LSC TRANSPORTATION CONSULTANTS, INC.
545 East Pikes Peak Avenue, Suite 210
Colorado Springs, CO 80903
(719) 633-2868
FAX (719) 633-5430
E-mail: lsc@lsctrans.com
Website: http://www.lsctrans.com

Ellicott Town Center Filing 2
Traffic Impact Study
PCD File Nos. CS192 & SF1910
(LSC #194060)
August 29, 2019

Traffic Engineer's Statement

This traffic report and supporting information were prepared under my responsible charge and they comport with the standard of care. So far as is consistent with the standard of care, said report was prepared in general conformance with the criteria established by the County for traffic reports.

COLORADO LICENSED
JEFFREY C. HODSDON
31684
9-11-19
PROFESSIONAL ENGINEER

Developer's Statement

I, the Developer, have read and will comply with all commitments made on my behalf within this report.

Rick Scott

9.8.19
Date

LSC TRANSPORTATION CONSULTANTS, INC.
545 East Pikes Peak Avenue, Suite 210
Colorado Springs, CO 80903
(719) 633-2868
FAX (719) 633-5430
E-mail: lsc@lsctrans.com
Website: http://www.lsctrans.com

August 29, 2019

Rick Scott
COO
Corman Leigh Companies
32823 Temecula Pkwy
Temecula, CA 92592RE:

Ellicott Town Center Rezone
Filing No. 2
Traffic Impact Study
El Paso County, Colorado
LSC #194060
PCD File Nos. CS192 and SF1910

Dear Mr. Scott,

LSC Transportation Consultants, Inc. has prepared this traffic impact study for the proposed 9.5-acre rezone within the Ellicott Town Center (ETC) development in the Ellicott area of El Paso County. The rezone application is for the parcels adjacent to the Highway 94/Springs Road intersection.

This report has been prepared to accompany a submittal to County Planning and Community Development and the Colorado Department of Transportation (CDOT). The site is located generally southwest of the intersection of State Highway (SH) 94 and Log Road in unincorporated El Paso County. Figure 1 presents a vicinity map, while the site plan is presented in Figure 2.

REPORT CONTENTS

- This technical memorandum addresses the proposed rezoning of the parcels adjacent to the Highway 94/Springs Road intersection. The anticipated use is a "business park."
- Previously completed traffic reports are listed for reference and to provide context.
- There have been **no** changes to the Ellicott Town Center Filing 1 or 2 **[now called Filing 3]** land plans (or future filings/phases) since the 2012 access permits (now expired). These subdivisions have been included in the baseline/background traffic projections.
- Current traffic data have been collected for State Highway 94 near the site and projected 20-year background (through traffic on SH 94) volumes have been updated.
- This report presents the trip generation estimate for the proposed rezone, the estimated directional distribution, and estimates of site-generated traffic.
- Level of service has been analyzed based on the methodology in Synchro and the 6th Edition of the *Highway Capacity Manual.*

- Auxiliary turn lane needs have been analyzed based on the projected volumes and criteria in the *Colorado State Highway Access Code*.
- Some key terms and conditions of the Filing 1 CDOT Access Permits (since expired) related to highway improvements, traffic control, and right-of-way requirements are called out.
- Findings and recommendations for the proposed rezone are presented.

Previous Ellicott Town Center Traffic Reports

The following lists previously completed Ellicott Town Center traffic reports. These have been provided for reference and to provide context. The most recent versions of each report are shown in bold.

- Two submittals for the Ellicott Town Center Filing No. 1 residential development. This initial report was dated July 30, 2018. The updated/revised version is dated **January 11, 2019.** A (replacement) CDOT Access Permit Application has also been submitted for Filing No. 1.

- **April 13, 2012** *Ellicott Town Center Filing No. 1 Access Permits Technical Memorandum,* which was provided to CDOT to assist in preparing the access permit terms and conditions for the initial/Filing 1 Access Permits. [**Note:** a few of the individual April 2012 report tables were subsequently updated later in 2012 as part of responses to comments. The 2012 memo was an update to the original April 4, 2006 *Filing No. 1 Access Permits Technical Memorandum*. The original purpose of the memo was to provide CDOT with information and analysis of the phased and overall development traffic impacts necessary to allow issuance of phased access permits with each individual subdivision filing (or phase).]

- Prior to the April 4, 2006 *Filing No. 1 Access Permits Technical Memorandum* report for Filing No. 1, LSC prepared the December 15, 2005 *Ellicott Town Center First Preliminary Plan Traffic Impact and Access Analysis Report* and the **February 17, 2006** *Ellicott Town Center Preliminary Plan Updated Traffic Impact and Access Analysis Report* for the approved 240-lot Phase 1 Preliminary Plan.

Phase 1 Preliminary Plan

Before the Phase 1 Preliminary Plan, LSC had prepared the following reports for the **overall ETC PUD**: initial August 30, 2005 *Ellicott Town Center Traffic Impact and Access Analysis Report*; the *Ellicott Town Center Updated Sketch Plan-Level Traffic Impact and Access Analysis Reports* dated October 31, November 23, December 22, 2005, and **April 4, 2006**.

PROPOSED REZONE LAND USE

The preliminary site plan for the proposed rezone is attached for reference. This rezone is being called Filing 2 and the planned second subdivision filing of residential development (to the south and west of this rezone site), formerly called Filing 2 is being changed to Filing 3.

The 9.5-acre site is planned to be developed as a "business park." This would consist of primarily light industrial and manufacturing land uses, but may also contain some convenience commercial, restaurant, and/or retail/shopping-center-type land uses. LSC has assumed the latter for Lot 9. The first lot to develop is likely to be Lot 1. A small manufacturing facility is planned for this lot. This facility would be for purposes of manufacturing the homes for Filings 1 and 3 **[previously called Filing 2]** and the remainder of Ellicott Town Center.

Rather than applying for one access permit for all of Filing 2 at one time, the applicant plans to submit "phased" access permit applications for each commercial lot as each moves forward for development with an actual end-user.

RESIDENTIAL FILINGS NO. 1 AND 3 (NOT A PART OF THIS REZONE APPLICATION)

The initial residential development within Ellicott Town Center is planned to occur within the Phase 1 Preliminary Plan area located to the area west and south of this rezone site. Phase 1 includes residential Filings 1 and 2 **[now called Filing 3]**. The proposed residential Filing No. 1 site plan/Plat is also attached for reference. Filing No. 1 and Filing No. 3 are planned to contain 98 and 142 lots for single-family homes, respectively. Two access points to Highway 94 are proposed for Filing No. 1. The New Log Road/SH 94 intersection is proposed to be full-movement and is located about 3,300 feet east of the Highway 94/Antelope Drive intersection. The east access is proposed to be a right-in/right-out access and is located about 2,300 feet west of Log Road. The spacing between the two access points would be about 2,900 feet. Two (replacement) CDOT Access Permit Applications have been submitted for Filing No. 1. These applications are currently under review by CDOT.

ACCESS FOR THE PROPOSED REZONE

The primary access to the proposed business park would be to Highway 94 at Springs Road – which is also the proposed residential Filing No. 1 east access. This Springs Road access to Highway 94 is proposed to be a right-in/right-out access connection to Highway 94 and is located about 2,300 feet west of Log Road. Secondary access for the business park would be via the planned short-term internal Ellicott Town Center street system via the New Log Road/Highway 94 intersection (Note: This will also ultimately become the main ingress/egress point for the overall Ellicott Town Center PUD development). Village Main Street, which is an east-west-oriented Urban Local street, will likely be the primary connecting street to the west Highway 94 access. The west, full-movement access to Highway 94 will be located about 3,300 feet east of the existing Highway 94/Antelope Drive intersection.

FUTURE DEVELOPMENT PHASES/OVERALL ELLICOTT TOWN CENTER PUD PLAN (FOR REFERENCE ONLY)

At buildout, the overall Ellicott Town Center PUD development is planned to contain 1,048 residential dwelling units, a school, a county park with a recreational community center, and about 239,000 square feet of retail and industrial development. The timing of the development is dependent on many factors including the area market conditions, development of nearby sites, etc. However, the anticipated phasing schedule shows seven phases that are supposed to occur between the years 2019 and 2026. An overall phasing map of the project is shown in the appendix figure for reference. Land use and trip generation for each phase has been attached for reference.

This report has been prepared for the rezone/business park development (Filing 2), but also includes the traffic to be generated by residential Filings 1 and 3. Phasing of future improvements required for future Ellicott Town Center development phases will be addressed in future traffic reports for development beyond this study.

EXISTING ROADWAYS AND TRAFFIC CONDITIONS

Study Area Roadways

State Highway 94 is a two-lane, paved rural highway with a posted speed limit of 65 miles per hour (mph) adjacent to the site. The highway extends east from US Highway 24 near Peterson Air Force Base about 85 miles to Highway 287 in Cheyenne County. CDOT classifies Highway 94 as an NR-A highway. CDOT has identified the governing document with respect to access management for Highway 94 in the vicinity of the site as the *State Highway 94 Access Management Plan* (2012). The El Paso County 2040 *Major Transportation Corridors Plan* (MTCP) identifies Highway 94 as a two-lane Principal Arterial adjacent to the site. The MTCP 2060 *Corridor Preservation Plan* identifies Highway 94 as a future four-lane Principal Arterial. However, future right-of-way needs will be identified by CDOT.

Peyton Highway is classified as a two-lane Minor Arterial on the 2040 El Paso County MTCP. Adjacent to the site, the posted speed limit is 55 mph. No auxiliary lanes currently exist at the two-way Stop-sign-controlled (TWSC) intersection of Peyton Highway/State Highway 94.

Log Road is classified as a two-lane Collector on the 2040 El Paso County MTCP. No auxiliary lanes currently exist at the TWSC intersection of Log Road/State Highway 94.

Ellicott Highway is classified as a two-lane Minor Arterial on the 2040 El Paso County MTCP. Posted speed limits adjacent to the site are 55 mph and 45 mph north and south of State Highway 94, respectively. Auxiliary left-turn lanes currently exist on the eastbound and westbound approaches at the TWSC intersection of Ellicott Highway/State Highway 94.

Existing Traffic Volumes

Figure 3 shows the current (December 2017 – January 2019) traffic volumes based on data collected by LSC and CDOT data.

TRIP GENERATION

The trip generation estimate for the proposed Ellicott Town Center rezone has been prepared based on nationally published trip generation rates from *Trip Generation, 10th Edition, 2017* by the Institute of Transportation Engineers (ITE). The updated estimate is shown in Table 1. The standard ITE rates for "Land Use 770 – Business Park" have been adjusted by LSC to allow for some convenience, commercial, restaurant, and/or retail/shopping-center-type lane uses.

LSC anticipates that some combination of these uses would occupy Lot 9. The total trip generation is shown in Table 1 below. The convenience commercial/restaurant portion of the above total trip generation was estimated at 52 in/52 out in the morning peak and 49 in/49 out during the evening peak. Of these trips, about 50 percent have been assumed to be pass-by trips. The estimated daily trip generation for these commercial uses is estimated to be 1,186 trips of the total 1,459 daily trips.

Table 1: Rezone (Filing No. 2) Trip Generation Estimate

ITE		Quantity	Units[1]	Trip Generation Rates[2]					Total Trips Generated				
				Average	A.M.		P.M.		Average	A.M.		P.M.	
Code	Description			Weekday	In	Out	In	Out	Weekday	In	Out	In	Out
770	Business Park	70.000	KSF	20.84	1.22	0.80	0.77	1.13	1459	86	56	54	79

[1] KSF = 1,000 square feet

[2] Source: "Trip Generation, 10th Edition, 2017" by the Institute of Transportation Engineers (ITE). Standard rates have been adjusted by LSC to account for potential conveneince retail/restaurant on one or two of the lots southeast of Springs East Road and SH 94. The commercial portion of the above total trip generation was estimated at 52 IN/52 OUT in the AM peak and 49 IN/49 OUT during the PM Peak. Of these trips, about 50% have been assumed to be pass-by trips. The estimated daily trip generation for these commercial uses is estimated to be 1,186 trips of the total 1,459 daily trips.

DIRECTIONAL DISTRIBUTION AND SITE-GENERATED TRAFFIC

The estimated directional distribution for the land uses within the proposed rezone is shown in Figure 4. This distribution is based on the original distribution estimate from **the April 4, 2006 study for the overall PUD.** Adjustments have been made to reflect anticipated conditions and the current planned MTCP roadways in the study area.

Figure 6 shows the projected site-generated traffic volumes for the rezone at the study area intersections.

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 3 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 7. 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 6).

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% of roadway capacity. Site generated traffic from each of Filing 1, Filing 2, and Filing 3 individually would not exceed the 5% 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 basically 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 (rezone)
- Filings Nos. 1, 2 and 3 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 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% directional distribution factor.

The Filing 1 only, Filing 1 plus Filing 2 (rezone), and Filings 1, 2 and 3 combined cumulative site-generated volumes have been compared to the calculated Highway 94 roadway capacity. The table indicates if each of the cumulative scenarios exceeds the 5% of roadway capacity "threshold." As shown, Filing 1 only and Filing 1 plus Filing 2 (rezone) would not exceed five

percent threshold. Filings 1, 2 and 3 combined would exceed the five percent threshold.

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 9. These represent the sum of the 20-year future background traffic volumes from Figure 8 plus the projected site-generated traffic volumes for the proposed rezone (from Figure 6).

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 3.

Table 3: Intersection Levels of Service Delay Ranges

Level of Service	Signalized Intersections	Unsignalized Intersections
	Average Control Delay (seconds per vehicle)	Average Control Delay (seconds per vehicle)[1]
A	≤ 10.0	≤ 10.0
B	10.1 – 20.0	10.1 – 15.0
C	20.1 – 35.0	15.1 – 25.0
D	35.1 – 55.0	25.1 – 35.0
E	55.1 – 80.0	35.1 – 50.0
F	≥ 80.1	≥ 50.1

[1] For unsignalized intersections, if V/C is > 1.00, then LOS is LOS F regardless of the projected average control delay per vehicle

Synchro software was used to determine the projected LOS at the study area intersections – including the west and east site access intersections SH 94, SH 94/Peyton Highway, and SH 94/ Ellicott Highway for the short-term background traffic scenario after the completion of Filing 1, Filing 3, and the short-term background plus site traffic scenario including the traffic estimates for the proposed business park rezone. The 20-year, long-term scenarios have also been included, which assume buildout of the balance of Ellicott Town Center PUD included in the background traffic. Summaries of all short-term and 2040 traffic scenario levels of service during

the weekday noon and evening peak hours are shown in Table 4 through Table 7. Detailed level of service reports are attached.

State Highway 94/New Log Road

Table 4 presents LOS analysis results for several lane geometry configurations at the intersection of State Highway 94/New Log Road. All individual turning movements at the intersection of State Highway 94/New Log Road will operate at LOS C or better during the short term if the intersection were to have two-way stop sign control (TWSC) and one separate northbound left-turn and right-turn lane.

The northbound left-turning movement would operate at LOS F during both the 2040 morning and evening peak hour if it were to remain TWSC. If the intersection were to be signalized, the northbound left-turning movement would still operate at LOS F with a single lane, with or without site buildout. However, the northbound left-turning movement would improve to LOS D or better upon buildout if a second northbound left-turn lane were to be added at the signalized, channelized-T intersection. Overall, the intersection would operate at LOS C or better through the 20-year horizon if it were to be signalized in the long term, with or without buildout of this rezone area.

Table 4: LOS Analysis Results (State Highway 94/New Log Road)

Analysis Scenario	SH 94 + West Access					
	Traffic Control	Overall	Laneage Scenario	Key Individual Movements LOS		
				NBL	NBR	WBL
			Single NBL[1]			
			Double NBL[2]			
A.M. Peak Hour						
Short-Term Baseline	Stop Sign	-	-	C	A	A
Short-Term Baseline + Site						
2040 Background	Stop Sign[1]	-		F	B	A
2040 Background + Site						
2040 Background	Signal[1]	F		F	B	A
2040 Background + Site						
2040 Background	Signal[2]	B		D	A	A
2040 Background + Site						
P.M. Peak Hour						
Short-Term Baseline	Stop Sign	-	-	C	A	A
Short-Term Baseline + Site						
2040 Background	Stop Sign[1]	-		F	C	C
2040 Background + Site						
2040 Background	Signal[1]	E		F	B	C
2040 Background + Site		F				
2040 Background	Signal[2]	B		D	A	C
2040 Background + Site		C				

WBL = westbound left, NBL = northbound left, NBR = northbound right

Stop Sign[1] = NBL has one lane; NB approach is stop sign-controlled; EB + WB are free

Signal[1] = NBL has one lane; intersection is signalized

Signal[2] = NBL has two lanes; intersection is signalized

State Highway 94/Springs Road

The intersection of State Highway 94/Springs Road is proposed to operate as a right-in/right-out (RI/RO) in both the short-term and through 2040. All individual turning movements are projected to operate at LOS C or better through the 20-year horizon, as summarized in Table 5.

