



Responses by Chris McGranahan
LSC Transportation Consultants, Inc.
August 3, 2021

Comments: 07/13/21

By: Kyle Morris (BHI)

Checked by: Brianna Medema

1. Provide current site plan, and site circulation plan (can be the same document). The circulation details were added to the site plan.

2. Provide internal queuing discussion section. Reference *Drive-Through Queue Generation, 1st Edition* by Mike Spack, P.E., PTOE (for Drive-In Banks, this is 160 feet or 8 vehicles), and available on-site queuing space. Added.

3. Provide discussion on pedestrian circulation and safety. Added.

May 27, 2021

Mr. Clif Poynter
Farnsworth, Inc.
5613 DTC Parkway, Suite 1100
Greenwood Village, CO 80111

Re: East Creek Commercial
Trip Generation
Compliance Letter
Aurora, CO
LSC #170373

Dear Mr. Poynter:

In response to your request, we have completed this trip generation compliance letter for the East Creek Commercial development in Aurora, Colorado. The purpose of this letter is to estimate the trip generation potential of the currently proposed commercial land use for comparison with the previously approved commercial land use in the December 19, 2017 *East Creek TIA* (TIA) by LSC, the April 4, 2018 *East Creek Commercial Trip Generation Compliance Letter* by LSC, and the April 11, 2019 *East Creek Commercial - Phase 2 Trip Generation Compliance Letter* by LSC.

LAND USE

The currently proposed land use includes a 2,700 square-foot drive-in bank. The City previously approved a gas station with 12 fueling positions and an automated car wash.

TRIP GENERATION

Table 1 shows the estimated average weekday trip generation potential for the previously approved or proposed and the currently proposed commercial land use based on the rates from *Trip Generation, 10th Edition, 2017* by the Institute of Transportation Engineers (ITE).

The currently proposed land use has the potential to generate about 322 fewer primary vehicle-trips on the average weekday than the land use approved with the December, 2017 TIA, with about half entering and half exiting during a 24-hour period. During the morning peak-hour, which generally occurs for one hour between 6:30 and 8:30 a.m., about 70 additional primary vehicle-trips would access the site. During the afternoon peak-hour, which generally occurs for one hour between 4:00 and 6:00 p.m., about 4 additional primary vehicle-trips would access the site.

The currently proposed land use has the potential to generate about 189 fewer primary vehicle-trips on the average weekday than the land use approved with the 2019 trip generation compliance letter, with about half entering and half exiting during a 24-hour period. During the morning peak-hour, which generally occurs for one hour between 6:30 and 8:30 a.m., about 44 fewer primary vehicle-trips would access the site. During the afternoon peak-hour, which generally occurs for one hour between 4:00 and 6:00 p.m., about 11 additional primary vehicle-trips would access the site.

SUMMARY

The currently proposed land uses are expected to generate less daily trips than the previously approved land uses. The currently proposed land use is expected to generate more morning peak-hour trips than approved in the TIA and less morning peak-hour trips than approved in the 2019 compliance letter. The currently proposed land use is expected to generate a slightly higher but similar level of trips in the afternoon peak-hour compared to both the TIA and the 2019 compliance letter. This slight increase can be accommodated by the right-in/right-out access intersection so no additional analysis should be necessary.

* * *

We trust this information will assist you in planning for the East Creek Commercial development.

Respectfully submitted,

LSC Transportation Consultants, Inc.

By: 

Christopher S. McGranahan, P.E., PTOE

CSM/wc

Enclosures: Table 1

Table 1
ESTIMATED TRAFFIC GENERATION COMPARISON
East Creek Commercial
Aurora, CO
LSC #170373; May, 2021

Trip Generating Category	Quantity	Average Weekday	Trip Generation Rates ⁽¹⁾				Vehicle - Trips Generated				
			AM Peak Hour		PM Peak Hour		Average Weekday	AM Peak Hour		PM Peak - Hour	
			In	Out	In	Out		In	Out	In	Out
PREVIOUSLY APPROVED LAND USE FROM DECEMBER 19, 2017 EAST CREEK TIA BY LSC											
Shopping Center	26.7 KSF ⁽²⁾	107.81	1.618	0.991	4.446	4.817	2,879	43	26	119	129
					Pass-by Trips =		864	10	10	37	37
					Primary Trips =		2,015	33	16	82	92
PREVIOUSLY PROPOSED LAND USE FROM APRIL 4, 2018 EAST CREEK COMMERCIAL TRIP GENERATION COMPLIANCE LETTER BY LSC											
Gas Station	12 FP ⁽³⁾	205.36	6.360	6.110	7.135	6.855	2,464	76	73	86	82
Car Wash	1 Tunnel	387.50	19.375	19.375	38.750	38.750	388	19	19	39	39
Inline Retail	4 KSF	37.75	0.583	0.357	1.829	1.981	151	2	1	7	8
					Sub-Total =		3,003	97	93	132	129
					Pass-by Trips =		1,400	43	43	57	57
					Primary Trips =		1,603	54	50	75	72
PREVIOUSLY PROPOSED LAND USE FROM APRIL 11, 2019 EAST CREEK COMMERCIAL - Phase 2 TRIP GENERATION COMPLIANCE LETTER BY LSC											
Gas Station	12 FP	205.36	6.360	6.110	7.135	6.855	2,464	76	73	86	82
Car Wash	1 Tunnel	387.50	19.375	19.375	38.750	38.750	388	19	19	39	39
Inline Retail	3 KSF	37.75	0.583	0.357	1.829	1.981	113	2	1	5	6
Coffee Shop/Restaurant	1.5 KSF	505.70	51.581	49.559	18.155	18.155	759	77	74	27	27
					Sub-Total =		3,724	174	167	157	154
					Pass-by Trips =		1,842	89	89	72	72
					Primary Trips =		1,882	85	78	85	82
								163		167	
CURRENTLY EXISTING AND PROPOSED LAND USE											
Gas Station ⁽⁴⁾	12 FP ⁽³⁾	205.36	6.360	6.110	7.135	6.855	2,464	76	73	86	82
Car Wash ⁽⁵⁾	1 Tunnel	387.50	19.375	19.375	38.750	38.750	388	19	19	39	39
Drive-In Bank ⁽⁶⁾	2.7 KSF	100.03	5.510	3.990	10.225	10.225	270	15	11	28	28
					Sub-Total =		3,122	110	103	153	149
					Pass-by Trips ⁽⁷⁾ =		1,429	47	47	62	62
					Primary Trips =		1,693	63	56	91	87
								119		178	
					Net Increase in Primary Trips from 2017 TIA =		-322	30	40	9	-5
								70		4	
					Net Increase in Primary Trips from 2019 Letter =		-189	-22	-22	6	5
								-44		11	

Notes:

- (1) Source: *Trip Generation*, Institute of Transportation Engineers, 10th Edition, 2017 for currently proposed land use
- (2) KSF = 1,000 square feet
- (3) FP = Fueling Positions
- (4) ITE Land Use No. 945 - Gasoline/Service Station with Convenience Market
- (5) ITE Land Use No. 948 - Automated Car Wash. No weekday or AM rates are available. The AM rates were assumed to be half of the PM rate and the daily rate was assumed to be five times the PM rate.
- (6) ITE Land Use No. 912 - Drive-In Bank
- (7) The passby trips are expected to be 50% for the Gas Station, 30% for the Car Wash, and 30% for the Drive-In Bank based on the ITE *Trip Generation Handbook*, 3rd Edition.