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To: Kemble Pope, Trackside Center, LLC
Steve Greenfield, P.E. Cunningham Engineering

From: Jonathan Flecker, P.E.

Date: January 12, 2017

Re: Trackside - Supplemental Information Regarding Trip Generation

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The purpose of this memo is to provide additional information and clarity to our August 2016 traffic study prepared for the Trackside project.

There is an upwards rounding in Table 6 "of the report" that occurred for each of the land uses; however, when summed together the total estimated daily trips is 711.

For the traffic study, we conducted traffic counts at the entrance to the project's parking lot to identify trips to and from the existing businesses. These volumes are significantly lower than the rates that would be estimated using ITE's *Trip Generation*. This is due to two reasons:

- the observed volumes in the alley do not represent all of the trips generated by the existing site as many customers elect to use on-street parking or adjacent City parking lots;

- Second, the existing commercial businesses at the site do not generate the volume of traffic which *Trip Generation* projects. The analysis below considers the existing traffic in the alley and compares it to the traffic in the alley as a result of the project. We also compared the trip generation of the project to traffic volumes with an invigorated site, i.e. maintaining the site as a retail development but with "average" retail uses. Daily rates are those used in the City traffic model while peak hour rates are contained in *Trip Generation*.

Table 1 presents the project trip generation for the proposed site. The project is expected to generate 711 daily trips, 36 a.m. trips and 101 p.m. trips. The 711 trips are made up of 551 trips associated with the retail component and 161 trips with the residential component.

TABLE 1
PROJECT TRIP GENERATION

Land Use	Amount	Trip Generation Rate			Trips		
		Daily	AM Peak Hour	PM Peak Hour	Daily	AM Peak Hour	PM Peak Hour
Trackside Center (Proposed Change in Land Use)							
Retail	9.1 ksf	60.50*	2.04	7.53	551	19	69
Apartments	27 units	5.961*	0.57	0.62	161	17	33
				Total Trips	**711**	**36**	**101**

ksf – 1,000 square feet
* City traffic model traffic daily trip generation rate
† based on decreasing commercial square footage and adding residential units
Note - numbers may not match due to rounding

Existing Traffic Conditions in Alley

Access to the site's existing parking lot is currently via the alley between the railroad tracks and I Street in both north and south directions. Traffic counts were completed at the 3rd Street / Alley and 4th Street / Alley intersections in October 2015 and again on November 30, 2016. The most recent counts show lower traffic volumes along the alley, with a reduction in trips at both the 3rd Street and 4th Street intersections. The lower volumes were confirmed with an additional count conducted on December 13, 2016 at the site's existing parking lot.

Table 2 summarizes each of these counts directionally by total daily trips and a.m. and p.m. peak hour trips. Based on the observed volumes more trips appear to use 3rd Street as the primary access. Considering the business uses on the southern segment of the alley this would appear reasonable. Table 2 also illustrates that the parking lot traffic is primarily accessed via 3rd Street.

TABLE 2
TRAFFIC VOLUMES

Location	Daily		AM Peak Hour		PM Peak Hour	
	NB	**SB**	**NB**	**SB**	**NB**	**SB**
October 29, 2015 counts						
3rd Street / Alley	124	95	4	2	25	15
4th Street / Alley	79	57	1	5	19	9
November 30, 2016 counts						
3rd Street / Alley	77	64	6	2	10	15
4th Street / Alley	51	41	2	2	14	4
December 13, 2016 parking lot entrance counts						
	Daily		**AM Peak Hour**		**PM Peak Hour**	
To / From 3rd Street	70	58	4	4	13	9
To / From 4th Street	48	37	0	3	8	8

	Turning Movements to/from Parking Lot (December 13, 2016)											
	NB Left	**SB Right**	**EB Left**	**EB Right**	**NB Left**	**SB Right**	**EB Left**	**EB Right**	**NB Left**	**SB Right**	**EB Left**	**EB Right**
To / From 3rd Street	36	--	--	29	4	--	--	1	7	--	--	4
To / From 4th Street	--	8	14	--	--	0	0	--	--	3	2	--

Projected Traffic Conditions in Alley

The 2016 traffic counts indicate about 140 daily trips access the alley from 3rd Street while about 85 trips are made through the 4th Street intersection. Parking along the alley consists of 'X' permit parking and 37 on-site commercial parking spaces. The project proposes 30 on-site spaces to be predominately reserved for residential parking that will be accessed from the alley. Three of the 30 on-site spaces will be allocated as retail spaces for employees accessible from the alley. Parking in the alley along the project frontage will remain as 'X' permit parking plus one loading zone space, replacing in-kind the existing parking spaces. There will be no net change in parking on the alley.

With development of the project fewer commercial related trips are projected along the alley. As shown in Table 3 there will be 65 fewer daily commercial trips to or from 3rd Street (36+29) and 22 fewer daily commercial trips to or from 4th Street (14+8) due to the change in use of the on-

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site parking. The most current traffic volumes in the alley are lower than the counts conducted in 2015, possibly due to lower occupancy of the existing buildings. Both 2015 and 2016 counts are shown in Table 3 to bracket the anticipated change in expected trips in the alley as a result of the project.