Table 5: LOS Analysis Results (State Highway 94/Springs Road)

Analysis Scenario	SH 94 + Springs East Rd		
	Traffic Control	Overall	NBR
A.M. Peak Hour			
Short-Term Baseline	Stop Sign RI/RO	-	A
Short-Term Baseline + Site			B
2040 Background			B
2040 Background + Site			
P.M. Peak Hour			
Short-Term Baseline	Stop Sign RI/RO	-	A
Short-Term Baseline + Site			B
2040 Background			B
2040 Background + Site			C

NBR = northbound right
RI/RO = right-in/right-out

State Highway 94/Ellicott Hwy

During the short term, all individual turning movements at the intersection of State Highway 94/ Ellicott Highway will operate at LOS D or better if it were to remain a TWSC intersection. Auxiliary left- and right-turn lanes would be required for all approaches based on projected future volumes at this intersection.

With or without site buildout, the northbound left-turning movement would operate at LOS F during both 2040 peak hours, while the southbound left-turning movement would operate at LOS E during the evening peak hour if the intersection were to remain TWSC. The northbound approach would operate at LOS E during the evening peak hour if the intersection were to operate as all-way stop-sign controlled (AWSC). However, all individual turning movements would improve to LOS B or better if the intersection were to be signalized in the long term, as summarized in Table 6.

Table 6: LOS Analysis Results (State Highway 94/Ellicott Highway)

Analysis Scenario	SH 94 + N Ellicott Hwy						
	Traffic Control	Overall	Laneage Scenario	Key Individual Movements LOS			
				NB	EBL	WBL	SB
			Short-Term				
			2040				
A.M. Peak Hour							
Short-Term Baseline	Stop Sign	-	-	C	A	A	B
Short-Term Baseline + Site							
2040 Background	TWSC	-		F	A	A	C
2040 Background + Site							
2040 Background	AWSC	-		C	B	B	B
2040 Background + Site							
2040 Background	Roundabout	A		A	A	A	A
2040 Background + Site							
2040 Background	Signal	B		B	B	B	A
2040 Background + Site							
P.M. Peak Hour							
Short-Term Baseline	Stop Sign	-	-	D	A	A	C
Short-Term Baseline + Site							B
2040 Background	TWSC	-		F	A	A	E
2040 Background + Site							
2040 Background	AWSC	-		E	B	B	B
2040 Background + Site							
2040 Background	Roundabout	A		B	A	B	A
2040 Background + Site							
2040 Background	Signal	B		B	B	B	A
2040 Background + Site							
NB = northbound, EBL = eastbound left, WBL = westbound left, SB = southbound							

State Highway 94/Peyton Highway

During the short term, all individual turning movements at the intersection of State Highway 94/ Peyton Highway will operate at LOS C or better if it were to remain a TWSC intersection. Auxiliary left- and right-turn lanes would be required for both the eastbound and westbound approaches on State Highway 94 based on projected future volumes at this intersection. An exclusive left-turn lane and a shared right/through turn lane are required on the northbound and southbound approaches based on projected short- and long-term volumes at this intersection.

With or without site buildout, the northbound and southbound left turning movement would operate at LOS F during both 2040 peak hours if the intersection were to remain TWSC. However,

all individual turning movements would improve to LOS C or better if the intersection were to be signalized in the long term, as summarized in Table 7.

Table 7: LOS Analysis Results (State Highway 94/Peyton Highway)

Analysis Scenario	SH 94 + Peyton Hwy					
	Traffic Control	Overall	NBL	EBL	WBL*	SBL
A.M. Peak Hour						
Short-Term Baseline	Stop Sign	-	C	A	A	C
Short-Term Baseline + Site						
2040 Background	Stop Sign	-	F	B	A	F
2040 Background + Site						
2040 Background	Signal	B	B	A	A	C
2040 Background + Site						
P.M. Peak Hour						
Short-Term Baseline	Stop Sign	-	C	A	A	C
Short-Term Baseline + Site						
2040 Background	Stop Sign	-	F	A	B	F
2040 Background + Site						
2040 Background	Signal	B	B	B	A	C
2040 Background + Site						

NBL = northbound left, EBL = eastbound left, WBL = westbound left, SBL = southbound left

*Note: This report presents discussion regarding deferral of the WB LT deceleration lane until Phase 3. This level of service analysis assumes a separated left turn movement rather than a shared through/left lane group – because CDOT will be constructing an eastbound left turn lane and redirect tapers on the east side of the intersection.

PHASING OF NEW LOG ROAD/SH 94 INTERSECTION TYPE/TRAFFIC CONTROL

There is the potential to phase the intersection traffic control/intersection type at the main/west Ellicott Town Center Access. Potentially, the intersection could be phased from 1) a conventional stop sign-controlled intersection to 2) an unsignalized channelized-T intersection, 3) a signalized channelized-T intersection, to ultimately 4) a conventional signalized intersection that would allow for northbound dual left-turn lanes. These phases are depicted in Figure 11.

Although this report presents the framework for potential future phasing of the intersection type/traffic control (with the projected 20-year buildout LOS analysis) at the New Log Road/SH 94 intersection, this report has been prepared for the proposed rezone development. The future phasing of the intersection type/traffic control would be to provide sufficient capacity for overall

future Ellicott Town Center PUD development phases. This phasing can be addressed in future traffic reports for development beyond this rezone (Filing 2) and residential Filings. 1 and 3.

TRAFFIC SIGNAL WARRANTS

A traffic signal would not likely be warranted at the SH 94/west site access intersection based on the projected short-term background-plus-site-generated traffic volumes. However, warrants will likely be met in the future at this intersection based on projected long-term total volumes. The 2012 permit included conditions and notations regarding the potential future traffic signal (under condition No. 3C). This was the initial access permit for the Ellicott Town Center development. It was specifically for Filing 1, but included terms and conditions related to future development within the overall PUD development. These will likely be included in the replacement permit, submitted for Filing 1 and would likely be incorporated for permit applications for development within this rezone area and residential Filing No. 3. Permit terms and conditions could potentially include updates/revisions to the language. Copies of the 2012 permits are attached for reference.

Signal warrants will be evaluated at each future Ellicott Town Center phase with updates to future volume projections. Signal warrant analysis will take into account the most recent CDOT comment (on the residential Filing 1 submittal) indicating, "***The New Log Road intersection with Hwy 94 will require a westbound-left-turn acceleration lane in Filing 2*** [now called Filing 3] ***(2020) which can later be utilized as the westbound merge lane when signalized."***

AUXILIARY TURN LANES

State Highway 94 is classified as NR-A. Requirements for auxiliary turn lanes in the Access Code are generally based on turning volumes, roadway classification and posted speed limits.

The 2012 Filing 1 permit included conditions and notations regarding potential future auxiliary lanes (under condition No. 46). Also, current CDOT comments (for the Filing No. 1 permit submittal) indicate "***The New Log Road intersection with Hwy 94 will require a westbound-left-turn acceleration lane in Filing 2*** [now called Filing 3] ***(2020) which can later be utilized as the westbound merge lane when signalized."*** These will likely be included in the replacement permit and could potentially include updates/revisions to the language. **Note: Following CDOT review of <u>this study</u>, these requirements could potentially be modified and/or additional requirements may be added.**

Table 8 presents an evaluation of the turn lanes required according to the Colorado State Highway Access Code. The Improvements Table (Table 12) includes the auxiliary turn lane improvements.

Projected **short-term** baseline-plus-site-traffic volumes include traffic projected for this site and traffic projected for residential Filings 1 and 3. These volumes have been used to determine the auxiliary turn lanes that would be required at SH 94/New Log Road and SH 94/Springs Road based

on the *Colorado State Highway Access Code* criteria. Short-term auxiliary turn lane analysis is presented in Table 8. The table **also** presents evaluation of the turn lane requirements for Filing 1 plus Filing 2 (site) traffic volumes (not including Filing 3).

Table 8 also includes evaluation of two off-site intersections on State Highway 94, Peyton Highway/SH 94, and Ellicott Highway/SH 94. Table 8 considers the relative impact of the site traffic at offsite intersections as presented in Table 2.

Projected long term background volumes also include trips to be generated by the remainder of the entire PUD development at buildout. Background plus rezone site-generated traffic volumes have been used to identify anticipated long-term auxiliary turn lane needs. Please refer to the conceptual future intersection lane geometry depicted in Figure 8 and Figure 9.

SH 94/New Log Road

Short Term

Left-Turn Deceleration Lane

Per criteria in Section 3.11(7) of the *Colorado State Highway Access Code*, a left-turn deceleration lane with taper is required for any access with a projected peak-hour ingress turning volume greater than 10 vehicles per hour (vph). Projected short-term westbound left-turn peak-hour volume at this access would exceed that threshold. LSC recommends the westbound left-turn deceleration lane consist of 500 feet of deceleration length, 50 feet of storage (short term)/ potentially 400 feet of storage (long term), and 300 feet of transition taper length (25:1 ratio).

Right-Turn Deceleration Lane

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 8, 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).

Left-Turn Acceleration Lane

Per CDOT *State Highway Access Code* criteria, *"A left-turn acceleration lane may be required if it would be a benefit to the safety and operation of the roadway or as determined by subsection 3.5. If necessary, for specifically identified and documented safety and operation reasons, a left turn acceleration lane may be required when unique location factors such as; highway speed and traffic density, access volume, the volume of commercial trucks, the influence of nearby access, 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 current CDOT comments (for the Filing No. 1 permit submittal) indicate *"The New Log Road intersection with Hwy 94 will require a westbound-left-turn acceleration lane in Filing 2* [now called Filing 3] *(2020) which can later be utilized as the westbound merge lane when signalized*." These will likely be included in the replacement permit and could potentially include updates/ revisions to the language. CDOT may require this lane for the Filing 1 plus Filing 2 (this proposed rezone)- although the applicant would prefer this requirement not be imposed with Filing 1 plus Filing 2 (Filing 2, or at least a portion thereof, is likely to be developed prior to the Filing 3 residential development). The northbound left-turn intersection level of service is projected to be LOS C (acceptable) without the addition of the left-turn acceleration lane based on the short-term volumes. CDOT has indicated that the construction of this left-turn acceleration lane will be required with the construction of the westbound left-turn deceleration lane.

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 8, the acceleration lane will not be required in the short term. The projected long-term northbound right-turn peak-hour volume is 311 vph, which exceeds the CDOT 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).

SH 94/Springs Road

At the SH 94/Springs Road intersection, an auxiliary right-turn deceleration lane on Highway 94 would be required concurrently with the Filing 2 business park rezone development. Per CDOT comments on the Filing No. 1 access permit submittal, a median to prohibit the westbound left turn at Springs Road is required with construction of the eastbound right-turn deceleration lane.

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 8, LSC recommends that an 800-foot eastbound right-turn deceleration lane be constructed, consisting of 500 feet of deceleration length and 300 feet of transition taper length (25:1 ratio).

The projected long-term northbound right-turn peak-hour volume is 132 vph, which exceeds the CDOT threshold.

Please provide what the State Highway Access Code calls for as done in the previous submittal.

SH 94/Peyton Highway (Off-Site Intersection)

Short-Term

Regarding the eastbound and westbound left-turn movements at this intersection: the threshold volume of 10 vph (*State Highway Access Code* criteria), above which exclusive left-turn lanes are prescribed by the Access Code, is **currently** exceeded for the eastbound left turn and is **nearly met** for the westbound left turn.

Based on projected short-term baseline traffic volumes (including Filings 1 and 3) plus Filing 2 site traffic, eastbound and westbound auxiliary left-turn volumes would both exceed the 10 vph threshold. A westbound right-turn deceleration lane is also shown to be prescribed by the access code. Please refer to Table 8 for additional details. The prescribed length for both the eastbound and westbound left-turn deceleration lanes is 825 feet (consisting of 500 feet of deceleration length, 25 feet of storage length, and 300 feet of transition taper length (25:1 ratio)). Redirect tapers (65:1 ratio) would add additional length. The westbound right turn lane prescribed length is 500 feet of deceleration length plus a 300-foot taper.

Long-Term

Please refer to Figure 8 and Figure 9 for potential future additional auxiliary turn lanes at this intersection. Conceptual-level future laneage is shown with lane geometry arrows.

SH 94/Ellicott Highway (Off-Site Intersection)

Short-Term

Left-turn lanes currently exist on the eastbound and westbound approaches to this intersection, consisting of:

- Eastbound left-turn lane (part of two-way left-turn lane)
  - 130 feet (deceleration length plus storage)
  - 90 feet (taper)
- Westbound left-turn lane
  - 285 feet (deceleration length plus storage)
  - 100 feet (taper)

The eastbound left-turn lane meets *State Highway Access Code* criteria, as it is part of a two-way left-turn lane, which extends 950 feet west of the intersection of State Highway 94/Ellicott Highway. The existing westbound left-turn lane was striped by CDOT as a relatively short dedicated left turn lane at the intersection and a center, two-way left-turn lane (TWLTL) just west of the dedicated turn lane – presumably to accommodate turning movements for the existing driveways and access points located just west of the intersection.

The turning volume threshold for auxiliary **right-turn** lanes is **currently exceeded** for the eastbound approach. *State Highway Access Code* criteria prescribes a lane length for right-turn deceleration lanes of 273 feet plus a 162-foot-long transition taper. This lane may not have been added with previous CDOT projects, as there appears to be no available right-of-way and existing property improvements exist relatively close to the highway. CDOT has indicated a requirement for an escrow contribution for a future turn lane. This report presents justification for deferment of this escrow until Filing 3.

Long Term

Please refer to Figure 8 and Figure 9 for potential future additional auxiliary turn lanes at this intersection. Conceptual-level future laneage is shown with lane geometry arrows.

RIGHT-OF-WAY DEDICATION

The previous access permits (for Filing No. 1) indicated the requirement for *"A dedication of 40' of right-of-way of SH 94 along the Permittee property frontage on the south side east and west of* New *Log Road as necessary to accommodate widening needed for dual left turning movements.*

CDOT ACCESS PERMITTING

CDOT previously issued access permits for access to Highway 94 at the two access point locations (New Log Road and Springs Road) for the first 98 single-family residential dwelling units (Filing No. 1). The previous permit numbers are 212012 and 212011. These have since expired. Copies are attached for reference. New/replacement access permits for Filing No. 1 are under review at CDOT.

Development within this proposed rezone will require the submittal of subsequent access permit applications. Rather than applying for one access permit for all of Filing 2 at one time, the applicant plans to submit "phased" access permit applications for each commercial lot as each lot moves forward with development by an end-user.

FILING NO. 1 STREET CLASSIFICATIONS

Roadway classifications within Ellicott Town Center were established with the overall PUD and are reflected on the approved Preliminary Plan for Filing 1 and the 2nd residential subdivision (now called Filing 3). The ECM classification nomenclature has changed since approval of the Preliminary Plan. Please refer to Figure 11, which presents the recommended street classifications.

Figure 10

COUNTY ROAD IMPACT FEE PROGRAM

This Filing 2 business park rezone development will be required to participate in the Countywide Road Impact Fee program. The specific PID option (or opt-out option) as well as the specific calculated fee amount will be provided with the plat. The fee per residential dwelling unit will be payable at the time of the building permit.

Regarding the potential for improvements being required by the project to be creditable/reimbursable under the current MTCP/Fee Program, the section of SH 94 in the vicinity of the site is not currently listed as "eligible." The intersections of Peyton Highway/SH 94 and Ellicott Highway/SH 94 are not currently listed in Table 23 of the El Paso County "Road Impact Fee Study Update" (December 2018) as "eligible" CDOT signals. However, LSC on behalf of the applicant has requested at the July 25, 2019 meeting that the Fee Committee consider adding SH 94 between Enoch Road and Ellicott Highway, and the intersections of Highway/SH 94 and Ellicott Highway/SH 94 as eligible improvements.

