

## 2021 BASELINE/BACKGROUND TRAFFIC

Figure 4 presents projections of short-term baseline traffic with growth in traffic volumes shown in Figure 3 plus Filing 1 only.

## SHORT-TERM BASELINE TRAFFIC

The projected short-term baseline traffic volumes at the study area intersections are shown in Figure 5. These include the existing traffic volumes plus the projected traffic to be generated by the adjacent residential Filings 1 and 4 of Ellicott Town Center.

## SHORT-TERM BASELINE PLUS SITE-GENERATED TRAFFIC

Projected short-term-baseline-plus-site traffic volumes at the study area intersections are shown in Figure 10. These represent the sum of the short-term baseline traffic volumes from Figure 5 plus projected site-generated traffic volumes for the proposed rezone (from Figure 7).

## RELATIVE SITE TRAFFIC IMPACT AGAINST THE ACCESS CODE FIVE-PERCENT-OF-CAPACITY

The “Colorado State Highway Access Code” requires the study area for the TIS to be taken out to 5 percent of roadway capacity. Site generated traffic from each of Filing 1, Filing 2, Filing 3 or Filing 4 **individually** would not exceed the 5 percent of roadway capacity on Highway 94 at Peyton Highway or Ellicott Highway. Therefore, individually, a traffic study for each project would generally not be required to include these intersections in a traffic study, and as such would not be required to construct turn lanes or escrow funds for off-site improvements such as signals or turn-lane improvements. These filings are essentially phases of a single development, so it is reasonable to consider the study area including these two off-site intersections. However, it is also reasonable to evaluate the relative impact of the cumulative timing of off-site improvements. LSC is suggesting that five percent of the roadway capacity is a logical and established threshold to evaluate site-generated impacts and use as a phasing mechanism for off-site improvements.

Table 2 presents the calculation of the projected site-generated traffic against the five percent of Highway 94 roadway capacity. This table presents the **cumulative** site-generated traffic volumes for the following at Peyton Highway/SH 94 and Ellicott Highway/SH 94:

- Filing No. 1 only
- Filing No. 1 plus Filing No. 2 (first 3 lots of the rezone)
- Filing No. 1 plus Filing No. 2 + 3 (entire 9 lot rezone)
- Filings Nos. 1, 2, 3 and 4 combined

The table presents site-generated traffic in terms of turning-movement volume at both intersections and as Highway 94 roadway link volumes just east of the Peyton Highway intersection and just west of the Ellicott Highway intersection. The Highway 94 roadway capacity

It appears that this should be figure 8, figure 8 has filing 2+3 site generated traffic.

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# LSC RESPONSES TO COMMENTS ON: Ellicott Town Center Rezone -- report

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Number: 1 Author: Daniel Torres Subject: Callout Date: 4/27/2020 10:42:24

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[It appears that this should be figure 8, figure 8 has filing 2+3 site generated traffic.](#)

 Author: jchodsdon Subject: Sticky Note Date: 6/2/2020 17:00:04  
LSC Response: Corrected.

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of 3,200 vehicles per hour has been taken from CDOT's OTIS web site. The directional capacity of 1,824 vehicles per hour in the peak direction has been calculated based on the CDOT 57 percent directional distribution factor.

The following combined cumulative site-generated volumes have been compared to the calculated Highway 94 roadway capacity:

- Filing No. 1 only
- Filing No. 1 plus Filing No. 2 (first 3 lots of the rezone)
- Filing No. 1 plus Filing No. 2 + 3 (entire 9 lot rezone)
- Filings Nos. 1, 2, 3 and 4 combined

Table 2 and Table 3 indicate if each of the cumulative scenarios exceeds the 5 percent of roadway capacity "threshold." The following scenarios would **not** exceed the 5 percent of roadway capacity threshold:

- Filing No. 1 only
- Filing No. 1 plus Filing No. 2 (first 3 lots of the rezone)
- Filing No. 1 plus Filing No. 2 + 3 (entire 9 lot rezone)

The following scenarios would exceed the 5 percent of roadway capacity threshold:

- Filings Nos. 1, 2, 3 and 4 combined

## **20-YEAR FUTURE BACKGROUND TRAFFIC**

Projections of future background through traffic volumes on Highway 94 have been made using the CDOT 20-year factor of 1.26. Background traffic volumes also include the buildout of Ellicott Town Center (although this may be a conservative assumption).

## **20-YEAR FUTURE BACKGROUND PLUS SITE-GENERATED TRAFFIC**

The projected 20-year background-plus-site traffic volumes at the study area intersections are shown in Figure 12. These represent the sum of the 20-year future background traffic volumes from Figure 11 plus the projected site-generated traffic volumes for the proposed rezone (from Figure 7).

Figure 8 is the entire rezone <sup>1</sup>

## **PROJECTED LEVELS OF SERVICE**

Level of service (LOS) is a quantitative measure of the level of delay at an intersection. Level of service is indicated on a scale from "A" to "F." LOS A is indicative of little congestion or delay, while LOS F indicates a high level of congestion or delay. Level of service delay ranges are summarized in Table 4.