TABLE 3
BASELINE ALLEY TRAFFIC VOLUMES

	3rd Street Access		4th Street Access	
Existing Traffic in Alley	**NB**	**SB**	**NB**	**SB**
October 2015 Counts	124	95	79	57
November 2016 Counts	*77*	*64*	*51*	*41*
Existing Parking Lot Commercial Trips (December 2016)	(36)	(29)	(14)	(8)
'Base' Traffic Conditions (without existing project site)*****				
October 2015 Counts	**88**	**66**	**65**	**49**
November 2016 Counts	***41***	***35***	***37***	***33***

* subtracts existing on-site parking lot trips

The majority of the project traffic generated by the site that will use the alley will be the residential component. As noted in Table 1 the residential traffic is expected to generate 161 daily trips (ingress and egress combined), 17 a.m. peak hour trips and 33 p.m. peak hour trips. The retail trips generated by the site will utilize on-street parking, surface lot parking or the parking structure at 4th and G Streets. This is consistent with other downtown retail uses. The ability to use ride-sharing programs will also allow some customers to avoid having to locate a parking space. There will be a few retail trips using the alley including those designated as on-site parking spaces for retail employees. Reducing the number of residential units would have a limited effect on alley traffic with about 6 daily trips being eliminated for each residential unit removed. Both trip generation rates account for ancillary traffic including mail, trash, and delivery trucks. These ancillary trips are expected to utilize a loading zone in the alley along the project frontage that will be marked as part of the project layout.

Two-Way versus One-Way Traffic

The Trackside Center project is proposing that the alley be converted to one-way northbound traffic only. The Bicycling, Transportation and Street Safety Commission agreed with the recommendation on October 13, 2016. All traffic will enter the alley from 3rd Street while all traffic will exit at 4th Street. Table 4 presents a comparison of 'Base' traffic conditions at both ends of the alley under two-way and one-way conditions. Under a one-way flow scenario the 49 southbound trips currently entering the alley at 4th Street would be re-routed and enter at 3rd Street. The 66 southbound trips currently exiting at 3rd Street would be directed north and exit onto 4th Street. Under one-way flow, the alley traffic will generally even out.

With project traffic added to the alley, the resident traffic will amount to 161 new daily trips. The number of employee-related trips is unknown; however, it is expected to be limited to managers of the various shops. Since traffic will enter from one direction, i.e. the south, and depart to the north, vehicles will not be on any portion of the alley twice. Eighty trips would enter from the south and travel to the project's parking lot or the loading zone. The 81 outbound trips would depart the parking lot / loading zone and head north to 4th Street. Table 5 illustrates the projected traffic conditions in the alley under two-way and one-way travel. With two-way travel up to 234 daily trips (154+80) could enter or depart the alley at 3rd Street while 195 daily trips (114+81) could use 4th Street. Under a one-way travel flow 217 vehicles (137+80) could enter the alley from 3rd Street while up to 212 vehicles (131+81) could depart at 4th Street. Under two-way flow this would result in 15 additional trips (234-219) at the 3rd Street access to the alley and 59 additional trips (195-136) at the 4th Street side. If the alley is converted to one-way only 36 additional trips (217-181) will occur on the south end with 38 additional trips (212-174) on the north end.

TABLE 4
TWO-WAY VS ONE–WAY ALLEY TRAFFIC
(WITHOUT PROJECT)

	Existing Daily Traffic			
	Two- Way Traffic			**One-Way Traffic**
	NB	**SB**	**Sum**	**NB**
3rd Street / Alley				
October 2015 Counts	88	66	154	88 + 49 = **137***
November 2016 Counts	*41*	*35*	*76*	*41 + 33 =* ***74***
4th Street / Alley				
October 2015 Counts	65	49	114	66 + 65 = **131**†
November 2016 Counts	*37*	*33*	*70*	*35 + 37 =* ***72***

*Traffic entering alley from 3rd Street
†Traffic departing alley at 4th Street

The traffic already in the alley is associated with the retail establishments the project will replace, motorists who are using the alley to park under the 'X' parking district permit program, neighborhood residents accessing their garages, and pass-through traffic; the 'X' permit operates seven days a week from 6:00 A.M. to 10:00 P.M.

The parking data previously collected along the alley showed that while occupancy was at or near 100% during the day, spaces became available beginning about 4:00 p.m. By 5:00 about half of the spaces were available with 60% available after 7:00 p.m. It is possible that a changeover of these spaces may occur beginning at about 4:00 as 'X' permit holders leave and employees working an evening shift arrive. Based on the collected data we would expect about ten additional trips in the alley.