DEVIATIONS

Currently no deviations are being submitted as part of this Filing No. 2 rezone submittal. Deviations may need to be submitted with the Preliminary Plan when more is known about the access locations for the project.

CDOT ESCROW REQUIREMENTS/PROPOSED TIMING

Escrow Amounts

Table 9, Table 10, and Table 11 present the calculated escrow amounts for future off-site improvements required by CDOT in the June 20, 2019 comment letter. Calculated escrow percentages vary from the CDOT identified percentages. Final percentages and dollar amounts can likely be determined with the Access Permit.

Proposed Escrow Timing

LSC, on behalf of the applicant, is proposing a phasing plan for the improvements identified by CDOT in the comment letter dated June 20, 2019. This is based on the concept that although the Filing 1, Filing 2, and Filing 3 developments are part of the larger overall Ellicott Town Center development, these initial developments, to some extent, will be not unlike individual isolated developments of similar size and scale with respect to the study area and associated requirements for off-site improvements.

Based on this evaluation, LSC, on behalf of the Permittee, proposes that the off-site improvements at SH 94 Peyton Highway/SH 94 and Ellicott Highway/SH 94 and escrow amounts called out in the comment letter be deferred until the Access Permit for Filing 3. With the permit for Filing 3, the turn lane improvements would be completed at Highway 94/Peyton Highway and the fair-share escrow amounts for all three filings would be due and the percentage would be

the same as identified in the CDOT comment letter unless actual data collected reflects trip generation/trip distribution different from LSC estimates and/or other projects in the area impacting these two intersections has been identified by CDOT as also a participant in improvements at these intersections. In this case, it may be reasonable to adjust the fair-share percentages accordingly at the time of the Filing 3 access permit.

The site access improvements at the two site access points would be phased and constructed per the comment letter. The above proposed deferment of phasing of the off-site improvements and escrow contributions for improvements at SH 94 Peyton Highway/SH 94 and Ellicott Highway/SH 94 is logical as it will allow the potential for other projects to share in the costs. The proposed deferment would also additional time to allow for potential inclusion of these intersections as "eligible improvements" under the County Road Impact Fee program.

SUMMARY OF IMPROVEMENTS

Table 12 provides a summary of the improvements by development filing.

* * * * *

Please contact me if you have any questions regarding this report.

Respectfully Submitted,

LSC TRANSPORTATION CONSULTANTS, INC.

By: Jeffrey C. Hodsdon, P.E.
Principal

JCH/JAB:bjwb:jas

Enclosures: Table 2
Tables 8-12
Figure 1 – Figure 11
Level of Service Reports
Traffic Count Reports
Appendix Figure – Overall PUD Phasing Exhibit
Appendix Table – Overall PUD Trip Generation Estimate
CDOT Access Permit #212012 and #212011

Tables and Figures

TRANSPORTATION
CONSULTANTS, INC.

The values shown in the site generated column only appear to be filings 1 and 3 not filings 1,2, and 3

The values shown in site generated column appear to only be from filing 2 not filing 1 and 2. Please revise accordingly.

Table 2: Projected Site-Generated Traffic Against the Five Percent of Highway 94 Roadway Capacity

Filing No. 1 (Residential - 98 lots) Site-generated Traffic

Peak Period	SH 94/Peyton Highway						E of Peyton Hwy	
	Intersection Turning Movements						Totals	
	SBL	WBR	WBT	WBL	NBR	EBT	EB	WB
AM Peak	1	4	43	2	1	14	16	49
PM Peak	4	3	28	1	2	48	54	32

Note: Vehicles per hour during the AM and PM peak hours

CDOT 5% of Capacity Calculations & Threshold Evaluation w/ Filing No. 1 ONLY

Two-Way Capacity	5% of Capacity	Site-Generated Traffic	Exceeds 5% of capacity?	One-Way Capacity	5% of One-Way Capacity	Directional Site-Generated Traffic	Direction (Peak Period)	Exceeds 5% of capacity?
3200	160							
	160	65	NO	1824	91	49	WB (in AM)	NO
	160	86	NO	1824	91	54	EB (in PM)	NO

Filing No. 2 (Proposed Rezone) Site-generated Traffic

Peak Period	SH 94/Peyton Highway						E of Peyton Hwy	
	Intersection Turning Movements						Totals	
	SBL	WBR	WBT	WBL	NBR	EBT	EB	WB
AM Peak	9	6	8	2	3	26	38	16
PM Peak	5	8	24	3	1	8	14	35

Note: Vehicles per hour during the AM and PM peak hours

CDOT 5% of Capacity Calculations & Threshold Evaluation w/ Filing Nos. 1 and 2 (Cumulative)

Two-Way Capacity	5% of Capacity	Site-Generated Traffic	Exceeds 5% of capacity?	One-Way Capacity	5% of One-Way Capacity	Directional Site-Generated Traffic	Direction (Peak Period)	Exceeds 5% of capacity?
3200	160							
	160	54	NO	1824	91	16	WB (in AM)	NO
	160	49	NO	1824	91	14	EB (in PM)	NO

Filing No. 3 (Residential - 142 Lots) Site-Generated Traffic

Peak Period	SH 94/Peyton Highway						E of Peyton Hwy	
	Intersection Turning Movements						Totals	
	SBL	WBR	WBT	WBL	NBR	EBT	EB	WB
AM Peak	2	6	60	2	1	20	23	68
PM Peak	6	4	40	2	3	68	77	45

Note: Vehicles per hour during the AM and PM peak hours

CDOT 5% of Capacity Calculations & Threshold Evaluation (w/ Filing Nos. 1, 2, and 3 (Cumulative)

Two-Way Capacity	5% of Capacity	Site-Generated Traffic	Exceeds 5% of capacity?	One-Way Capacity	5% of One-Way Capacity	Directional Site-Generated Traffic	Direction (Peak Period)	Exceeds 5% of capacity?
3200	160							
	160	155	YES	1824	91	117	WB (in AM)	YES
	160	208	YES	1824	91	99	EB (in PM)	At the 5%

Filing No. 1 (Residential - 98 lots) Site-generated Traffic

Peak Period	SH 94/Ellicott Highway						W of Ellicott Hwy	
	Intersection Turning Movements						Totals	
	SBL	WBR	WBT	WBL	NBR	EBT	EB	WB
AM Peak	0	1	3	1	1	0	6	2
PM Peak	1	4	2	1	1	1	4	6

Note: Vehicles per hour during the AM and PM peak hours

CDOT 5% of Capacity Calculations & Threshold Evaluation w/ Filing No. 1 ONLY

Two-Way Capacity	5% of Capacity	Site-Generated Traffic	Exceeds 5% of capacity?	One-Way Capacity	5% of One-Way Capacity	Directional Site-Generated Traffic	Direction (Peak Period)	Exceeds 5% of capacity?
3200	160							
	160	8	NO	1824	91	2	WB (in AM)	NO
	160	10	NO	1824	91	4	EB (in PM)	NO

Filing No. 2 (Proposed Rezone) Site-generated Traffic

Peak Period	SH 94/Ellicott Highway						W of Ellicott Hwy	
	Intersection Turning Movements						Totals	
	SBL	WBR	WBT	WBL	NBR	EBT	EB	WB
AM Peak	3	10	7	1	3	4	11	17
PM Peak	2	7	10	3	4	3	17	12

Note: Vehicles per hour during the AM and PM peak hours

CDOT 5% of Capacity Calculations & Threshold Evaluation w/ Filing Nos. 1 and 2 (Cumulative)

Two-Way Capacity	5% of Capacity	Site-Generated Traffic	Exceeds 5% of capacity?	One-Way Capacity	5% of One-Way Capacity	Directional Site-Generated Traffic	Direction (Peak Period)	Exceeds 5% of capacity?
3200	160							
	160	36	NO	1824	91	19	WB (in AM)	NO
	160	39	NO	1824	91	21	EB (in PM)	NO

Filing No. 3 (Residential - 142 Lots) Site-Generated Traffic

Peak Period	SH 94/Ellicott Highway						W of Ellicott Hwy	
	Intersection Turning Movements						Totals	
	SBL	WBR	WBT	WBL	NBR	EBT	EB	WB
AM Peak	1	2	5	2	2	1	8	3
PM Peak	2	5	3	1	1	2	5	9

Note: Vehicles per hour during the AM and PM peak hours

CDOT 5% of Capacity Calculations & Threshold Evaluation (w/ Filing Nos. 1, 2, and 3 (Cumulative)

Two-Way Capacity	5% of Capacity	Site-Generated Traffic	Exceeds 5% of capacity?	One-Way Capacity	5% of One-Way Capacity	Directional Site-Generated Traffic	Direction (Peak Period)	Exceeds 5% of capacity?
3200	160							
	160	47	NO	1824	91	22	WB (in AM)	NO
	160	53	NO	1824	91	26	EB (in PM)	NO

Table 8: Auxiliary Turn Lane Evaluation

Auxiliary Lane	Threshold/ Warrant (vehicles/hr)	Current Turning Volumes		Filing No. 1 Volumes (Part of Baseline Traffic)		Filing No. 2 Site-Generated Turning Volumes		Existing + Filing 1 + Filing 2 (Site) Volumes				Short-Term Baseline Traffic - Including Fil. 1 + 3		Short-Term Baseline (Including Filings 1 and 3) Plus Filing 2 (Site) Volumes				Would Ellicott Town Center** Add Volume to Turning Movement?	Prescribed Length (ft) for Filings 1, 2 and 3		Existing (ft)	
		AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	Per Table __ - Does the site impact exceed 5% of Roadway Capacity	Would Volumes Exceed Access Code Threshold?	AM Peak	PM Peak	AM Peak	PM Peak	Per Table __ - Does the site impact exceed 5% of Roadway Capacity	Would Volumes Exceed Access Code Threshold?		Lane	Taper	Lane	Taper
Peyton Highway/Highway 94																						
Westbound Left-Turn Decel.	10	6	9	**2**	**1**	**2**	3	10	13	NO		10	12	12	15	YES	YES	YES	500' + 25' (storage)	300'		
Westbound Right-Turn Decel.	25	18	15	4	3	6	8	28	26			27	21	33	29		YES	YES	500'	300'		
SB to Westbound Right-Turn Accel	50	20	11					20	11			20	11	20	11		No	No	- - -	- - -		
Eastbound Left -Turn Decel.	10	5	17					5	17			5	17	5	17		YES	No	500' + 25' (storage)	300'		
Eastbound Right-Turn Decel.	25	5	20					5	20			5	20	5	20		No	No	- - -	- - -		
NB to Eastbound Right-Turn Accel.	50	5	4	1	2	3	1	9	7			6	9	9	10		No	No	- - -	- - -	- - -	- - -
Ellicott Highway/Highway 94																						
Westbound Left-Turn Decel.	Exists	**25**	7					25	7	NO		25	7	25	7	NO	**Exists**	No	273' + 25' (storage)	162'	Exists (285')	Exists (100')
Westbound Right-Turn Decel.	25	12	13					12	13			12	13	12	13		No	No	- - -	- - -	- - -	- - -
SB to Westbound Right-Turn Accel.	50	38	34	0	1	4	3	42	38			39	37	43	40		No	YES	- - -	- - -	- - -	- - -
Eastbound Left -Turn Decel.	Exists	14	39	1	1	3	4	18	44			17	41	20	45		**Exists**	YES	273' + 25' (storage)	162'	Exists (130')*	Exists (90')
Eastbound Right-Turn Decel.	25	106	66	**3**	**2**	**7**	10	116	78			114	71	121	81		YES	YES	273'	162'		
NB to Eastbound Right-Turn Accel.	50	11	23					11	23			11	23	11	23		No	No	- - -	- - -	- - -	- - -
New Log Road/Highway 94																						
Eastbound Right-Turn	25	0	0	16	54	0	0	16	54	N/A	YES	21	70	21	70	N/A	YES	YES	500'	300'		
NB to Eastbound Right-Turn (Accel.)	50	0	0	0	0	0	0	0	0		No	0	0	0	0		No	YES	- - -	- - -		
Westbound Left-Turn	10			2	6	32	21	34	27		YES	5	15	37	36		YES	YES	500' + 50' (storage)	300'		
NB to Westbound ***Left -Turn*** *(Accel.)*	Case-by-case basis	0	0	48	32	32	46	80	78		CDOT is REQUIRING	116	77	148	123		CDOT is REQUIRING	YES	1,080'	300'		
Springs Road/Highway 94																						
Eastbound Right Turn	25	0	0	0	0	48	30	48	30	N/A	YES	18	62	66	92	N/A	YES	YES	500'	300'		
NB to Eastbound Right-Turn Accel.	50	0	0	6	4	21	31	14	9		No	14	9	35	40		No	No	- - -	- - -		

* Left turn Lane extends west as TWLTL

** Including Filings 1 and 3 (baseline) plus site (Filing 2)

Source: LSC Transportation Consultants, Inc.

Table 9: Escrow Analysis for Future Traffic Signal (SH 94 + Peyton Hwy)

	Ellicott Town Center Subdivisions			
	Filing 1	**Filing 2**		**Filing 3**
		Individual Lot(s)	**Filing 2 Buildout**	
Number of Lots Shown in TIA	98	Non-residential	Non-residential	142
Number of Lots	98	**TBD**	9 (commercial)	142
Status	Access permit application submitted	Phased Access permits w/ Individual Lots	For Reference Only - Buildout Summary (Note: Phased Access permits w/ Individual Lots)	Access permit (future)
AM [1]	1	TBD	4	2.5
PM [1]	9	TBD	5	7
Average (AM + PM) [1]	2	TBD	6	4
Intersection Turning Movement	Southbound left	Southbound left	Southbound left	Southbound left
Assumed "Demoninator"	75	75	75	75
Percent for Filing	3.3%	TBD	9.3%	5.3%
Signal Escrow Amounts [2]	$16,667	TBD portion of $46,667	$46,667	$26,667
Cumulative Percent	3.3%	TBD	12.7%	18.0%
Cumulative Signal Escrow Amounts [2]	$16,667	TBD	$63,333	$90,000
Timing w/ Proposed Deferrment	**Deferred**	**Deferred**	**Deferred**	**$90,000**

[1] Site-generated traffic volumes only

[2] Portion of total escrow of $500,000

Source: LSC Transportation Consultants, Inc. (August 26, 2019)

Table 10: Escrow Analysis for Future Traffic Signal (SH 94 + Ellicott Hwy)

	Ellicott Town Center Subdivisions			
	Filing 1	Filing 2		Filing 3
		Individual Lot(s)	Filing 2 Buildout	
Number of Lots Shown in TIA	98	Non-residential	Non-residential	142
Number of Lots	98	**TBD**	9 (commercial)	142
Access Permit Status	Access permit application submitted	Phased Access permits w/ Individual Lots	For Reference Only - Buildout Summary (Note: Phased Access permits w/ Individual Lots)	Access permit (future)
AM [1]	1	TBD	4	2.5
PM [1]	10	TBD	7	8.5
Average (AM + PM) [1]	2	TBD	5	3.5
Intersection Turning Movement	Northbound left	Northbound left	Northbound left	Northbound left
Assumed "Demoninator" for the Calculation	75	75	75	75
Percent for Filing	3.3%	TBD	11.3%	4.7%
Signal Escrow Amounts [2]	$16,667	TBD portion of $56,667	$56,667	$23,333
Cumulative Percent	3.3%	TBD	14.7%	19.3%
Cumulative Signal Escrow Amounts [2]	$16,667	TBD	$73,333	$96,667
Timing w/ Proposed Deferrment	**Deferred**	**Deferred**	**Deferred**	**$96,667**

[1] Site-generated traffic volumes only

[2] Portion of total escrow of $500,000

Source: LSC Transportation Consultants, Inc. (August 26, 2019)

Table 11: Escrow Analysis for Future Eastbound Right Turn Lane (SH 94 + Ellicott Hwy)

	Ellicott Town Center Subdivisions			
	Filing 1	**Filing 2**		**Filing 3**
		Individual Lot(s)	**Filing 2 Buildout**	
Number of Lots Shown in TIA	98	Non-residential	Non-residential	142
Number of Lots	98	**TBD**	9 (commercial)	142
Status	Access permit application submitted	Phased Access permits w/ Individual Lots	For Reference Only - Buildout Summary (Note: Phased Access permits w/ Individual Lots)	Access permit (future)
AM [1]	3	TBD	2	2.5
PM [1]	7	TBD	10	8.5
Average (AM + PM) [1]	5	TBD	7	6
Intersection Turning Movement	Eastbound right	Eastbound right	Eastbound right	Eastbound right
Assumed "Demoninator"	25	25	25	25
Percent for Filing	10.0%	TBD	34.0%	24.0%
Signal Escrow Amounts	$7,500	TBD portion of $25,500	$25,500	$18,000
Cumulative Percent	10.0%	TBD	**44.0%**	68.0%
Cumulative Signal Escrow Amounts [2]	$7,500	TBD	$33,000	$51,000
Timing w/ Proposed Deferrment	**Deferred**	**Deferred**	**Deferred**	**$51,000**

[1] Site-generated traffic volumes only

[2] Portion of total escrow of $75,000

Source: LSC Transportation Consultants, Inc. (August 26, 2019)

Note that the submitted plat for Filing No. 2 includes 3 lots and 4 tracts. Are the improvements indicated for Filing 2 meant to be completed at the time of the submitted filing 2 plat or at the time of the future development of the tracts that encompass the remaining lots of this commercial area?

