently maneuver eastbound through the intersection, from the Walmart parking lot to the Costco parking lot, are likely to convert to right-turn movements (southbound) and will make their way to the 3rd & Fair Street Costco parking lot entrance.
2. Vehicles that currently maneuver westbound through the intersection, from the Costco parking lot to the Walmart parking lot, are likely to convert to right-turn movements (northbound) and will make their way to the two Port Drive Walmart parking lot entrances to the north.
3. Vehicles that currently make left--turns from the Costco parking lot at the 5th Street intersection will likely use the 3rd Street exit instead. These additional vehicles will be added to all three turning movements leaving the parking lot at 3rd Street based on the current percentages that make left, right, and through movements at 3rd Street from the parking lot.
4. Vehicles that currently make left--turns from the Walmart parking lot at the 5th Street intersection will likely use the two Port Drive Walmart entrances to the north.
5. Vehicles currently making left-turn movements from 5th Street to the Walmart parking lot will likely use the two Port Drive Walmart entrances to the north.
6. Vehicles currently making left-turn movements from 5th Street to the Costco parking lot will likely make their way to the 3rd & Fair Street Costco parking lot entrance.

For the purposes of the remainder of this memo, we will focus on the impacts to the 3rd and Fair Street intersection described in assumptions 1, 3, and 6 above. The color shading used on these three assumptions above is for convenience, with these same colors corresponding to Table 1 on the next page.

Traffic Analysis

A summary of existing turning movements is summarized in Tables 1 and 2 on the next page.

Table 1: Existing Traffic Counts – 5th Street & Costco/Walmart Intersection

Time Period	Southbound			Westbound			Northbound			Eastbound		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Saturday 11:00AM-2:00PM	58	387	6	277	145	59	733	205	206	14	98	578
Thursday 3:00PM-6:00PM	52	352	6	230	85	55	649	266	220	5	45	550



Per assumptions 1, 3, and 6, the turning movements highlighted in green, orange, and blue above will likely increase the number of vehicles at the 3rd and Fair Street intersection. For convenience, the turning movements at the 3rd & Fair Street intersection that will likely be affected by the proposed 5th Street & Costco/Walmart intersection improvements are highlighted in Table 2 below. The colors used below demonstrate where the existing counts from Table 1 above are likely to be distributed. Assumptions 1 & 6 will result in increased left-turn movements from Fair Street into the Costco parking lot and Assumption 3 will result in increased traffic leaving the Costco parking lot at 3rd & Fair Street.

Table 2: Existing Traffic Counts – 3rd & Fair Street Intersection

Time Period	Southbound			Westbound			Northbound			Eastbound		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Saturday 11:00AM-2:00PM	182	70	76	9	323	483	18	45	58	36	142	14
Tuesday 3:00PM-6:00PM	189	70	89	18	514	292	23	22	80	40	192	11



Table 1 and 4 below represent the anticipated total vehicle counts and percentage of increase over existing conditions at the 3rd & Fair Street intersection that will result from the proposed improvements at the 5th Street and Costco/Walmart intersection. These are averages of the weekly & weekend periods.

Table 1: Anticipated Traffic Increase – 3rd & Fair Street Southbound Movements

	Traffic Movement			
	Left	Thru	Right	Total
Existing Average Traffic (veh/3 hr.)	186	70	83	339
Percentage of Total	54.9%	20.6%	24.5%	100.0%
Anticipated Average Traffic Increase Distribution (veh/3 hr.)	140	52	62	254
Traffic after Increase (veh/ 3/hr.)	326	122	145	593
Percentage Increase	75%	74%	75%	75%

Table 4: Anticipated Traffic Increase – 3rd & Fair Street Eastbound Movements

	Traffic Movement
	Left
Existing Average Traffic (veh/3 hr.)	14
Anticipated Average Traffic Increase (veh/3 hr.)	127
Traffic after Increase (veh/ 3/hr.)	141
Percentage Increase	907%

After the proposed changes, each of the southbound movements at the 3rd Street & Fair Street intersection would see an approximate total traffic increase of 75% and the left-turn movement from Fair Street into the Costco parking lot would see an increase of 907%.

Recommendation

The total anticipated increase to the existing traffic conditions at the 3rd & Fair Street intersection is substantial and warrants modification to the lane configuration. The primary concern is the large increase in eastbound left-turn movements into the parking lot. There is not a dedicated left-turn lane into Costco’s parking lot at this intersection. Additionally, the increase to the southbound traffic will have a noticeable impact, especially since there is only a single lane exiting the parking lot at this location. We recommend the following:

1. North leg of intersection (Costco): Since this leg of the intersection is privately owned, any changes to the striping would be at Costco’s discretion. It is recommended that the LCVMPO provide a copy of this memo to Costco management so that they are aware of the impending changes to traffic patterns and how it will affect their 3rd & Fair Street entrance/exit.



Figure 2: Existing 3rd & Fair Street Intersection

2. West leg of intersection (eastbound): It is apparent from this traffic count analysis that there will be a significant increase in left-turn traffic from the west leg of the intersection into the Costco parking lot at the 3rd & Fair Street intersection. It is recommended that the City of Clarkston restripe the west leg of the intersection from a 2-lane configuration to a 3-lane configuration consisting of 2 through lanes (east and west bound) and a left-turn lane (west leg). Additionally, the east leg of the

intersection should include striping to merge the 3-lane configuration back down to 2-lanes. It is recommended that these improvements be implemented at the same time as the proposed improvements at the 5th Street and Costco/Walmart intersection.