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Number: 1 Author: Daniel Torres Subject: Callout Date: 4/27/2020 10:52:44

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[Figure 8 is the entire rezone](#)

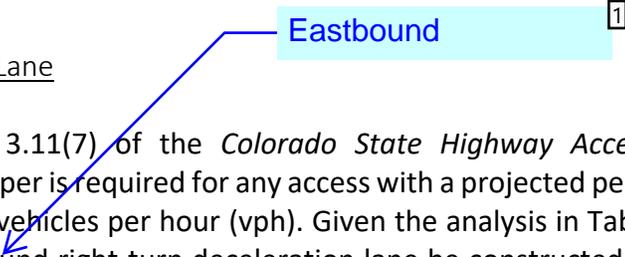
 Author: jchodsdon Subject: Sticky Note Date: 6/2/2020 17:00:13  
LSC Response: Corrected.

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*existing highway auxiliary lanes close to the access, nearby traffic control devices, available stopping sight distance, and where other topographic and highway design factors exist that determine the need.”*

The 2012 Filing 1 permit included conditions and notations regarding potential future auxiliary lanes (under condition No. 46). Also, CDOT comments (for the submitted Filing No. 1 permit application submittal) indicate **“The New Log Road intersection with Hwy 94 will require a westbound-left-turn acceleration lane in Filing 2 [now called Filing 4] (2020) which can later be utilized as the westbound merge lane when signalized.”** The recent comment letter indicates that the left-turn acceleration lane should be installed at 50 vph NB LT.

LSC proposes that the left-turn acceleration lane (along with the westbound left-turn deceleration lanes mentioned in the preceding paragraph) be constructed with Filing 3 and that Filing 2 (first 3 lots) be permitted to proceed without the need to construct the left-turn lanes. The northbound left-turn movement for Filings 1 and 2 would be **at** the 50 vph, but would not exceed it. It is logical to construct the left-turn deceleration and acceleration lanes together. As indicated in the preceding paragraph, the westbound left-turn volume is projected to be below the threshold of 10 vph. The projected short-term LOS for the 2021 baseline + Filings 1 & 2 would be LOS B.

Right-Turn Deceleration Lane  Eastbound <sup>1</sup>

Per criteria in Section 3.11(7) of the *Colorado State Highway Access Code*, a right-turn deceleration lane with taper is required for any access with a projected peak-hour ingress turning volume greater than 25 vehicles per hour (vph). Given the analysis in Table 5, LSC recommends that an 800-foot westbound right-turn deceleration lane be constructed, consisting of 500 feet of deceleration length and 300 feet of transition taper length (25:1 ratio).

### Long Term

#### Right-Turn Acceleration Lane

Per criteria in Section 3.11(7) of the *Colorado State Highway Access Code*, a right-turn acceleration lane with taper is required for any access with a projected peak-hour egress turning volume greater than 50 vph when the posted speed on the highway exceeds 40 mph. Given the analysis in Table 5, the acceleration lane will not be required in the short term. The projected long-term northbound right-turn peak-hour volume is 315 vph, which exceeds CDOT’s threshold.

The State Highway Access Code calls for the following lane dimensions: a 1,380-foot eastbound right-turn acceleration lane consisting of 1,080 feet of acceleration length and 300 feet of transition taper length (25:1 ratio).

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Number: 1 Author: Daniel Torres Subject: Callout Date: 4/27/2020 16:15:40

[Eastbound](#)

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 Author: jchodsdon Subject: Sticky Note Date: 6/2/2020 17:00:20  
LSC Response: Corrected.