Table 12: Roadway Improvements

Item #	Improvement	Timing	Responsibility
	Roadway Segment Improvements		
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 an Urban Non-Residential Collector	With Filing No. 1	Applicant
	New Log Road/SH 94 Intersection Improvements		
3	Eastbound Right Turn Deceleration Lane	With Filing No. 1	Applicant
4	Westbound Left Turn Deceleration Lane - 525' - to accommodate Filings 1,2 and 3	With Filing No. 2	Applicant
5	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
6	A left-turn acceleration lane will be required for the northbound to westbound movement.	With the installation of the westbound left turn deceleration lane	Applicant
	Springs Road/SH 94 Intersection Improvements		
7	Eastbound Right Turn Deceleration Lane	With Filing No. 2	Applicant
8	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.	Applicant
	Peyton Highway/SH 94 Intersection Improvements		
9	Westbound Left Turn Deceleration Lane - 525'	Defer to Filing 3 - (Note: CDOT Filing 2 review comments identified as required to be constructed. LSC report presents rationale for deferrment of construction to Filing 3.)	Applicant
10	Eastbound Left Turn Deceleration Lane	Upcoming CDOT project	To be constructed by CDOT
11	Westbound Right Turn Deceleration Lane - 500'	Defer to Filing 3 - (Note: CDOT Filing 2 review comments identified as required to be constructed. LSC report presents rationale for deferrment of construction to Filing 3)	Applicant
12	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 for details.	Defer to Filing 3 - (Note: CDOT Filing 2 review comments identified as required to be Escrowed. LSC report presents rationale for deferrment of Filing 1 and 2 escrow amounts to Filing 3)	Applicant
	Ellicott Highway/SH 94 Intersection Improvements		
13	Escrow fair share percentage of the cost of a 273-ft eastbound right turn lane. Please refer to separate Escrow Table for details.	Defer to Filing 3 - (Note: CDOT Filing 2 review comments identified as required to be Escrowed. LSC report presents rationale for deferrment of Filing 1 and 2 escrow amounts to Filing 3.)	Applicant
14	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 for details)	Defer to Filing 3 - (Note: CDOT Filing 2 review comments identified as required to be Escrowed. LSC report presents rationale for deferrment of Filing 1 and 2 escrow amounts to Filing 3)	Applicant
	Future ROW Preservation for SH 94		
15	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	Applicaant

Notes: *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. (9/12/2019)

Not to scale

Figure 1

Vicinity Map

Ellicott Town Center Rezone (LSC# 194060)

LSC TRANSPORTATION CONSULTANTS, INC.

Not to scale

Figure 2

Site Plan

Ellicott Town Center Rezone (LSC# 194060)

TRANSPORTATION CONSULTANTS, INC.

LEGEND:

$\frac{XX}{XX} = \frac{\text{AM Peak-Hour Traffic (veh/hr)}}{\text{PM Peak-Hour Traffic (veh/hr)}}$

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

* CDOT (2018) ** El Paso County MTCP (2016) *** Estimate by LSC (based on 10x PM)

= Stop Sign

Figure 3

Existing Traffic, Lane Geometry, and Traffic Control

Ellicott Town Center Rezone (LSC# 194060)

LSC TRANSPORTATION CONSULTANTS, INC.

LEGEND:

$$\frac{XX\%}{XX\%} = \frac{\text{Percent Industrial/Manufacturing Trip Distribution}}{\text{Percent Commercial Trip Distribution (non-passby trips)}}$$

* Pass-by trip distribution

TRANSPORTATION CONSULTANTS, INC.

Figure 4

Site-Generated Trip Distribution Estimate

Ellicott Town Center Rezone (LSC# 194060)

LEGEND:

XX/XX = AM Peak-Hour Traffic (veh/hr) / PM Peak-Hour Traffic (veh/hr)

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

*** Estimate by LSC

= Stop Sign

LSC TRANSPORTATION CONSULTANTS, INC.

Figure 5

Short-Term Baseline Traffic*, Lane Geometry, and Traffic Control

Ellicott Town Center Rezone (LSC# 194060)

LEGEND:

$\frac{XX}{XX} = \frac{\text{AM Peak-Hour Traffic (veh/hr)}}{\text{PM Peak-Hour Traffic (veh/hr)}}$

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

TRANSPORTATION CONSULTANTS, INC.

Figure 6

Site-Generated Traffic

Ellicott Town Center Rezone (LSC# 194060)

LEGEND:

$\frac{XX}{XX}$ = $\frac{\text{AM Peak-Hour Traffic (veh/hr)}}{\text{PM Peak-Hour Traffic (veh/hr)}}$

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

= Stop Sign

*Note: Baseline traffic includes Filings 1&2 (now Filing 3) 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 7

Short-Term Baseline* plus Site Traffic, Lane Geometry, and Traffic Control

Ellicott Town Center Rezone (LSC# 194060)

LSC TRANSPORTATION CONSULTANTS, INC.

LEGEND:

$\frac{XX}{XX} = \frac{\text{AM Peak-Hour Traffic (veh/hr)}}{\text{PM Peak-Hour Traffic (veh/hr)}}$

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

* CDOT (2040) ** El Paso County MTCP (2040) *** Estimate by LSC

= Traffic Signal = Stop Sign

LSC TRANSPORTATION CONSULTANTS, INC.

Figure 8

2040 Background Traffic, Lane Geometry, and Traffic Control

Ellicott Town Center Rezone (LSC# 194060)

LEGEND:

$\frac{XX}{XX} = \frac{\text{AM Peak-Hour Traffic (veh/hr)}}{\text{PM Peak-Hour Traffic (veh/hr)}}$

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

* CDOT (2018) ** El Paso County MTCP (2016) *** Estimate by LSC (based on 10x PM)

= Traffic Signal = Stop Sign

LSC TRANSPORTATION CONSULTANTS, INC.

Figure 9

2040 Background plus Site Traffic, Lane Geometry, and Traffic Control

Ellicott Town Center Rezone (LSC# 194060)

Principal Arterial (CDOT NR-A)
Urban Minor Arterial
Urban Residential Collector
Urban Local
Urban Non-Residential Collector

TRANSPORTATION CONSULTANTS, INC.

Figure 10

Roadway Functional Classifications

Ellicott Town Center Rezone (LSC# 194060)

LEGEND:

= Traffic Signal = Stop Sign *Receiving Lane/Merge Lane

Figure 11

Turn Lane and Traffic Control Phasing at SH 94/New Log Road

Ellicott Town Center Rezone (LSC# 194060)

LSC TRANSPORTATION CONSULTANTS, INC.

Traffic Counts

TRANSPORTATION
CONSULTANTS, INC.

LSC Transportation Consultants, Inc.

545 E Pikes Peak Ave, Suite 210
Colorado Springs, CO 80905
719-633-2868

File Name : Antelope Dr - Hwy 94 AM
Site Code : 184800
Start Date : 8/30/2018
Page No : 1

Groups Printed- Unshifted

	Antelope Dr Southbound				Hwy 94 Westbound				Northbound				Hwy 94 Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
06:30	2	0	5	0	0	66	0	0	0	0	0	0	3	14	0	0	90
06:45	1	0	9	0	0	73	1	0	0	0	0	0	2	26	0	0	112
Total	3	0	14	0	0	139	1	0	0	0	0	0	5	40	0	0	202
07:00	1	0	12	0	0	83	0	0	0	0	0	0	2	27	0	0	125
07:15	6	0	6	0	0	68	0	0	0	0	0	0	1	56	0	0	137
07:30	4	0	7	0	0	69	0	0	0	0	0	0	2	38	0	0	120
07:45	0	0	6	0	0	83	2	0	0	0	0	0	2	29	0	0	122
Total	11	0	31	0	0	303	2	0	0	0	0	0	7	150	0	0	504
08:00	1	0	5	0	0	53	1	0	0	0	0	0	2	16	0	0	78
08:15	1	0	5	0	0	51	1	0	0	0	0	0	3	19	0	0	80
Grand Total	16	0	55	0	0	546	5	0	0	0	0	0	17	225	0	0	864
Apprch %	22.5	0	77.5	0	0	99.1	0.9	0	0	0	0	0	7	93	0	0	
Total %	1.9	0	6.4	0	0	63.2	0.6	0	0	0	0	0	2	26	0	0	

LSC Transportation Consultants, Inc.

545 E Pikes Peak Ave, Suite 210
Colorado Springs, CO 80905
719-633-2868

File Name : Antelope Dr - Hwy 94 AM
Site Code : 184800
Start Date : 8/30/2018
Page No : 2

	Antelope Dr Southbound					Hwy 94 Westbound					Northbound					Hwy 94 Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:30 to 08:15 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00																					
07:00	1	0	**12**	0	**13**	0	**83**	0	0	83	0	0	0	0	0	**2**	27	0	0	29	125
07:15	**6**	0	6	0	12	0	68	0	0	68	0	0	0	0	0	1	**56**	0	0	**57**	**137**
07:30	4	0	7	0	11	0	69	0	0	69	0	0	0	0	0	2	38	0	0	40	120
07:45	0	0	6	0	6	0	83	**2**	0	**85**	0	0	0	0	0	2	29	0	0	31	122
Total Volume	11	0	31	0	42	0	303	2	0	305	0	0	0	0	0	7	150	0	0	157	504
% App. Total	26.2	0	73.8	0		0	99.3	0.7	0		0	0	0	0		4.5	95.5	0	0		
PHF	.458	.000	.646	.000	.808	.000	.913	.250	.000	.897	.000	.000	.000	.000	.000	.875	.670	.000	.000	.689	.920

LSC Transportation Consultants, Inc.
545 E Pikes Peak Ave, Suite 210
Colorado Springs, CO 80905
719-633-2868

File Name : Antelope Dr - Hwy 94 AM
Site Code : 184800
Start Date : 8/30/2018
Page No : 3

LSC Transportation Consultants, Inc.

545 E Pikes Peak Ave, Suite 210
Colorado Springs, CO 80905
719-633-2868

File Name : Antelope Dr - Hwy 94 PM
Site Code : 184800
Start Date : 8/30/2018
Page No : 1

Groups Printed- Unshifted

	Antelope Dr Southbound				Hwy 94 Westbound				Northbound				Hwy 94 Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:00	3	0	5	0	0	74	2	0	0	0	0	0	2	46	0	0	132
16:15	1	0	0	0	0	57	4	0	0	0	0	0	7	58	0	0	127
16:30	1	0	6	0	0	37	2	0	0	0	0	0	10	58	0	0	114
16:45	2	0	1	0	0	41	1	0	0	0	0	0	5	56	0	0	106
Total	7	0	12	0	0	209	9	0	0	0	0	0	24	218	0	0	479
17:00	1	0	1	0	0	35	0	0	0	0	0	0	7	81	0	0	125
17:15	1	0	3	0	0	31	2	0	0	0	0	0	2	64	0	0	103
17:30	2	0	2	0	0	20	1	0	0	0	0	0	12	69	0	0	106
17:45	2	0	0	0	0	26	0	0	0	0	0	0	8	74	0	0	110
Total	6	0	6	0	0	112	3	0	0	0	0	0	29	288	0	0	444
Grand Total	13	0	18	0	0	321	12	0	0	0	0	0	53	506	0	0	923
Apprch %	41.9	0	58.1	0	0	96.4	3.6	0	0	0	0	0	9.5	90.5	0	0	
Total %	1.4	0	2	0	0	34.8	1.3	0	0	0	0	0	5.7	54.8	0	0	

LSC Transportation Consultants, Inc.

545 E Pikes Peak Ave, Suite 210
Colorado Springs, CO 80905
719-633-2868

File Name : Antelope Dr - Hwy 94 PM
Site Code : 184800
Start Date : 8/30/2018
Page No : 2

	Antelope Dr Southbound					Hwy 94 Westbound					Northbound					Hwy 94 Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:00																					
16:00	**3**	0	5	0	**8**	0	**74**	2	0	**76**	0	0	0	0	0	2	46	0	0	48	**132**
16:15	1	0	0	0	1	0	57	**4**	0	61	0	0	0	0	0	7	**58**	0	0	65	127
16:30	1	0	**6**	0	7	0	37	2	0	39	0	0	0	0	0	**10**	58	0	0	**68**	114
16:45	2	0	1	0	3	0	41	1	0	42	0	0	0	0	0	5	56	0	0	61	106
Total Volume	7	0	12	0	19	0	209	9	0	218	0	0	0	0	0	24	218	0	0	242	479
% App. Total	36.8	0	63.2	0		0	95.9	4.1	0		0	0	0	0		9.9	90.1	0	0		
PHF	.583	.000	.500	.000	.594	.000	.706	.563	.000	.717	.000	.000	.000	.000	.000	.600	.940	.000	.000	.890	.907

LSC Transportation Consultants, Inc.
545 E Pikes Peak Ave, Suite 210
Colorado Springs, CO 80905
719-633-2868

File Name : Antelope Dr - Hwy 94 PM
Site Code : 184800
Start Date : 8/30/2018
Page No : 3

LSC Transportation Consultants, Inc.

545 E Pikes Peak Ave, Suite 210
Colorado Springs, CO 80905
719-633-2868

File Name : Hwy 94 - Ellicott Hwy AM
Site Code : 194060
Start Date : 1/15/2019
Page No : 1

Groups Printed- Unshifted

	Ellicott Hwy Southbound				Hwy 94 Westbound				Ellicott Hwy Northbound				Hwy 94 Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
06:30	2	5	13	0	0	42	5	0	13	2	1	0	3	7	4	0	97
06:45	5	5	8	0	1	33	4	0	16	3	1	0	2	8	10	0	96
Total	7	10	21	0	1	75	9	0	29	5	2	0	5	15	14	0	193
07:00	4	7	10	0	4	53	0	0	13	2	3	0	2	12	14	0	124
07:15	4	15	11	0	6	41	4	0	14	4	1	0	5	6	42	0	153
07:30	5	18	6	0	10	33	2	0	29	6	3	0	4	12	35	0	163
07:45	2	7	11	0	5	22	6	0	32	8	4	0	3	11	15	0	126
Total	15	47	38	0	25	149	12	0	88	20	11	0	14	41	106	0	566
08:00	5	5	4	0	2	29	5	0	12	4	1	0	2	20	6	0	95
08:15	4	2	6	0	2	31	4	0	9	4	1	0	5	11	2	0	81
Grand Total	31	64	69	0	30	284	30	0	138	33	15	0	26	87	128	0	935
Apprch %	18.9	39	42.1	0	8.7	82.6	8.7	0	74.2	17.7	8.1	0	10.8	36.1	53.1	0	
Total %	3.3	6.8	7.4	0	3.2	30.4	3.2	0	14.8	3.5	1.6	0	2.8	9.3	13.7	0	

LSC Transportation Consultants, Inc.