TABLE 5 TWO-WAY VS ONE–WAY ALLEY TRAFFIC WITH PROJECT				
	Daily Traffic			
	Two- Way Traffic			**One-Way Traffic**
	NB	**SB**	**Sum**	**NB**
3rd Street / Alley				
'Base' Traffic Conditions				
October 2015 Counts	88	66	154	137
November 2016 Counts	*41*	*35*	*76*	*74*
Project Traffic*	45	45	90	90
Total Base plus Project Traffic				
October 2015 Counts			244	227
November 2016 Counts			*166*	*164*
Existing Alley Traffic				
October 2015 Counts			219	181
November 2016 Counts			*141*	*118*
Net Difference in Alley				
October 2015 Counts			**25**	**46**
November 2016 Counts			***25***	***46***
4th Street / Alley				
'Base' Traffic Conditions				
October 2015 Counts	65	49	114	131
November 2016 Counts	*37*	*33*	*70*	*72*
Project Traffic*	46	45	91	91
Total Base plus Project Traffic				
October 2015 Counts			205	222
November 2016 Counts			*161*	*163*
Existing Alley Traffic				
October 2015 Counts			136	174
November 2016 Counts			*92*	*115*
Net Difference in Alley				
October 2015 Counts			**69**	**48**
November 2016 Counts			***69***	***48***

*includes 10 additional inbound and outbound trips for employee changeover

Traffic Comparison of Invigorated Site (no change in land use) and Proposed Project

The traffic study compared the trips that were observed in the alley just south of the entrance to the existing parking lot with an estimate for the proposed land uses. This shows a comparison in trips from what is occurring in the alley today to what is projected for the entire project (alley

and alternate parking combined). The site currently contains 11,000 square feet of commercial / retail uses. From a trip generation perspective the existing site is underutilized, relative to the available uses allowed in the zoning code.

Table 6 illustrates the effect a reinvigorated site could have on trip generation. Without changing the land use the site could generate 665 daily trips, 22 a.m. peak hour trips and 83 p.m. peak hour trips when applying average *Trip Generation* rates. Table 6 also compares the revitalized commercial site with the proposed Trackside project. The Trackside project would generate 46 additional daily trips, 14 additional a.m. peak hour trips and 18 additional p.m. peak hour trips relative to a reinvigorated site.

An invigorated commercial site could maintain the existing parking lot and its 37 parking stalls. With the parking lot available on-site it is expected that it would be more fully utilized than the current 49% maximum utilization. This would result in additional trips being made down the alley.

TABLE 6
PROJECT TRIP GENERATION COMPARISON
INVIGORATED SITE AND TRACKSIDE CENTER

Land Use	Amount	Trip Generation Rate			Trips		
		Daily	AM Peak Hour	PM Peak Hour	Daily	AM Peak Hour	PM Peak Hour
Existing Commercial (Invigorated Site)							
Retail	11.0 ksf	60.50*	2.04	7.53	**665**	**22**	**83**
Trackside Center (Proposed Change in Land Use)							
Retail	9.1 ksf	60.50*	2.04	7.53	551	19	69
Apartments	27 units	5.961*	0.57	0.62	161	17	33
				Total Trips	**711**	**36**	**101**
Net Difference – Trackside vs. Redevelopment							
				Net Additional Traffic†	**46**	**14**	**18**

ksf – 1,000 square feet
* City traffic model traffic daily trip generation rate
† based on decreasing commercial square footage and adding residential units
Note - numbers may not match due to rounding

Pedestrians and Bicycles

As part of the recent alley counts pedestrian and bicyclists were also counted. Table 7 provides the daily, a.m. and p.m. peak hour trips. About 75 pedestrians were identified over a daily period walking along the alley with 37 pedestrians accessing 3rd Street and 38 pedestrians accessing 4th Street. On a peak hour basis seven pedestrians used the alley in the a.m. while 19 used the alley in the p.m.

There is currently little bicycle traffic occurring along the alley, with 10 trips at the 3rd Street alley and 11 trips at the 4th Street alley. Based on the daily counts, which were broken into 1-hour increments most of the bike travel started on one end of the alley and ended at the other end.

The project has proposed to install a contra-flow bike lane along the west side of the alley to allow southbound bicyclists to continue to use the alley. We would recommend that the contra-flow lane be differentiated from the rest of the alley, i.e. parking and travel lane. The contra-flow lane would likely be used more as a multi-use path, similar to facilities throughout the City, which allows both pedestrian and bicyclist travel.

TABLE 7
EXISTING BICYCLE AND PEDESTRIAN TRAFFIC

	Daily			AM			PM		
	NB	**SB**	**Total**	**NB**	**SB**	**Total**	**NB**	**SB**	**Total**
Pedestrian Traffic									
3rd Street / Alley*	14	23	37	1	3	4	3	6	9
4th Street / Alley†	13	25	38	0	3	3	4	6	10
Bicycle Traffic									
3rd Street / Alley‡	5	5	10	0	1	1	1	1	2
4th Street / Alley‡	6	5	11	0	1	1	1	2	3

* peak hours 8:15-9:15 a.m. and 3:00 – 4:00 p.m.
† peak hours 8:30-9:30 a.m. and 4:45 – 5:45 p.m.
‡ peak hours 8:00-9:00 a.m. and 6:00 – 7:00 p.m.

Please contact Ken or myself if you have any questions.

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