Table 12: Roadway Improvements			
Item #	Improvement	Timing	Responsibility
<b>Roadway Segment Improvements</b>			
1	New Log Road (Highway 94 south into the project) construct as an Urban Minor Arterial per the PUD	With Filing No. 1	Applicant
2	Springs Road (Highway 94 south into the project) construct as a gravel, secondary access road	With Filing No. 1	Applicant
3	Springs Road (Highway 94 south into the project to Cattlemen Run) construct as an Urban Non-Residential Collector	With Filing No. 2	Applicant
4	Cattlemen Run west of Springs Road into Filing 2 as a Local Street	With Filing No. 2	Applicant
5	Cattlemen Run east of Springs Road into Filing 2A as a Local Street	With Filing No. 3	Applicant
6	Springs Road south of Cattlemen Run Road into Filing 3 as an Urban Residential Collector.	With Filing No. 3	Applicant
<b>New Log Road/SH 94 Intersection Improvements</b>			
7	Eastbound Right Turn Deceleration Lane	With Filing No. 1	Applicant
8	Westbound Left Turn Deceleration Lane - 525' - to accommodate Filings 1,2 and 3	With Filing No. 3 (after Filing 2, the first 3 lots)	Applicant
9	A left-turn acceleration lane will be required for the northbound to westbound movement.	With the installation of the westbound left turn deceleration lane (w/Filing 3)	Applicant
10	Lengthening of the above westbound left turn deceleration lane lengthening to accommodate additional stacking for future development - length TBD with future TIS reports	Future Development*	Applicant
11	Eastbound Right Turn Acceleration Lane	With Future PUD development - TBD.	Applicant
<b>Springs Road/SH 94 Intersection Improvements</b>			
12	Eastbound Right Turn Deceleration Lane	With Filing No. 3 (after Filing 2, the first 3 lots)	Applicant
13	Construct a raised center median on SH 94 to prohibit westbound and northbound left-turns at the SH 94/Springs Road intersection required with construction of the eastbound right turn deceleration lane.	Required with construction of the eastbound right turn deceleration lane (w/Filing 3)	Applicant
14	Eastbound Right Turn Acceleration Lane	With Future PUD development - TBD.	Applicant
<b>Peyton Highway/SH 94 Intersection Improvements</b>			
15	Westbound Left Turn Deceleration Lane - 525' plus taper	Escrow Fair Share Amount toward future construction (See Item #17 below for details)	Applicant
16	Eastbound Left Turn Deceleration Lane	Upcoming CDOT project	To be constructed by CDOT
17	Westbound Right Turn Acceleration Lane (for southbound to westbound right turning traffic)	Upcoming CDOT project	To be constructed by CDOT
18	Westbound Right Turn Deceleration Lane - 500' plus taper	Escrow Fair Share Amount toward future construction (See Item #17 below for details)	Applicant
19	Escrow fair share percentage of the cost of future westbound right turn and left turn deceleration lanes; estimated cost: \$125,000 (allocated \$75,000 to left and \$50,000 to right). Please refer to separate Escrow Tables 8 and 9 for details.	-Filing 1 amount can be deferred and paid with Filing 2. - Filing 2, 3 and 4 Escrows due with corresponding access permits (Notice-to-proceed stage). Please refer to separate Escrow Tables 8 and 9 for details.	Applicant
20	Escrow fair share percentage of the cost of a future traffic signal; current signal cost are about \$500,000. Please refer to separate Escrow Table 7 for details.	-Filing 1 amount can be deferred and paid with Filing 2. - Filing 2, 3 and 4 Escrows due with corresponding access permits (Notice-to-proceed stage). Please refer to separate Escrow Table 7 for details.	Applicant
<b>Ellicott Highway/SH 94 Intersection Improvements</b>			
21	Eastbound Right Turn Deceleration Lane and Taper	Fair Share Escrow Amount (deferred) toward future construction (See Item #20 below for details)	Applicant
22	Escrow fair share percentage of the cost of a 273-ft eastbound right turn lane. Please refer to separate Escrow Table 11 for details.	-Filing 1, Filing 2 and Filing 2A amounts can be deferred and paid with either Filing 3 or future filings beyond Filing 3. This would be determined with the Filing 3 access permit application process. -Filing 3: Determination of the requirement to escrow or allow further deferrment would be made with the Filing 3 access permit application. Please refer to separate Escrow Table 11 for details.	Applicant
23	Escrow fair share percentage of the cost of a future traffic signal; current signal cost are about \$500,000. Please refer to separate escrow Table 10 for details)	-Filing 1, Filing 2 and Filing 3 amounts can be deferred and paid with either Filing 4 or future filings beyond Filing 4. This would be determined with the Filing 4 access permit application process. -Filing 4: Determination of the requirement to escrow or allow further deferrment would be made with the Filing 4 access permit application. Please refer to separate Escrow Table 10 for details.	Applicant
<b>Future ROW Preservation for SH 94</b>			
24	Per CDOT: It is requested that 80-foot pavement section with 4-foot shoulders on EB/WB travel lanes along the property frontage to Hwy 94 be preserved for future highway expansion in accordance with the El Paso County 2060 Corridor Preservation Plan.	With Each Plat	Applicant

\*Prior CDOT comments from 2006 indicate that the left-turn deceleration lane should be designed to accommodate future year left-turn volume. However, the applicant would prefer to phase the lane length with development phasing.

Source: LSC Transportation Consultants, Inc. (3/31/2020)

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Number: 1 Author: Daniel Torres Subject: Callout Date: 4/27/2020 13:16:31

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[item 20 is above. it appears this should be #22](#)

 Author: jchodsdon Subject: Sticky Note Date: 6/2/2020 17:00:29  
LSC Response: Corrected.