545 E Pikes Peak Ave, Suite 210
Colorado Springs, CO 80905
719-633-2868

File Name : Hwy 94 - Ellicott Hwy AM
Site Code : 194060
Start Date : 1/15/2019
Page No : 2

	Ellicott Hwy Southbound					Hwy 94 Westbound					Ellicott Hwy Northbound					Hwy 94 Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:30 to 08:15 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00																					
07:00	4	7	10	0	21	4	**53**	0	0	**57**	13	2	3	0	18	2	**12**	14	0	28	124
07:15	4	15	**11**	0	**30**	6	41	4	0	51	14	4	1	0	19	**5**	6	**42**	0	**53**	153
07:30	**5**	**18**	6	0	29	**10**	33	2	0	45	29	6	3	0	38	4	12	35	0	51	**163**
07:45	2	7	11	0	20	5	22	**6**	0	33	**32**	**8**	**4**	0	**44**	3	11	15	0	29	126
Total Volume	15	47	38	0	100	25	149	12	0	186	88	20	11	0	119	14	41	106	0	161	566
% App. Total	15	47	38	0		13.4	80.1	6.5	0		73.9	16.8	9.2	0		8.7	25.5	65.8	0		
PHF	.750	.653	.864	.000	.833	.625	.703	.500	.000	.816	.688	.625	.688	.000	.676	.700	.854	.631	.000	.759	.868

LSC Transportation Consultants, Inc.
545 E Pikes Peak Ave, Suite 210
Colorado Springs, CO 80905
719-633-2868

File Name : Hwy 94 - Ellicott Hwy AM
Site Code : 194060
Start Date : 1/15/2019
Page No : 3

LSC Transportation Consultants, Inc.

545 E Pikes Peak Ave, Suite 210
Colorado Springs, CO 80905
719-633-2868

File Name : Hwy 94 - Ellicott Hwy PM
Site Code : 00194060
Start Date : 1/10/2019
Page No : 1

Groups Printed- Unshifted

	Ellicott Hwy Southbound				Hwy 94 Westbound				Ellicott Hwy Northbound				Hwy 94 Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:00	8	16	3	0	1	27	5	0	47	15	8	0	10	31	20	0	191
16:15	4	3	5	0	2	28	6	0	28	14	6	0	10	33	14	0	153
16:30	13	1	15	0	3	31	0	0	8	8	4	0	9	42	18	0	152
16:45	7	4	11	0	1	15	2	0	12	7	5	0	10	46	14	0	134
Total	32	24	34	0	7	101	13	0	95	44	23	0	39	152	66	0	630
17:00	3	11	9	0	3	17	4	0	11	12	0	0	12	44	14	0	140
17:15	7	4	6	0	0	16	7	0	10	6	1	0	8	41	16	0	122
17:30	5	6	5	0	0	12	2	0	9	3	1	0	5	48	16	0	112
17:45	3	5	4	0	0	11	3	0	8	2	0	0	6	45	14	0	101
Total	18	26	24	0	3	56	16	0	38	23	2	0	31	178	60	0	475
Grand Total	50	50	58	0	10	157	29	0	133	67	25	0	70	330	126	0	1105
Apprch %	31.6	31.6	36.7	0	5.1	80.1	14.8	0	59.1	29.8	11.1	0	13.3	62.7	24	0	
Total %	4.5	4.5	5.2	0	0.9	14.2	2.6	0	12	6.1	2.3	0	6.3	29.9	11.4	0	

LSC Transportation Consultants, Inc.

545 E Pikes Peak Ave, Suite 210
Colorado Springs, CO 80905
719-633-2868

File Name : Hwy 94 - Ellicott Hwy PM
Site Code : 00194060
Start Date : 1/10/2019
Page No : 2

	Ellicott Hwy Southbound					Hwy 94 Westbound					Ellicott Hwy Northbound					Hwy 94 Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:00																					
16:00	8	**16**	3	0	27	1	27	5	0	33	**47**	**15**	**8**	0	**70**	**10**	31	**20**	0	61	**191**
16:15	4	3	5	0	12	2	28	**6**	0	**36**	28	14	6	0	48	10	33	14	0	57	153
16:30	**13**	1	**15**	0	**29**	**3**	**31**	0	0	34	8	8	4	0	20	9	42	18	0	69	152
16:45	7	4	11	0	22	1	15	2	0	18	12	7	5	0	24	10	**46**	14	0	**70**	134
Total Volume	32	24	34	0	90	7	101	13	0	121	95	44	23	0	162	39	152	66	0	257	630
% App. Total	35.6	26.7	37.8	0		5.8	83.5	10.7	0		58.6	27.2	14.2	0		15.2	59.1	25.7	0		
PHF	.615	.375	.567	.000	.776	.583	.815	.542	.000	.840	.505	.733	.719	.000	.579	.975	.826	.825	.000	.918	.825

LSC Transportation Consultants, Inc.
545 E Pikes Peak Ave, Suite 210
Colorado Springs, CO 80905
719-633-2868

File Name : Hwy 94 - Ellicott Hwy PM
Site Code : 00194060
Start Date : 1/10/2019
Page No : 3

Counts by LSC

LSC Transportation Consultants, Inc.

File Name : Peyton Hwy - Hwy 94 AM
Site Code : 00174730
Start Date : 12/12/2017
Page No : 1

Groups Printed- Unshifted

	Peyton Hwy From North				Hwy 94 From East				Peyton Hwy From South				Hwy 94 From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	4	0	1	0	9	58	3	0	0	1	6	0	1	11	1	0	95
06:45 AM	4	1	0	0	5	75	0	0	1	2	3	0	1	15	0	0	107
Total	8	1	1	0	14	133	3	0	1	3	9	0	2	26	1	0	202
07:00 AM	8	3	2	0	5	76	3	0	1	1	5	0	0	27	1	0	132
07:15 AM	8	1	9	0	5	64	2	0	0	1	6	0	2	42	1	0	141
07:30 AM	2	3	4	0	6	63	0	0	2	4	2	0	0	32	1	0	119
07:45 AM	2	1	2	0	2	73	1	0	2	2	1	0	3	21	2	0	112
Total	20	8	17	0	18	276	6	0	5	8	14	0	5	122	5	0	504
08:00 AM	2	0	2	0	3	54	1	0	1	3	3	0	0	17	0	0	86
08:15 AM	4	0	3	0	1	37	2	0	1	1	2	0	5	16	1	0	73
Grand Total	34	9	23	0	36	500	12	0	8	15	28	0	12	181	7	0	865
Apprch %	51.5	13.6	34.8	0.0	6.6	91.2	2.2	0.0	15.7	29.4	54.9	0.0	6.0	90.5	3.5	0.0	
Total %	3.9	1.0	2.7	0.0	4.2	57.8	1.4	0.0	0.9	1.7	3.2	0.0	1.4	20.9	0.8	0.0	

Counts by LSC

File Name : Peyton Hwy - Hwy 94 AM
Site Code : 00174730
Start Date : 12/12/2017
Page No : 2

	Peyton Hwy From North					Hwy 94 From East					Peyton Hwy From South					Hwy 94 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour From 06:30 AM to 08:15 AM - Peak 1 of 1																					
Intersection	07:00 AM																				
Volume	20	8	17	0	45	18	276	6	0	300	5	8	14	0	27	5	122	5	0	132	504
Percent	44.4	17.8	37.8	0.0		6.0	92.0	2.0	0.0		18.5	29.6	51.9	0.0		3.8	92.4	3.8	0.0		
07:15 Volume	8	1	9	0	18	5	64	2	0	71	0	1	6	0	7	2	42	1	0	45	141
Peak Factor																					0.894
High Int.	07:15 AM					07:00 AM					07:30 AM					07:15 AM					
Volume	8	1	9	0	18	5	76	3	0	84	2	4	2	0	8	2	42	1	0	45	
Peak Factor					0.625					0.893					0.844					0.733	

LSC Transportation Consultants, Inc.

545 E Pikes Peak Ave, Suite 210
Colorado Springs, CO 80905
719-633-2868

File Name : Peyton Hwy - Hwy 94 PM
Site Code : 184800
Start Date : 10/17/2018
Page No : 1

Groups Printed- Unshifted

	Peyton Hwy Southbound				Hwy 94 Westbound				Peyton Hwy Northbound				Hwy 94 Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
16:00	4	2	1	0	2	36	5	0	2	0	0	0	6	64	3	0	125
16:15	4	1	1	0	3	48	6	0	2	0	2	0	4	76	7	0	154
16:30	4	1	4	0	3	32	0	0	2	1	1	0	6	60	3	0	117
16:45	5	4	5	0	1	28	4	0	1	2	1	0	1	77	7	0	136
Total	17	8	11	0	9	144	15	0	7	3	4	0	17	277	20	0	532
17:00	5	2	3	0	0	28	3	0	1	1	2	0	1	61	2	0	109
17:15	6	2	3	0	2	36	2	0	3	2	0	0	1	59	5	0	121
17:30	7	2	1	0	0	21	3	0	0	2	4	0	0	89	4	0	133
17:45	9	0	0	0	1	23	1	0	3	2	2	0	3	60	11	0	115
Total	27	6	7	0	3	108	9	0	7	7	8	0	5	269	22	0	478
Grand Total	44	14	18	0	12	252	24	0	14	10	12	0	22	546	42	0	1010
Apprch %	57.9	18.4	23.7	0	4.2	87.5	8.3	0	38.9	27.8	33.3	0	3.6	89.5	6.9	0	
Total %	4.4	1.4	1.8	0	1.2	25	2.4	0	1.4	1	1.2	0	2.2	54.1	4.2	0	

LSC Transportation Consultants, Inc.

545 E Pikes Peak Ave, Suite 210
Colorado Springs, CO 80905
719-633-2868

File Name : Peyton Hwy - Hwy 94 PM
Site Code : 184800
Start Date : 10/17/2018
Page No : 2

	Peyton Hwy Southbound					Hwy 94 Westbound					Peyton Hwy Northbound					Hwy 94 Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:00																					
16:00	4	2	1	0	7	2	36	5	0	43	**2**	0	0	0	2	**6**	64	3	0	73	125
16:15	4	1	1	0	6	**3**	**48**	**6**	0	**57**	2	0	**2**	0	**4**	4	76	**7**	0	**87**	**154**
16:30	4	1	4	0	9	3	32	0	0	35	2	1	1	0	4	6	60	3	0	69	117
16:45	**5**	**4**	**5**	0	**14**	1	28	4	0	33	1	**2**	1	0	4	1	**77**	7	0	85	136
Total Volume	17	8	11	0	36	9	144	15	0	168	7	3	4	0	14	17	277	20	0	314	532
% App. Total	47.2	22.2	30.6	0		5.4	85.7	8.9	0		50	21.4	28.6	0		5.4	88.2	6.4	0		
PHF	.850	.500	.550	.000	.643	.750	.750	.625	.000	.737	.875	.375	.500	.000	.875	.708	.899	.714	.000	.902	.864

LSC Transportation Consultants, Inc.
545 E Pikes Peak Ave, Suite 210
Colorado Springs, CO 80905
719-633-2868

File Name : Peyton Hwy - Hwy 94 PM
Site Code : 184800
Start Date : 10/17/2018
Page No : 3

Levels of Service

TRANSPORTATION
CONSULTANTS, INC.

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↱		↑		↱
Traffic Vol, veh/h	161	18	0	310	0	14
Future Vol, veh/h	161	18	0	310	0	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	500	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	76	76	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	212	24	0	365	0	16

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	212
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	-	0	-	0	828
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	828
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	828	-	-	-
HCM Lane V/C Ratio	0.02	-	-	-
HCM Control Delay (s)	9.4	-	-	-
HCM Lane LOS	A	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-

Intersection	
Int Delay, s/veh	2.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↱	↰	↑	↰	↱
Traffic Vol, veh/h	179	21	5	305	116	0
Future Vol, veh/h	179	21	5	305	116	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	500	600	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	69	69	90	90	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	259	30	6	339	136	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	289	0	610	259
Stage 1	-	-	-	-	259	-
Stage 2	-	-	-	-	351	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1273	-	458	780
Stage 1	-	-	-	-	784	-
Stage 2	-	-	-	-	713	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1273	-	456	780
Mov Cap-2 Maneuver	-	-	-	-	456	-
Stage 1	-	-	-	-	780	-
Stage 2	-	-	-	-	713	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	16.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	456	-	-	-	1273	-
HCM Lane V/C Ratio	0.299	-	-	-	0.004	-
HCM Control Delay (s)	16.2	0	-	-	7.8	-
HCM Lane LOS	C	A	-	-	A	-
HCM 95th %tile Q(veh)	1.2	-	-	-	0	-

Intersection	
Int Delay, s/veh	7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	44	114	25	150	12	91	20	11	15	47	39
Future Vol, veh/h	17	44	114	25	150	12	91	20	11	15	47	39
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	128	-	-	285	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	82	82	82	68	68	68	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	58	150	30	183	15	134	29	16	18	57	47

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	198	0	0	208	0	0	480	435	133	451	503	191
Stage 1	-	-	-	-	-	-	177	177	-	251	251	-
Stage 2	-	-	-	-	-	-	303	258	-	200	252	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1375	-	-	1363	-	-	496	514	916	519	471	851
Stage 1	-	-	-	-	-	-	825	753	-	753	699	-
Stage 2	-	-	-	-	-	-	706	694	-	802	698	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1375	-	-	1363	-	-	412	494	916	473	453	851
Mov Cap-2 Maneuver	-	-	-	-	-	-	412	494	-	473	453	-
Stage 1	-	-	-	-	-	-	812	741	-	741	684	-
Stage 2	-	-	-	-	-	-	598	679	-	744	687	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	1	18.4	13.3
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	446	1375	-	-	1363	-	-	557
HCM Lane V/C Ratio	0.402	0.016	-	-	0.022	-	-	0.218
HCM Control Delay (s)	18.4	7.7	-	-	7.7	-	-	13.3
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	1.9	0.1	-	-	0.1	-	-	0.8

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	156	5	10	379	27	14	8	6	20	8	20
Future Vol, veh/h	5	156	5	10	379	27	14	8	6	20	8	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	600	-	500	600	-	500	-	-	378	-	-	378
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	74	74	74	88	88	88	64	64	64
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	173	6	14	512	36	16	9	7	31	13	31

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	548	0	0	179	0	0	765	761	173	736	731	512
Stage 1	-	-	-	-	-	-	185	185	-	540	540	-
Stage 2	-	-	-	-	-	-	580	576	-	196	191	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1021	-	-	1397	-	-	320	335	871	335	349	562
Stage 1	-	-	-	-	-	-	817	747	-	526	521	-
Stage 2	-	-	-	-	-	-	500	502	-	806	742	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1021	-	-	1397	-	-	290	330	871	322	343	562
Mov Cap-2 Maneuver	-	-	-	-	-	-	290	330	-	322	343	-
Stage 1	-	-	-	-	-	-	812	743	-	523	516	-
Stage 2	-	-	-	-	-	-	456	497	-	785	738	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.2	16	15.2
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	303	871	1021	-	-	1397	-	-	328	562
HCM Lane V/C Ratio	0.083	0.008	0.005	-	-	0.01	-	-	0.133	0.056
HCM Control Delay (s)	17.9	9.2	8.5	-	-	7.6	-	-	17.7	11.8
HCM Lane LOS	C	A	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.3	0	0	-	-	0	-	-	0.5	0.2

Intersection	
Int Delay, s/veh	0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↱		↑		↱
Traffic Vol, veh/h	225	62	0	233	0	9
Future Vol, veh/h	225	62	0	233	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	500	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	75	75	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	245	67	0	311	0	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	245
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	-	0	-	0	794
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	794
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	794	-	-	-
HCM Lane V/C Ratio	0.013	-	-	-
HCM Control Delay (s)	9.6	-	-	-
HCM Lane LOS	A	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-

Intersection	
Int Delay, s/veh	2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↱	↰	↑	↰	↱
Traffic Vol, veh/h	287	70	15	218	77	0
Future Vol, veh/h	287	70	15	218	77	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	500	600	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	72	72	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	322	79	21	303	91	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	401	0	667	322
Stage 1	-	-	-	-	322	-
Stage 2	-	-	-	-	345	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1158	-	424	719
Stage 1	-	-	-	-	735	-
Stage 2	-	-	-	-	717	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1158	-	416	719
Mov Cap-2 Maneuver	-	-	-	-	416	-
Stage 1	-	-	-	-	722	-
Stage 2	-	-	-	-	717	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	16
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	416	-	-	-	1158	-
HCM Lane V/C Ratio	0.218	-	-	-	0.018	-
HCM Control Delay (s)	16	0	-	-	8.2	-
HCM Lane LOS	C	A	-	-	A	-
HCM 95th %tile Q(veh)	0.8	-	-	-	0.1	-