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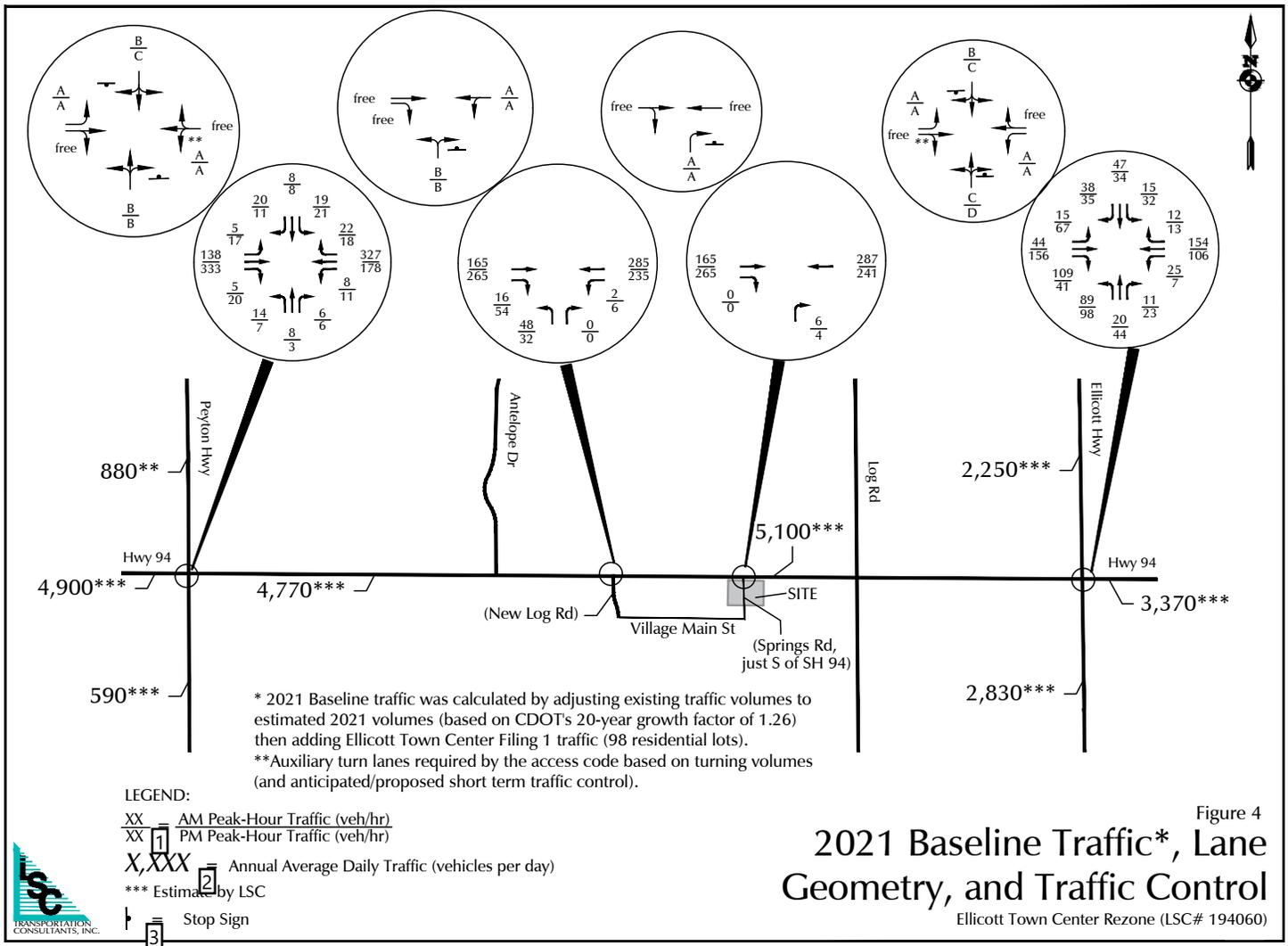


Figure 4  
**2021 Baseline Traffic\*, Lane  
 Geometry, and Traffic Control**  
 Ellicott Town Center Rezone (LSC# 194060)



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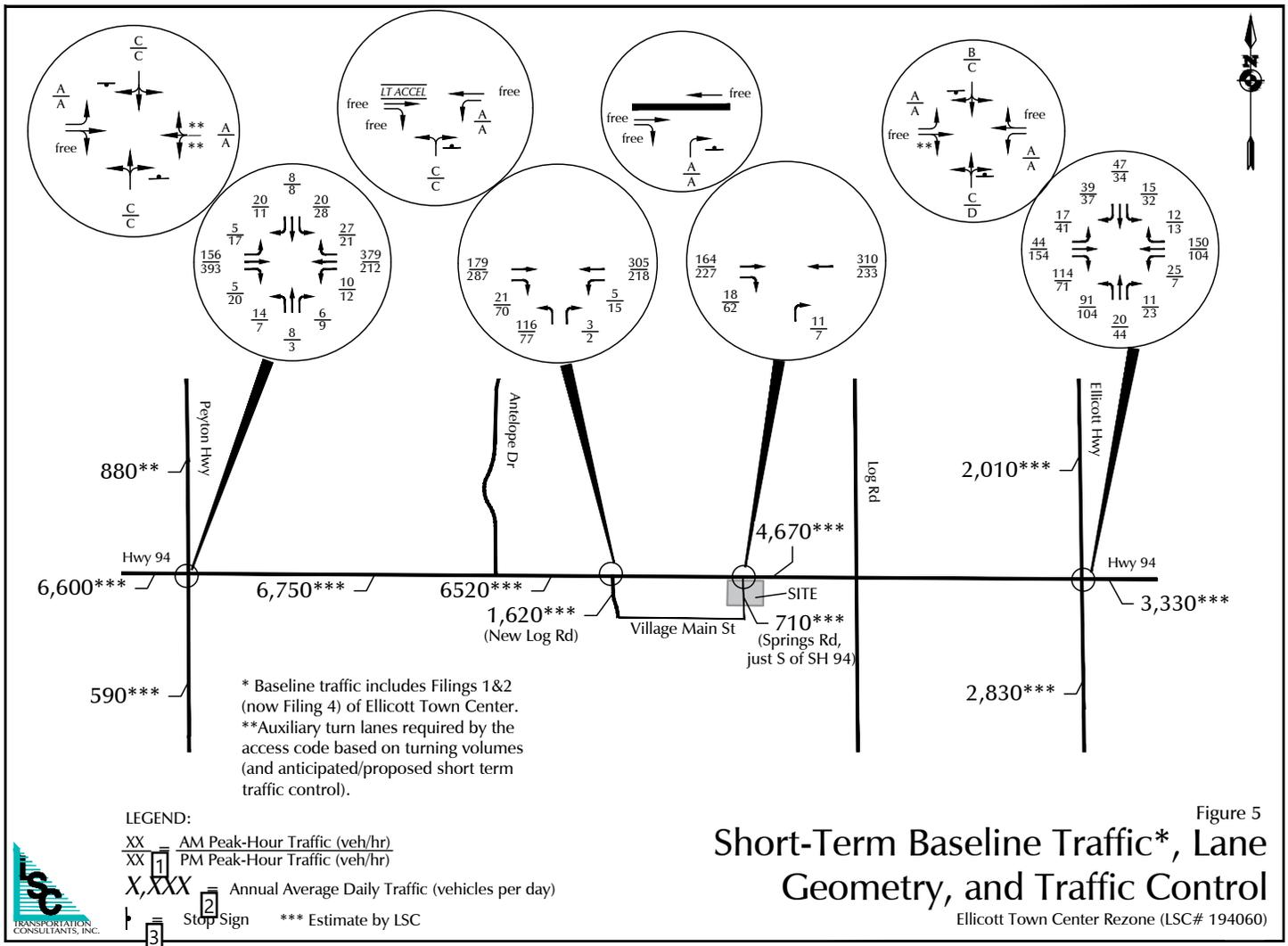
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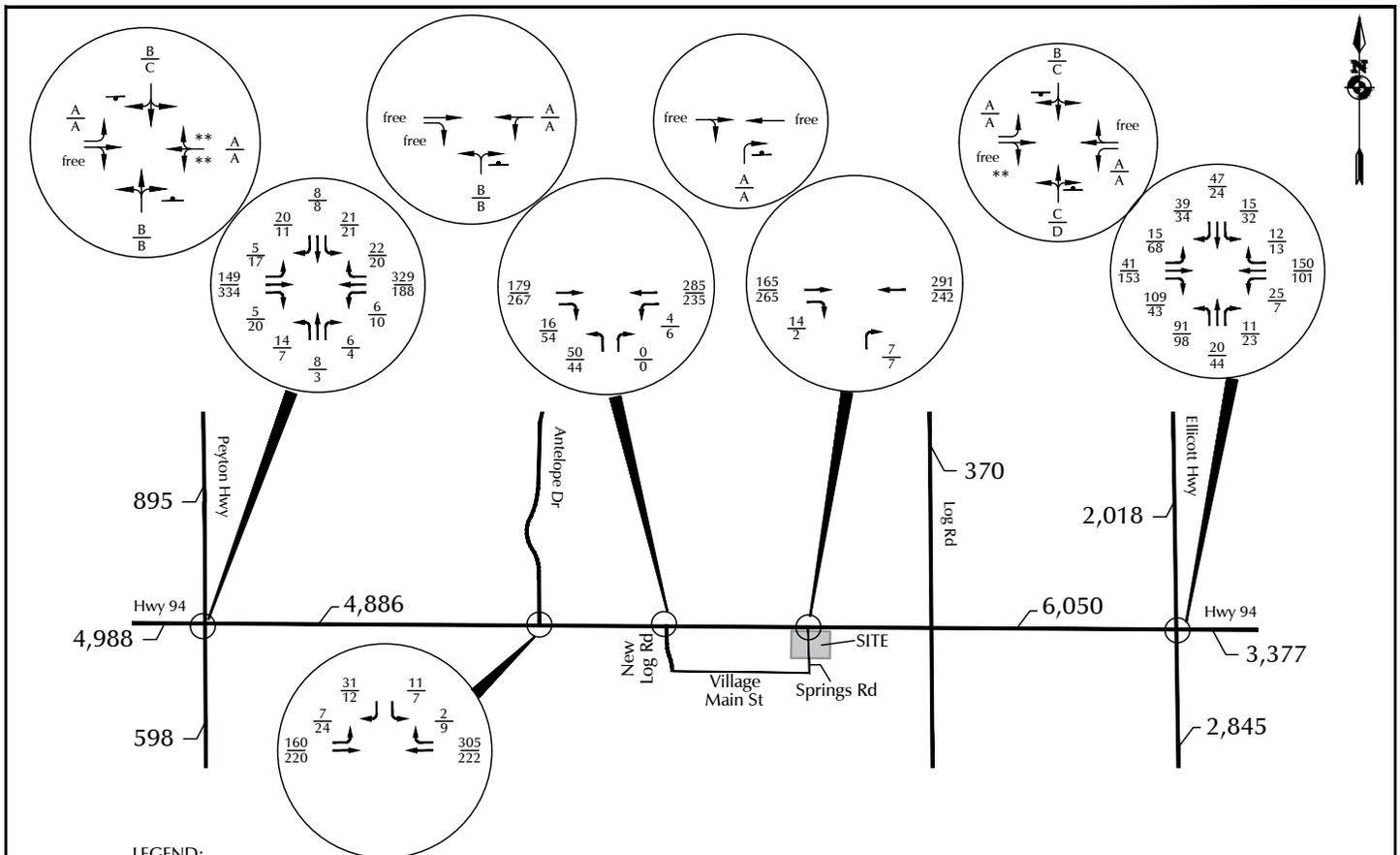