Intersection	
Int Delay, s/veh	12.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	41	154	71	7	104	13	104	44	23	32	34	37
Future Vol, veh/h	41	154	71	7	104	13	104	44	23	32	34	37
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	128	-	-	285	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	84	84	84	58	58	58	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	54	203	93	8	124	15	179	76	40	41	44	47

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	139	0	0	296	0	0	551	513	250	564	552	132
Stage 1	-	-	-	-	-	-	358	358	-	148	148	-
Stage 2	-	-	-	-	-	-	193	155	-	416	404	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1445	-	-	1265	-	-	445	465	789	436	442	917
Stage 1	-	-	-	-	-	-	660	628	-	855	775	-
Stage 2	-	-	-	-	-	-	809	769	-	614	599	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1445	-	-	1265	-	-	376	445	789	348	423	917
Mov Cap-2 Maneuver	-	-	-	-	-	-	376	445	-	348	423	-
Stage 1	-	-	-	-	-	-	636	605	-	823	770	-
Stage 2	-	-	-	-	-	-	719	764	-	491	577	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	0.4	30.9	15.2
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	423	1445	-	-	1265	-	-	484
HCM Lane V/C Ratio	0.697	0.037	-	-	0.007	-	-	0.273
HCM Control Delay (s)	30.9	7.6	-	-	7.9	-	-	15.2
HCM Lane LOS	D	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	5.2	0.1	-	-	0	-	-	1.1

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	393	20	12	212	21	7	3	9	28	8	11
Future Vol, veh/h	17	393	20	12	212	21	7	3	9	28	8	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	600	-	500	600	-	500	-	-	378	-	-	378
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	74	74	74	88	88	88	64	64	64
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	437	22	16	286	28	8	3	10	44	13	17

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	314	0	0	459	0	0	822	821	437	811	815	286
Stage 1	-	-	-	-	-	-	475	475	-	318	318	-
Stage 2	-	-	-	-	-	-	347	346	-	493	497	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1246	-	-	1102	-	-	293	309	620	298	312	753
Stage 1	-	-	-	-	-	-	570	557	-	693	654	-
Stage 2	-	-	-	-	-	-	669	635	-	558	545	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1246	-	-	1102	-	-	271	300	620	284	303	753
Mov Cap-2 Maneuver	-	-	-	-	-	-	271	300	-	284	303	-
Stage 1	-	-	-	-	-	-	561	549	-	683	644	-
Stage 2	-	-	-	-	-	-	632	625	-	537	537	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.4	14.9	18
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	279	620	1246	-	-	1102	-	-	288	753
HCM Lane V/C Ratio	0.041	0.016	0.015	-	-	0.015	-	-	0.195	0.023
HCM Control Delay (s)	18.5	10.9	7.9	-	-	8.3	-	-	20.5	9.9
HCM Lane LOS	C	B	A	-	-	A	-	-	C	A
HCM 95th %tile Q(veh)	0.1	0.1	0	-	-	0	-	-	0.7	0.1

Intersection	
Int Delay, s/veh	1.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↱		↑		↱
Traffic Vol, veh/h	151	66	0	327	0	114
Future Vol, veh/h	151	66	0	327	0	114
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	500	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	76	76	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	199	87	0	385	0	134

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	199
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	-	0	-	0	842
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	842
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	842	-	-	-
HCM Lane V/C Ratio	0.159	-	-	-
HCM Control Delay (s)	10.1	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.6	-	-	-

Intersection	
Int Delay, s/veh	4.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↱	↰	↑	↰	↱
Traffic Vol, veh/h	217	21	37	290	148	0
Future Vol, veh/h	217	21	37	290	148	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	500	600	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	69	69	90	90	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	314	30	41	322	174	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	344	0	718	314
Stage 1	-	-	-	-	314	-
Stage 2	-	-	-	-	404	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1215	-	396	726
Stage 1	-	-	-	-	741	-
Stage 2	-	-	-	-	674	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1215	-	383	726
Mov Cap-2 Maneuver	-	-	-	-	383	-
Stage 1	-	-	-	-	716	-
Stage 2	-	-	-	-	674	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	22
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	383	-	-	-	1215	-
HCM Lane V/C Ratio	0.455	-	-	-	0.034	-
HCM Control Delay (s)	22	0	-	-	8.1	-
HCM Lane LOS	C	A	-	-	A	-
HCM 95th %tile Q(veh)	2.3	-	-	-	0.1	-

Intersection	
Int Delay, s/veh	7.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	45	121	25	153	12	101	20	11	15	47	43
Future Vol, veh/h	20	45	121	25	153	12	101	20	11	15	47	43
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	128	-	-	285	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	82	82	82	68	68	68	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	26	59	159	30	187	15	149	29	16	18	57	52

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	202	0	0	218	0	0	500	453	139	468	525	195
Stage 1	-	-	-	-	-	-	191	191	-	255	255	-
Stage 2	-	-	-	-	-	-	309	262	-	213	270	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1370	-	-	1352	-	-	481	503	909	505	458	846
Stage 1	-	-	-	-	-	-	811	742	-	749	696	-
Stage 2	-	-	-	-	-	-	701	691	-	789	686	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1370	-	-	1352	-	-	394	482	909	459	439	846
Mov Cap-2 Maneuver	-	-	-	-	-	-	394	482	-	459	439	-
Stage 1	-	-	-	-	-	-	796	728	-	735	681	-
Stage 2	-	-	-	-	-	-	590	676	-	730	673	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	1	20.3	13.5
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	426	1370	-	-	1352	-	-	551
HCM Lane V/C Ratio	0.456	0.019	-	-	0.023	-	-	0.23
HCM Control Delay (s)	20.3	7.7	-	-	7.7	-	-	13.5
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	2.3	0.1	-	-	0.1	-	-	0.9

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	182	5	12	387	33	14	8	9	29	8	20
Future Vol, veh/h	5	182	5	12	387	33	14	8	9	29	8	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	600	-	500	600	-	500	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	74	74	74	88	88	88	64	64	64
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	202	6	16	523	45	16	9	10	45	13	31

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	568	0	0	208	0	0	814	814	202	782	775	523
Stage 1	-	-	-	-	-	-	214	214	-	555	555	-
Stage 2	-	-	-	-	-	-	600	600	-	227	220	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1004	-	-	1363	-	-	297	312	839	312	329	554
Stage 1	-	-	-	-	-	-	788	725	-	516	513	-
Stage 2	-	-	-	-	-	-	488	490	-	776	721	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1004	-	-	1363	-	-	268	306	839	297	323	554
Mov Cap-2 Maneuver	-	-	-	-	-	-	268	306	-	297	323	-
Stage 1	-	-	-	-	-	-	783	721	-	513	507	-
Stage 2	-	-	-	-	-	-	444	484	-	752	717	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.2	16.5	18.3
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	348	1004	-	-	1363	-	-	360
HCM Lane V/C Ratio	0.101	0.006	-	-	0.012	-	-	0.247
HCM Control Delay (s)	16.5	8.6	-	-	7.7	-	-	18.3
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	1

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↱		↑		↱
Traffic Vol, veh/h	210	92	0	244	0	40
Future Vol, veh/h	210	92	0	244	0	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	500	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	76	76	75	75	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	276	121	0	325	0	47

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	276
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	-	0	-	0	763
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	763
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	763	-	-	-
HCM Lane V/C Ratio	0.062	-	-	-
HCM Control Delay (s)	10	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.2	-	-	-

Intersection	
Int Delay, s/veh	3.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↱	↰	↑	↰	↱
Traffic Vol, veh/h	302	70	36	208	123	0
Future Vol, veh/h	302	70	36	208	123	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	500	600	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	72	72	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	339	79	50	289	145	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	418	0	728	339
Stage 1	-	-	-	-	339	-
Stage 2	-	-	-	-	389	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1141	-	390	703
Stage 1	-	-	-	-	722	-
Stage 2	-	-	-	-	685	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1141	-	373	703
Mov Cap-2 Maneuver	-	-	-	-	373	-
Stage 1	-	-	-	-	690	-
Stage 2	-	-	-	-	685	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.2	20.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	373	-	-	-	1141	-
HCM Lane V/C Ratio	0.388	-	-	-	0.044	-
HCM Control Delay (s)	20.6	0	-	-	8.3	-
HCM Lane LOS	C	A	-	-	A	-
HCM 95th %tile Q(veh)	1.8	-	-	-	0.1	-

Intersection	
Int Delay, s/veh	12.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	45	157	81	7	106	13	111	44	23	32	34	40
Future Vol, veh/h	45	157	81	7	106	13	111	44	23	32	34	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	128	-	-	285	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	84	84	84	58	58	58	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	49	171	88	8	126	15	191	76	40	41	44	51

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	141	0	0	259	0	0	510	470	215	521	507	134
Stage 1	-	-	-	-	-	-	313	313	-	150	150	-
Stage 2	-	-	-	-	-	-	197	157	-	371	357	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1442	-	-	1306	-	-	474	492	825	466	468	915
Stage 1	-	-	-	-	-	-	698	657	-	853	773	-
Stage 2	-	-	-	-	-	-	805	768	-	649	628	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1442	-	-	1306	-	-	402	472	825	377	449	915
Mov Cap-2 Maneuver	-	-	-	-	-	-	402	472	-	377	449	-
Stage 1	-	-	-	-	-	-	674	635	-	824	768	-
Stage 2	-	-	-	-	-	-	712	763	-	526	607	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	0.4	28.8	14.4
HCM LOS			D	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	448	1442	-	-	1306	-	-	519
HCM Lane V/C Ratio	0.685	0.034	-	-	0.006	-	-	0.262
HCM Control Delay (s)	28.8	7.6	-	-	7.8	-	-	14.4
HCM Lane LOS	D	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	5.1	0.1	-	-	0	-	-	1

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	401	20	15	236	29	7	3	10	33	8	11
Future Vol, veh/h	17	401	20	15	236	29	7	3	10	33	8	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	600	-	500	600	-	500	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	74	74	74	88	88	88	64	64	64
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	446	22	20	319	39	8	3	11	52	13	17

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	358	0	0	468	0	0	878	882	446	861	865	319
Stage 1	-	-	-	-	-	-	484	484	-	359	359	-
Stage 2	-	-	-	-	-	-	394	398	-	502	506	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1201	-	-	1094	-	-	268	285	612	276	292	722
Stage 1	-	-	-	-	-	-	564	552	-	659	627	-
Stage 2	-	-	-	-	-	-	631	603	-	552	540	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1201	-	-	1094	-	-	246	275	612	261	282	722
Mov Cap-2 Maneuver	-	-	-	-	-	-	246	275	-	261	282	-
Stage 1	-	-	-	-	-	-	555	543	-	648	616	-
Stage 2	-	-	-	-	-	-	592	592	-	530	531	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.4	15.7	21
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	359	1201	-	-	1094	-	-	306
HCM Lane V/C Ratio	0.063	0.016	-	-	0.019	-	-	0.266
HCM Control Delay (s)	15.7	8	-	-	8.4	-	-	21
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	1

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	247	267	217	385	508	127
Future Volume (vph)	247	267	217	385	508	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		500	800		0	0
Storage Lanes		1	1		1	1
Taper Length (ft)			300		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted			0.594		0.950	
Satd. Flow (perm)	1863	1583	1106	1863	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						126
Link Speed (mph)	65			65	30	
Link Distance (ft)	850			1850	759	
Travel Time (s)	8.9			19.4	17.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.85	0.85
Adj. Flow (vph)	268	290	236	418	598	149
Shared Lane Traffic (%)						
Lane Group Flow (vph)	268	290	236	418	598	149
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	L NA	Right	Left	Left	Left	R NA
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (ft)	100	20	20	100	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	6	20	20	6	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	pm+ov	Perm	NA	Prot	Perm
Protected Phases	4	2		8	2	
Permitted Phases		4	8			2

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	4	2	8	8	2	2
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	72.0	28.0	72.0	72.0	28.0	28.0
Total Split (%)	72.0%	28.0%	72.0%	72.0%	28.0%	28.0%
Maximum Green (s)	66.0	22.0	66.0	66.0	22.0	22.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	Max	Max	Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	66.0	100.0	66.0	66.0	22.0	22.0
Actuated g/C Ratio	0.66	1.00	0.66	0.66	0.22	0.22
v/c Ratio	0.22	0.18	0.32	0.34	1.54	0.33
Control Delay	7.3	0.3	8.8	8.4	284.5	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.3	0.3	8.8	8.4	284.5	10.8
LOS	A	A	A	A	F	B
Approach Delay	3.6			8.5	229.9	
Approach LOS	A			A	F	

Intersection Summary	
Area Type: Other	
Cycle Length: 100	
Actuated Cycle Length: 100	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.54	
Intersection Signal Delay: 91.5	Intersection LOS: F
Intersection Capacity Utilization 68.2%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: W Access & SH 94

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↱		↑		↱
Traffic Vol, veh/h	336	51	0	607	0	111
Future Vol, veh/h	336	51	0	607	0	111
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	500	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	365	55	0	660	0	131

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	365
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	-	0	-	0	680
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	680
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	680	-	-	-
HCM Lane V/C Ratio	0.192	-	-	-
HCM Control Delay (s)	11.5	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.7	-	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	247	267	217	385	508	127
Future Volume (vph)	247	267	217	385	508	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		500	800		0	0
Storage Lanes		1	1		2	1
Taper Length (ft)			300		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1863	1583	1770	1863	3433	1583
Flt Permitted			0.594		0.950	
Satd. Flow (perm)	1863	1583	1106	1863	3433	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						149
Link Speed (mph)	65			65	30	
Link Distance (ft)	850			1850	759	
Travel Time (s)	8.9			19.4	17.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.85	0.85
Adj. Flow (vph)	268	290	236	418	598	149
Shared Lane Traffic (%)						
Lane Group Flow (vph)	268	290	236	418	598	149
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	L NA	Right	Left	Left	Left	R NA
Median Width(ft)	0			12	24	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (ft)	100	20	20	100	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	6	20	20	6	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	pm+ov	Perm	NA	Prot	Perm
Protected Phases	4	2		8	2	
Permitted Phases		4	8			2

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	4	2	8	8	2	2
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	72.0	28.0	72.0	72.0	28.0	28.0
Total Split (%)	72.0%	28.0%	72.0%	72.0%	28.0%	28.0%
Maximum Green (s)	66.0	22.0	66.0	66.0	22.0	22.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	Max	Max	Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	66.0	100.0	66.0	66.0	22.0	22.0
Actuated g/C Ratio	0.66	1.00	0.66	0.66	0.22	0.22
v/c Ratio	0.22	0.18	0.32	0.34	0.79	0.32
Control Delay	7.3	0.3	8.8	8.4	45.7	7.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.3	0.3	8.8	8.4	45.7	7.5
LOS	A	A	A	A	D	A
Approach Delay	3.6			8.5	38.1	
Approach LOS	A			A	D	

Intersection Summary	
Area Type: Other	
Cycle Length: 100	
Actuated Cycle Length: 100	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 18.4	Intersection LOS: B
Intersection Capacity Utilization 54.5%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1: W Access & SH 94