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LEGEND:

- XX AM Peak-Hour Traffic (veh/hr)
- XX PM Peak-Hour Traffic (veh/hr)
- X,XXX Annual Average Daily Traffic (vehicles per day)
- Step Sign

\* Adding Ellicott Town Center Filing 2 traffic (3 industrial lots)

Figure 9  
**2021 Baseline + Filing 2 Site Traffic\*,  
 Lane Geometry, and Traffic Control**  
 Ellicott Town Center Rezone (LSC# 194060)

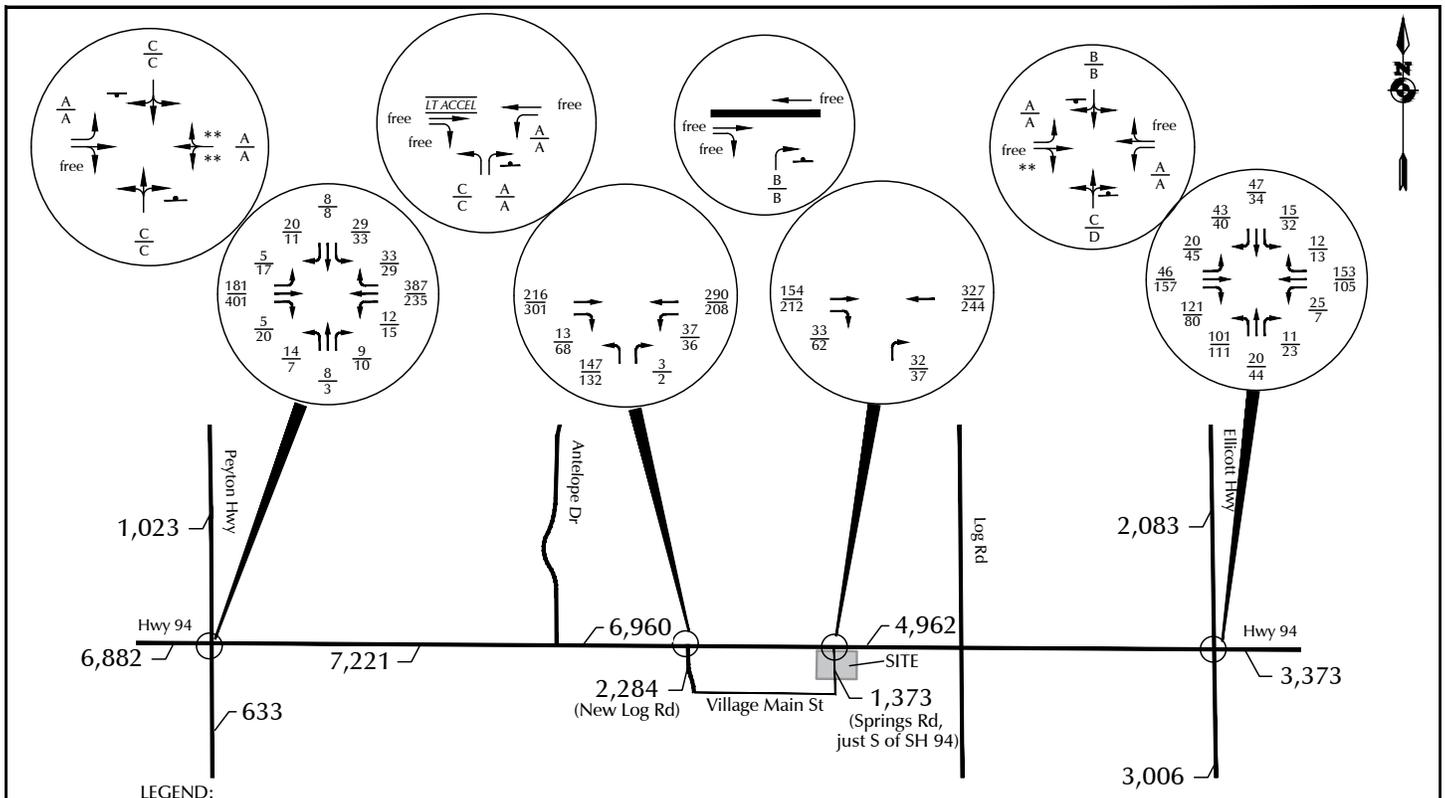


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LEGEND:

XX AM Peak-Hour Traffic (veh/hr)

XX <sup>1</sup> PM Peak-Hour Traffic (veh/hr)

X,XXX Annual Average Daily Traffic (vehicles per day)

<sup>2</sup> Stop Sign

\*Note: Baseline traffic includes residential Filings 1&4 of Ellicott Town Center.

\*\*Note: Auxiliary turn lanes required by the access code based on turning volumes (and anticipated/proposed short term traffic control) are depicted.

Figure 10

## Short-Term Baseline\* + Site-Generated (Filings 2 + 3) Traffic, Lane Geometry, and Traffic Control

Ellicott Town Center Rezone (LSC# 194060)

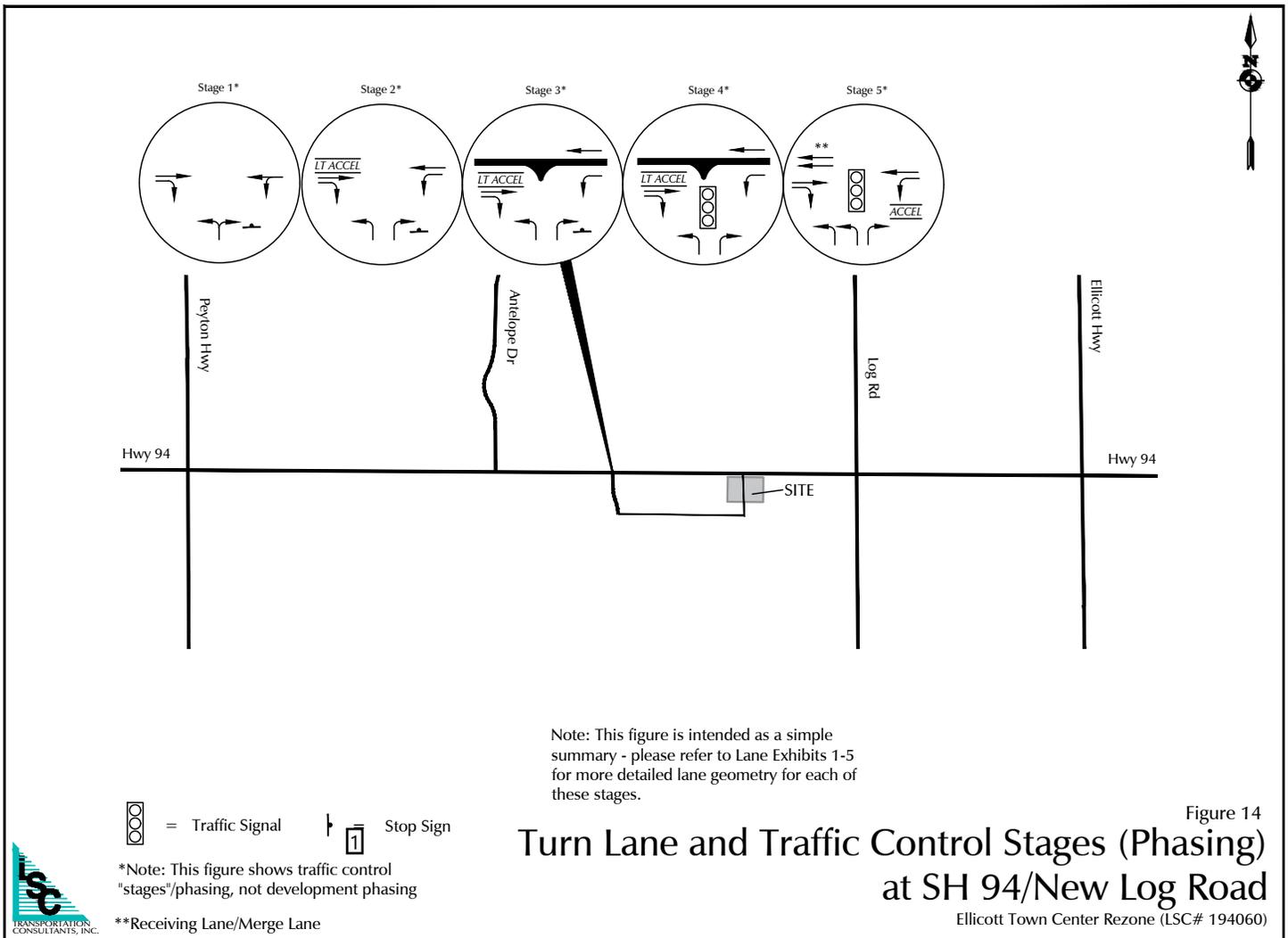


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Appendix Table: Trip Generation Estimate for the Entire Ellicott Town Center PUD Plan