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	137	278	50	281	20	232	40	25	25	60	97
Future Volume (vph)	65	137	278	50	281	20	232	40	25	25	60	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	600		500	600		500	678		273	313		273
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	300			300			222			162		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.574			0.662			0.715			0.729		
Satd. Flow (perm)	1069	1863	1583	1233	1863	1583	1332	1863	1583	1358	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			302			55			55			105
Link Speed (mph)		65			65			55			45	
Link Distance (ft)		1080			1976			976			908	
Travel Time (s)		11.3			20.7			12.1			13.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	71	149	302	54	305	22	252	43	27	27	65	105
Shared Lane Traffic (%)												
Lane Group Flow (vph)	71	149	302	54	305	22	252	43	27	27	65	105
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	28.0	28.0	28.0	28.0	28.0	28.0	32.0	32.0	32.0	32.0	32.0	32.0
Total Split (%)	46.7%	46.7%	46.7%	46.7%	46.7%	46.7%	53.3%	53.3%	53.3%	53.3%	53.3%	53.3%
Maximum Green (s)	22.0	22.0	22.0	22.0	22.0	22.0	26.0	26.0	26.0	26.0	26.0	26.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	Min	Min	Min	Min	Min	Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	11.8	11.8	11.8	11.8	11.8	11.8	12.7	12.7	12.7	12.7	12.7	12.7
Actuated g/C Ratio	0.32	0.32	0.32	0.32	0.32	0.32	0.34	0.34	0.34	0.34	0.34	0.34
v/c Ratio	0.21	0.25	0.43	0.14	0.52	0.04	0.55	0.07	0.05	0.06	0.10	0.17
Control Delay	12.2	11.6	4.0	11.2	14.7	1.4	15.6	9.1	1.7	9.2	9.2	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.2	11.6	4.0	11.2	14.7	1.4	15.6	9.1	1.7	9.2	9.2	3.4
LOS	B	B	A	B	B	A	B	A	A	A	A	A
Approach Delay		7.3			13.5			13.5			6.1	
Approach LOS		A			B			B			A	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 37.2	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.55	
Intersection Signal Delay: 10.2	Intersection LOS: B
Intersection Capacity Utilization 53.5%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 8: N Ellicott Hwy & SH 94

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	380	10	34	772	108	35	15	47	84	15	35
Future Volume (vph)	10	380	10	34	772	108	35	15	47	84	15	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	600		500	600		500	403		378	403		378
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	300			300			222			222		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.886			0.894	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1650	0	1770	1665	0
Flt Permitted	0.193			0.504			0.722			0.713		
Satd. Flow (perm)	360	1863	1583	939	1863	1583	1345	1650	0	1328	1665	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			27			117		51			38	
Link Speed (mph)		65			65			55			55	
Link Distance (ft)		2617			4568			1929			1689	
Travel Time (s)		27.5			47.9			23.9			20.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	413	11	37	839	117	38	16	51	91	16	38
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	413	11	37	839	117	38	67	0	91	54	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5		22.5	22.5	
Total Split (s)	37.0	37.0	37.0	37.0	37.0	37.0	23.0	23.0		23.0	23.0	
Total Split (%)	61.7%	61.7%	61.7%	61.7%	61.7%	61.7%	38.3%	38.3%		38.3%	38.3%	
Maximum Green (s)	32.5	32.5	32.5	32.5	32.5	32.5	18.5	18.5		18.5	18.5	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	Min	Min		Min	Min	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0		0	0	
Act Effct Green (s)	24.5	24.5	24.5	24.5	24.5	24.5	8.7	8.7		8.7	8.7	
Actuated g/C Ratio	0.57	0.57	0.57	0.57	0.57	0.57	0.20	0.20		0.20	0.20	
v/c Ratio	0.05	0.39	0.01	0.07	0.79	0.12	0.14	0.18		0.34	0.15	
Control Delay	4.9	6.2	1.0	4.5	13.7	1.5	17.7	9.2		20.5	9.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	4.9	6.2	1.0	4.5	13.7	1.5	17.7	9.2		20.5	9.9	
LOS	A	A	A	A	B	A	B	A		C	A	
Approach Delay		6.1			11.9			12.3			16.6	
Approach LOS		A			B			B			B	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 42.7	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 10.8	Intersection LOS: B
Intersection Capacity Utilization 59.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 26: Peyton Hwy & SH 94

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↱		↑		↱
Traffic Vol, veh/h	336	51	0	607	0	111
Future Vol, veh/h	336	51	0	607	0	111
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	500	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	365	55	0	660	0	131

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	365
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	-	0	-	0	680
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	680
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	680	-	-	-
HCM Lane V/C Ratio	0.192	-	-	-
HCM Control Delay (s)	11.5	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.7	-	-	-

Intersection	
Int Delay, s/veh	197.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↱		↰	↰	↱
Traffic Vol, veh/h	247	267	217	0	508	127
Future Vol, veh/h	247	267	217	0	508	127
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	500	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	268	290	236	0	598	149

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	558	0	740	268
Stage 1	-	-	-	-	268	-
Stage 2	-	-	-	-	472	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1013	-	~ 384	771
Stage 1	-	-	-	-	777	-
Stage 2	-	-	-	-	628	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1013	-	~ 295	771
Mov Cap-2 Maneuver	-	-	-	-	~ 295	-
Stage 1	-	-	-	-	~ 596	-
Stage 2	-	-	-	-	628	-

Approach	EB	WB	NB
HCM Control Delay, s	0	9.6	$ 403.6
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	295	771	-	-	1013	-
HCM Lane V/C Ratio	2.026	0.194	-	-	0.233	-
HCM Control Delay (s)	$ 501.8	10.8	-	-	9.6	0
HCM Lane LOS	F	B	-	-	A	A
HCM 95th %tile Q(veh)	43	0.7	-	-	0.9	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↱		↑		↱
Traffic Vol, veh/h	336	51	0	607	0	111
Future Vol, veh/h	336	51	0	607	0	111
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	500	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	365	55	0	660	0	131

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	365
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	-	0	-	0	680
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	680
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	680	-	-	-
HCM Lane V/C Ratio	0.192	-	-	-
HCM Control Delay (s)	11.5	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.7	-	-	-

Intersection	
Int Delay, s/veh	47.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	65	137	278	50	281	20	232	40	25	25	60	97
Future Vol, veh/h	65	137	278	50	281	20	232	40	25	25	60	97
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	600	-	500	600	-	500	678	-	273	313	-	273
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	71	149	302	54	305	22	252	43	27	27	65	105

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	327	0	0	451	0	0	800	726	149	890	1006	305
Stage 1	-	-	-	-	-	-	291	291	-	413	413	-
Stage 2	-	-	-	-	-	-	509	435	-	477	593	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1233	-	-	1109	-	-	303	351	898	264	241	735
Stage 1	-	-	-	-	-	-	717	672	-	616	594	-
Stage 2	-	-	-	-	-	-	547	580	-	569	493	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1233	-	-	1109	-	-	~ 184	314	898	211	216	735
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 184	314	-	211	216	-
Stage 1	-	-	-	-	-	-	675	633	-	580	565	-
Stage 2	-	-	-	-	-	-	394	552	-	484	464	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.1	1.2	195.2	18.5
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	184	314	898	1233	-	-	1109	-	-	211	216	735
HCM Lane V/C Ratio	1.371	0.138	0.03	0.057	-	-	0.049	-	-	0.129	0.302	0.143
HCM Control Delay (s)	245.8	18.3	9.1	8.1	-	-	8.4	-	-	24.6	28.7	10.7
HCM Lane LOS	F	C	A	A	-	-	A	-	-	C	D	B
HCM 95th %tile Q(veh)	14.9	0.5	0.1	0.2	-	-	0.2	-	-	0.4	1.2	0.5

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	12.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	380	10	34	772	108	35	15	47	84	15	35
Future Vol, veh/h	10	380	10	34	772	108	35	15	47	84	15	35
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	600	-	500	600	-	500	403	-	-	403	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	413	11	37	839	117	38	16	51	91	16	38

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	956	0	0	424	0	0	1434	1465	413	1387	1359	839
Stage 1	-	-	-	-	-	-	435	435	-	913	913	-
Stage 2	-	-	-	-	-	-	999	1030	-	474	446	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	719	-	-	1135	-	-	112	128	639	120	149	366
Stage 1	-	-	-	-	-	-	600	580	-	328	352	-
Stage 2	-	-	-	-	-	-	293	311	-	571	574	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	719	-	-	1135	-	-	88	122	639	96	142	366
Mov Cap-2 Maneuver	-	-	-	-	-	-	88	122	-	96	142	-
Stage 1	-	-	-	-	-	-	591	571	-	323	340	-
Stage 2	-	-	-	-	-	-	242	301	-	503	565	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.3	39.2	108.3
HCM LOS			E	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	88	316	719	-	-	1135	-	-	96	248
HCM Lane V/C Ratio	0.432	0.213	0.015	-	-	0.033	-	-	0.951	0.219
HCM Control Delay (s)	74	19.5	10.1	-	-	8.3	-	-	158.7	23.5
HCM Lane LOS	F	C	B	-	-	A	-	-	F	C
HCM 95th %tile Q(veh)	1.8	0.8	0	-	-	0.1	-	-	5.6	0.8

Intersection	
Intersection Delay, s/veh	18.6
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	65	137	278	50	281	20	232	40	25	25	60	97
Future Vol, veh/h	65	137	278	50	281	20	232	40	25	25	60	97
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	71	149	302	54	305	22	252	43	27	27	65	105
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	3
HCM Control Delay	16.7	22.3	20.7	12.7
HCM LOS	C	C	C	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%
Vol Right, %	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	232	40	25	65	137	278	50	281	20	25	60
LT Vol	232	0	0	65	0	0	50	0	0	25	0
Through Vol	0	40	0	0	137	0	0	281	0	0	60
RT Vol	0	0	25	0	0	278	0	0	20	0	0
Lane Flow Rate	252	43	27	71	149	302	54	305	22	27	65
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.598	0.097	0.055	0.16	0.316	0.583	0.126	0.666	0.043	0.068	0.153
Departure Headway (Hd)	8.53	8.03	7.33	8.151	7.651	6.951	8.348	7.848	7.148	8.962	8.462
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	424	445	487	439	469	517	429	458	499	399	423
Service Time	6.299	5.799	5.099	5.915	5.415	4.715	6.115	5.615	4.915	6.739	6.239
HCM Lane V/C Ratio	0.594	0.097	0.055	0.162	0.318	0.584	0.126	0.666	0.044	0.068	0.154
HCM Control Delay	23.3	11.7	10.5	12.5	13.9	19.1	12.3	25	10.2	12.4	12.8
HCM Lane LOS	C	B	B	B	B	C	B	C	B	B	B
HCM 95th-tile Q	3.8	0.3	0.2	0.6	1.3	3.7	0.4	4.8	0.1	0.2	0.5

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	522	381	322	197
Demand Flow Rate, veh/h	532	388	329	201
Vehicles Circulating, veh/h	149	373	252	623
Vehicles Exiting, veh/h	675	208	429	138
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	7.8	8.6	6.5	8.3
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	532	388	329	201
Cap Entry Lane, veh/h	1185	943	1067	731
Entry HV Adj Factor	0.981	0.982	0.979	0.979
Flow Entry, veh/h	522	381	322	197
Cap Entry, veh/h	1163	926	1045	715
V/C Ratio	0.449	0.411	0.308	0.275
Control Delay, s/veh	7.8	8.6	6.5	8.3
LOS	A	A	A	A
95th %tile Queue, veh	2	2	1	1

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	446	572	374	237	529	311
Future Volume (vph)	446	572	374	237	529	311
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		500	800		0	0
Storage Lanes		1	1		1	1
Taper Length (ft)			300		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted			0.439		0.950	
Satd. Flow (perm)	1863	1583	818	1863	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						299
Link Speed (mph)	65			65	30	
Link Distance (ft)	850			1850	759	
Travel Time (s)	8.9			19.4	17.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.85	0.85
Adj. Flow (vph)	485	622	407	258	622	366
Shared Lane Traffic (%)						
Lane Group Flow (vph)	485	622	407	258	622	366
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	L NA	Right	Left	Left	Left	R NA
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (ft)	100	20	20	100	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	6	20	20	6	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	pm+ov	Perm	NA	Prot	Perm
Protected Phases	4	2		8	2	
Permitted Phases		4	8			2

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	4	2	8	8	2	2
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	72.0	28.0	72.0	72.0	28.0	28.0
Total Split (%)	72.0%	28.0%	72.0%	72.0%	28.0%	28.0%
Maximum Green (s)	66.0	22.0	66.0	66.0	22.0	22.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Max	Max	None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	66.0	100.0	66.0	66.0	22.0	22.0
Actuated g/C Ratio	0.66	1.00	0.66	0.66	0.22	0.22
v/c Ratio	0.39	0.39	0.76	0.21	1.60	0.63
Control Delay	9.0	0.7	22.8	7.2	310.7	13.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.0	0.7	22.8	7.2	310.7	13.0
LOS	A	A	C	A	F	B
Approach Delay	4.3			16.8	200.4	
Approach LOS	A			B	F	

Intersection Summary	
Area Type: Other	
Cycle Length: 100	
Actuated Cycle Length: 100	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.60	
Intersection Signal Delay: 77.5	Intersection LOS: E
Intersection Capacity Utilization 88.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 1: W Access & SH 94

Intersection	
Int Delay, s/veh	0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↱		↑		↱
Traffic Vol, veh/h	609	164	0	617	0	76
Future Vol, veh/h	609	164	0	617	0	76
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	500	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	662	178	0	671	0	89

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	662
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	-	0	-	0	462
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	462
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	14.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	462	-	-	-
HCM Lane V/C Ratio	0.194	-	-	-
HCM Control Delay (s)	14.7	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.7	-	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	446	572	374	237	529	311
Future Volume (vph)	446	572	374	237	529	311
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		500	800		0	0
Storage Lanes		1	1		2	1
Taper Length (ft)			300		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1863	1583	1770	1863	3433	1583
Flt Permitted			0.440		0.950	
Satd. Flow (perm)	1863	1583	820	1863	3433	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						366
Link Speed (mph)	65			65	30	
Link Distance (ft)	850			1850	759	
Travel Time (s)	8.9			19.4	17.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.85	0.85
Adj. Flow (vph)	485	622	407	258	622	366
Shared Lane Traffic (%)						
Lane Group Flow (vph)	485	622	407	258	622	366
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	L NA	Right	Left	Left	Left	R NA
Median Width(ft)	0			12	24	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (ft)	100	20	20	100	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	6	20	20	6	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	pm+ov	Perm	NA	Prot	Perm
Protected Phases	4	2		8	2	
Permitted Phases		4	8			2

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	4	2	8	8	2	2
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	72.0	28.0	72.0	72.0	28.0	28.0
Total Split (%)	72.0%	28.0%	72.0%	72.0%	28.0%	28.0%
Maximum Green (s)	66.0	22.0	66.0	66.0	22.0	22.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Max	Max	None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	66.0	99.5	66.0	66.0	21.5	21.5
Actuated g/C Ratio	0.66	1.00	0.66	0.66	0.22	0.22
v/c Ratio	0.39	0.39	0.75	0.21	0.84	0.58
Control Delay	8.8	0.7	22.3	7.1	48.9	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.8	0.7	22.3	7.1	48.9	7.7
LOS	A	A	C	A	D	A
Approach Delay	4.3			16.4	33.6	
Approach LOS	A			B	C	

Intersection Summary	
Area Type: Other	
Cycle Length: 100	
Actuated Cycle Length: 99.5	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 17.7	Intersection LOS: B
Intersection Capacity Utilization 74.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 1: W Access & SH 94

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	106	280	251	25	216	25	304	55	50	50	45	104
Future Volume (vph)	106	280	251	25	216	25	304	55	50	50	45	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	600		500	600		500	678		273	313		273
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	300			300			222			162		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.612			0.575			0.725			0.718		
Satd. Flow (perm)	1140	1863	1583	1071	1863	1583	1350	1863	1583	1337	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			273			55			55			113
Link Speed (mph)		65			65			55			45	
Link Distance (ft)		1080			1976			976			908	
Travel Time (s)		11.3			20.7			12.1			13.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	115	304	273	27	235	27	330	60	54	54	49	113
Shared Lane Traffic (%)												
Lane Group Flow (vph)	115	304	273	27	235	27	330	60	54	54	49	113
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	28.0	28.0	28.0	28.0	28.0	28.0	32.0	32.0	32.0	32.0	32.0	32.0
Total Split (%)	46.7%	46.7%	46.7%	46.7%	46.7%	46.7%	53.3%	53.3%	53.3%	53.3%	53.3%	53.3%
Maximum Green (s)	22.0	22.0	22.0	22.0	22.0	22.0	26.0	26.0	26.0	26.0	26.0	26.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	Min	Min	Min	Min	Min	Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	13.2	13.2	13.2	13.2	13.2	13.2	15.4	15.4	15.4	15.4	15.4	15.4
Actuated g/C Ratio	0.32	0.32	0.32	0.32	0.32	0.32	0.37	0.37	0.37	0.37	0.37	0.37
v/c Ratio	0.32	0.52	0.40	0.08	0.40	0.05	0.66	0.09	0.09	0.11	0.07	0.17
Control Delay	14.7	15.9	4.0	12.0	14.2	2.0	18.5	9.5	3.8	9.9	9.4	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.7	15.9	4.0	12.0	14.2	2.0	18.5	9.5	3.8	9.9	9.4	3.3
LOS	B	B	A	B	B	A	B	A	A	A	A	A
Approach Delay		11.0			12.9			15.5			6.3	
Approach LOS		B			B			B			A	