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Table 1 Trip Generation Estimate Ellicott Town Center																					
Phase	Land Use Code	Land Use Description	Trip Generation Units	Trip Generation Rates <sup>(1)</sup>					Total Trips Generated					Percent Internal Trips	External Trips*				New Trips Generated		
				Average Weekday Traffic	Morning Peak Hour In	Morning Peak Hour Out	Afternoon Peak Hour In	Afternoon Peak Hour Out	Average Weekday Traffic	Morning Peak Hour In	Morning Peak Hour Out	Afternoon Peak Hour In	Afternoon Peak Hour Out		Average Weekday Traffic	Morning Peak Hour In	Morning Peak Hour Out	Afternoon Peak Hour In	Afternoon Peak Hour Out	Percent Pass-by <sup>(2)</sup>	Average New Weekday Traffic
1 (Filing 1)	210	Single-Family Detached Housing	98 DU <sup>(3)</sup>	10.41	0.19	0.57	0.64	0.38	1021	19	56	63	37	8%	939	17	51	58	34	0%	939
1 (Filing 2)	210	Single-Family Detached Housing	142 DU	10.11	0.19	0.56	0.63	0.37	1436	26	79	90	53	8%	1321	24	73	82	48	0%	1321
2	411	Public Park	13 Acres	0.75	0.01	0.01	0.06	0.05	10	0	0	1	1	50%	5	0	0	0	0	0%	5
2	210	Single-Family Detached Housing	259 DU	9.64	0.18	0.55	0.62	0.36	2496	47	142	160	94	8%	2296	43	130	147	86	0%	2296
2	220	Multifamily Housing (Low-Rise)	30 DU	6.20	0.12	0.39	0.42	0.25	186	3	12	13	7	8%	171	3	11	12	7	0%	171
2	495	Recreational Community Center	15 KSF <sup>(4)</sup>	28.82	2.91	1.50	1.81	2.04	432	44	23	27	31	50%	216	22	11	14	15	0%	216
3	210	Single-Family Detached Housing	137 DU	10.14	0.19	0.56	0.63	0.37	1389	26	77	87	51	8%	1278	23	70	80	47	0%	1278
4	210	Single-Family Detached Housing	229 DU	9.73	0.18	0.55	0.62	0.36	2228	42	126	142	83	8%	2050	38	115	130	77	0%	2050
5	850	Supermarket	60 KSF	106.78	2.29	1.53	4.71	4.53	6407	138	92	283	272	3%	6215	133	89	274	264	25%	4661
5	820	Shopping Center	107 KSF	58.83	1.19	0.73	2.56	2.78	6295	127	78	274	297	4%	6043	122	75	263	285	25%	4532
5	560	Church	25 KSF	6.95	0.20	0.13	0.24	0.29	174	5	3	6	7	1%	172	5	3	6	7	0%	172
6	710	General Office Building	80 KSF	10.68	1.09	0.18	0.18	0.97	855	87	14	15	77	2%	837	86	14	14	76	0%	837
6	522	Middle School/Junior High School	1,000 Students	2.14	0.31	0.27	0.08	0.09	2137	313	267	83	87	30%	1496	219	187	58	61	0%	1496
6	210	Single-Family Detached Housing	94 DU	10.45	0.19	0.57	0.64	0.38	982	18	54	60	35	8%	904	16	49	55	33	0%	904
7	210	Single-Family Detached Housing	59 DU	10.85	0.20	0.59	0.65	0.38	640	12	35	39	23	8%	589	11	32	35	21	0%	589
<b>Total</b>									<b>26687</b>	<b>907</b>	<b>1056</b>	<b>1341</b>	<b>1154</b>		<b>24531</b>	<b>765</b>	<b>912</b>	<b>1230</b>	<b>1060</b>		<b>21467</b>
<b>Change in Trip Generation vs. Previous Submittal (05/31/2014)</b>									<b>-143</b>	<b>36</b>	<b>42</b>	<b>-87</b>	<b>-74</b>		<b>-328</b>	<b>-37</b>	<b>-21</b>	<b>-84</b>	<b>-69</b>		<b>-60</b>
Notes: (1) Source: "Trip Generation, 10th Edition, 2017" by Institute of Transportation Engineers (ITE) (2) Source: "Trip Generation Handbook - An ITE Proposed Recommended Practice, August 2014" by ITE (3) DU = dwelling unit (4) KSF = thousand square feet * Note about use of external trips: These external trips are effective at buildout of the development. For the early phases, "Total Trips Generated" should be used as external trips for the residential development.																					
Source: LSC Transportation Consultants, Inc. <span style="float: right;">Date: 07/30/2018</span>																					

## Appendix Table: Trip Generation Estimate for the Entire Ellicott Town Center PUD Plan