Intersection Summary	
Area Type: Other	
Cycle Length: 60	
Actuated Cycle Length: 41.5	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 12.0	Intersection LOS: B
Intersection Capacity Utilization 57.4%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 8: N Ellicott Hwy & SH 94

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	833	25	53	597	125	15	10	55	147	15	20
Future Volume (vph)	20	833	25	53	597	125	15	10	55	147	15	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	600		500	600		500	403		378	403		378
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	300			300			222			222		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.873			0.913	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1626	0	1770	1701	0
Flt Permitted	0.313			0.143			0.732			0.711		
Satd. Flow (perm)	583	1863	1583	266	1863	1583	1364	1626	0	1324	1701	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			27			136		60			22	
Link Speed (mph)		65			65			55			55	
Link Distance (ft)		2617			4568			1929			1689	
Travel Time (s)		27.5			47.9			23.9			20.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	905	27	58	649	136	16	11	60	160	16	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	22	905	27	58	649	136	16	71	0	160	38	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5		22.5	22.5	
Total Split (s)	37.0	37.0	37.0	37.0	37.0	37.0	23.0	23.0		23.0	23.0	
Total Split (%)	61.7%	61.7%	61.7%	61.7%	61.7%	61.7%	38.3%	38.3%		38.3%	38.3%	
Maximum Green (s)	32.5	32.5	32.5	32.5	32.5	32.5	18.5	18.5		18.5	18.5	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	Min	Min		Min	Min	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0		0	0	
Act Effct Green (s)	28.0	28.0	28.0	28.0	28.0	28.0	11.5	11.5		11.5	11.5	
Actuated g/C Ratio	0.57	0.57	0.57	0.57	0.57	0.57	0.24	0.24		0.24	0.24	
v/c Ratio	0.07	0.85	0.03	0.38	0.61	0.14	0.05	0.17		0.52	0.09	
Control Delay	6.2	19.7	2.8	15.8	10.4	1.8	15.9	7.4		24.0	10.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	6.2	19.7	2.8	15.8	10.4	1.8	15.9	7.4		24.0	10.5	
LOS	A	B	A	B	B	A	B	A		C	B	
Approach Delay		18.9			9.4			9.0			21.4	
Approach LOS		B			A			A			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 48.9	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay: 14.8	Intersection LOS: B
Intersection Capacity Utilization 66.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 26: Peyton Hwy & SH 94

Intersection	
Int Delay, s/veh	0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↱		↑		↱
Traffic Vol, veh/h	609	164	0	617	0	76
Future Vol, veh/h	609	164	0	617	0	76
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	500	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	662	178	0	671	0	89

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	662
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	-	0	-	0	462
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	462
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	14.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	462	-	-	-
HCM Lane V/C Ratio	0.194	-	-	-
HCM Control Delay (s)	14.7	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.7	-	-	-

Intersection	
Int Delay, s/veh	1031.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	446	572	374	0	529	311
Future Vol, veh/h	446	572	374	0	529	311
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	500	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	485	622	407	0	622	366

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1107	0	1299	485
Stage 1	-	-	-	-	485	-
Stage 2	-	-	-	-	814	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	631	-	~ 178	582
Stage 1	-	-	-	-	~ 619	-
Stage 2	-	-	-	-	~ 436	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	631	-	~ 63	582
Mov Cap-2 Maneuver	-	-	-	-	~ 63	-
Stage 1	-	-	-	-	~ 220	-
Stage 2	-	-	-	-	~ 436	-

Approach	EB	WB	NB
HCM Control Delay, s	0	20.4	$ 2602.5
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	63	582	-	-	631	-
HCM Lane V/C Ratio	9.879	0.629	-	-	0.644	-
HCM Control Delay (s)	$ 4120.1	21.1	-	-	20.4	0
HCM Lane LOS	F	C	-	-	C	A
HCM 95th %tile Q(veh)	73.1	4.4	-	-	4.7	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↱		↑		↱
Traffic Vol, veh/h	609	164	0	617	0	76
Future Vol, veh/h	609	164	0	617	0	76
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	500	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	662	178	0	671	0	89

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	662
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	-	0	-	0	462
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	462
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	14.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	462	-	-	-
HCM Lane V/C Ratio	0.194	-	-	-
HCM Control Delay (s)	14.7	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.7	-	-	-

Intersection	
Int Delay, s/veh	116.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	106	280	251	25	216	25	304	55	50	50	45	104
Future Vol, veh/h	106	280	251	25	216	25	304	55	50	50	45	104
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	600	-	500	600	-	500	678	-	273	313	-	273
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	115	304	273	27	235	27	330	60	54	54	49	113

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	262	0	0	577	0	0	918	850	304	1017	1096	235
Stage 1	-	-	-	-	-	-	534	534	-	289	289	-
Stage 2	-	-	-	-	-	-	384	316	-	728	807	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1302	-	-	996	-	-	~ 252	298	736	216	213	804
Stage 1	-	-	-	-	-	-	530	524	-	719	673	-
Stage 2	-	-	-	-	-	-	639	655	-	415	394	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1302	-	-	996	-	-	~ 159	264	736	151	189	804
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 159	264	-	151	189	-
Stage 1	-	-	-	-	-	-	483	478	-	656	655	-
Stage 2	-	-	-	-	-	-	494	637	-	307	359	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.3	0.8	$ 415.4	22.7
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	159	264	736	1302	-	-	996	-	-	151	189	804
HCM Lane V/C Ratio	2.078	0.226	0.074	0.088	-	-	0.027	-	-	0.36	0.259	0.141
HCM Control Delay (s)	$ 553.1	22.6	10.3	8	-	-	8.7	-	-	41.7	30.6	10.2
HCM Lane LOS	F	C	B	A	-	-	A	-	-	E	D	B
HCM 95th %tile Q(veh)	26.2	0.8	0.2	0.3	-	-	0.1	-	-	1.5	1	0.5

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	108.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	833	25	53	597	125	15	10	55	147	15	20
Future Vol, veh/h	20	833	25	53	597	125	15	10	55	147	15	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	600	-	500	600	-	500	403	-	-	403	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	905	27	58	649	136	16	11	60	160	16	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	785	0	0	932	0	0	1801	1850	905	1763	1741	649
Stage 1	-	-	-	-	-	-	949	949	-	765	765	-
Stage 2	-	-	-	-	-	-	852	901	-	998	976	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	834	-	-	734	-	-	62	74	335	~ 66	87	470
Stage 1	-	-	-	-	-	-	313	339	-	396	412	-
Stage 2	-	-	-	-	-	-	354	357	-	294	329	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	834	-	-	734	-	-	46	66	335	~ 44	78	470
Mov Cap-2 Maneuver	-	-	-	-	-	-	46	66	-	~ 44	78	-
Stage 1	-	-	-	-	-	-	305	330	-	386	379	-
Stage 2	-	-	-	-	-	-	298	329	-	227	320	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.7	48.2	$ 1117.6
HCM LOS			E	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	46	206	834	-	-	734	-	-	44	149
HCM Lane V/C Ratio	0.354	0.343	0.026	-	-	0.078	-	-	3.631	0.255
HCM Control Delay (s)	121.3	31.3	9.4	-	-	10.3	-	-	$ 1374.8	37.3
HCM Lane LOS	F	D	A	-	-	B	-	-	F	E
HCM 95th %tile Q(veh)	1.2	1.4	0.1	-	-	0.3	-	-	17.8	1

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Intersection Delay, s/veh	24.4
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	106	280	251	25	216	25	304	55	50	50	45	104
Future Vol, veh/h	106	280	251	25	216	25	304	55	50	50	45	104
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	115	304	273	27	235	27	330	60	54	54	49	113
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	3
HCM Control Delay	22	21.5	35.1	14.2
HCM LOS	C	C	E	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%
Vol Right, %	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	304	55	50	106	280	251	25	216	25	50	45
LT Vol	304	0	0	106	0	0	25	0	0	50	0
Through Vol	0	55	0	0	280	0	0	216	0	0	45
RT Vol	0	0	50	0	0	251	0	0	25	0	0
Lane Flow Rate	330	60	54	115	304	273	27	235	27	54	49
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.829	0.142	0.118	0.277	0.689	0.565	0.071	0.584	0.062	0.148	0.126
Departure Headway (Hd)	9.032	8.532	7.832	8.651	8.151	7.451	9.462	8.962	8.262	9.771	9.271
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	403	422	459	417	444	486	379	404	433	367	387
Service Time	6.753	6.253	5.553	6.371	5.871	5.171	7.216	6.716	6.016	7.522	7.022
HCM Lane V/C Ratio	0.819	0.142	0.118	0.276	0.685	0.562	0.071	0.582	0.062	0.147	0.127
HCM Control Delay	43	12.7	11.6	14.7	27.1	19.4	12.9	23.6	11.6	14.2	13.4
HCM Lane LOS	E	B	B	B	D	C	B	C	B	B	B
HCM 95th-tile Q	7.7	0.5	0.4	1.1	5.1	3.4	0.2	3.6	0.2	0.5	0.4

Intersection	
Intersection Delay, s/veh	10.2
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	692	289	444	216
Demand Flow Rate, veh/h	705	296	453	220
Vehicles Circulating, veh/h	133	515	482	605
Vehicles Exiting, veh/h	692	420	356	206
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	10.2	8.9	12.0	8.5
Approach LOS	B	A	B	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	705	296	453	220
Cap Entry Lane, veh/h	1205	816	844	744
Entry HV Adj Factor	0.981	0.977	0.980	0.982
Flow Entry, veh/h	692	289	444	216
Cap Entry, veh/h	1182	798	827	731
V/C Ratio	0.585	0.363	0.537	0.296
Control Delay, s/veh	10.2	8.9	12.0	8.5
LOS	B	A	B	A
95th %tile Queue, veh	4	2	3	1

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	522	381	322	197
Demand Flow Rate, veh/h	532	388	329	201
Vehicles Circulating, veh/h	149	373	252	623
Vehicles Exiting, veh/h	675	208	429	138
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	7.8	8.6	6.5	8.3
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	532	388	329	201
Cap Entry Lane, veh/h	1185	943	1067	731
Entry HV Adj Factor	0.981	0.982	0.979	0.979
Flow Entry, veh/h	522	381	322	197
Cap Entry, veh/h	1163	926	1045	715
V/C Ratio	0.449	0.411	0.308	0.275
Control Delay, s/veh	7.8	8.6	6.5	8.3
LOS	A	A	A	A
95th %tile Queue, veh	2	2	1	1

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	522	381	322	197
Demand Flow Rate, veh/h	532	388	329	201
Vehicles Circulating, veh/h	149	373	252	623
Vehicles Exiting, veh/h	675	208	429	138
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	7.8	8.6	6.5	8.3
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	532	388	329	201
Cap Entry Lane, veh/h	1185	943	1067	731
Entry HV Adj Factor	0.981	0.982	0.979	0.979
Flow Entry, veh/h	522	381	322	197
Cap Entry, veh/h	1163	926	1045	715
V/C Ratio	0.449	0.411	0.308	0.275
Control Delay, s/veh	7.8	8.6	6.5	8.3
LOS	A	A	A	A
95th %tile Queue, veh	2	2	1	1

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	285	267	249	349	540	127
Future Volume (vph)	285	267	249	349	540	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		500	800		0	0
Storage Lanes		1	1		1	1
Taper Length (ft)			300		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted			0.562		0.950	
Satd. Flow (perm)	1863	1583	1047	1863	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						119
Link Speed (mph)	65			65	30	
Link Distance (ft)	850			1340	759	
Travel Time (s)	8.9			14.1	17.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.85	0.85
Adj. Flow (vph)	310	290	271	379	635	149
Shared Lane Traffic (%)						
Lane Group Flow (vph)	310	290	271	379	635	149
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	L NA	Right	Left	Left	Left	R NA
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (ft)	100	20	20	100	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	6	20	20	6	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	pm+ov	Perm	NA	Prot	Perm
Protected Phases	4	2		8	2	
Permitted Phases		4	8			2

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	4	2	8	8	2	2
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	72.0	28.0	72.0	72.0	28.0	28.0
Total Split (%)	72.0%	28.0%	72.0%	72.0%	28.0%	28.0%
Maximum Green (s)	66.0	22.0	66.0	66.0	22.0	22.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	Max	Max	Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	66.0	100.0	66.0	66.0	22.0	22.0
Actuated g/C Ratio	0.66	1.00	0.66	0.66	0.22	0.22
v/c Ratio	0.25	0.18	0.39	0.31	1.63	0.34
Control Delay	7.6	0.3	9.8	8.1	324.9	11.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.6	0.3	9.8	8.1	324.9	11.8
LOS	A	A	A	A	F	B
Approach Delay	4.0			8.8	265.4	
Approach LOS	A			A	F	

Intersection Summary	
Area Type: Other	
Cycle Length: 100	
Actuated Cycle Length: 100	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.63	
Intersection Signal Delay: 106.3	Intersection LOS: F
Intersection Capacity Utilization 73.7%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 1: W Access & SH 94

Intersection	
Int Delay, s/veh	1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↱		↑		↱
Traffic Vol, veh/h	326	99	0	624	0	132
Future Vol, veh/h	326	99	0	624	0	132
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	500	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	354	108	0	678	0	155

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	354
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	-	0	-	0	690
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	690
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	690	-	-	-
HCM Lane V/C Ratio	0.225	-	-	-
HCM Control Delay (s)	11.7	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.9	-	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	285	267	249	349	540	127
Future Volume (vph)	285	267	249	349	540	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		500	800		0	0
Storage Lanes		1	1		2	1
Taper Length (ft)			300		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1863	1583	1770	1863	3433	1583
Flt Permitted			0.562		0.950	
Satd. Flow (perm)	1863	1583	1047	1863	3433	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						149
Link Speed (mph)	65			65	30	
Link Distance (ft)	850			1340	759	
Travel Time (s)	8.9			14.1	17.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.85	0.85
Adj. Flow (vph)	310	290	271	379	635	149
Shared Lane Traffic (%)						
Lane Group Flow (vph)	310	290	271	379	635	149
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	L NA	Right	Left	Left	Left	R NA
Median Width(ft)	0			12	24	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (ft)	100	20	20	100	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	6	20	20	6	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	pm+ov	Perm	NA	Prot	Perm
Protected Phases	4	2		8	2	
Permitted Phases		4	8			2

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	4	2	8	8	2	2
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	72.0	28.0	72.0	72.0	28.0	28.0
Total Split (%)	72.0%	28.0%	72.0%	72.0%	28.0%	28.0%
Maximum Green (s)	66.0	22.0	66.0	66.0	22.0	22.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	Max	Max	Max
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	66.0	100.0	66.0	66.0	22.0	22.0
Actuated g/C Ratio	0.66	1.00	0.66	0.66	0.22	0.22
v/c Ratio	0.25	0.18	0.39	0.31	0.84	0.32
Control Delay	7.6	0.3	9.8	8.1	48.9	7.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.6	0.3	9.8	8.1	48.9	7.5
LOS	A	A	A	A	D	A
Approach Delay	4.0			8.8	41.0	
Approach LOS	A			A	D	

Intersection Summary	
Area Type: Other	
Cycle Length: 100	
Actuated Cycle Length: 100	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 19.8	Intersection LOS: B
Intersection Capacity Utilization 59.2%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: W Access & SH 94

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	137	278	50	281	20	232	40	25	25	60	97
Future Volume (vph)	65	137	278	50	281	20	232	40	25	25	60	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	600		500	600		500	678		273	313		273
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	300			300			222			162		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.574			0.662			0.715			0.729		
Satd. Flow (perm)	1069	1863	1583	1233	1863	1583	1332	1863	1583	1358	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			302			55			55			105
Link Speed (mph)		65			65			55			45	
Link Distance (ft)		1080			1976			976			908	
Travel Time (s)		11.3			20.7			12.1			13.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	71	149	302	54	305	22	252	43	27	27	65	105
Shared Lane Traffic (%)												
Lane Group Flow (vph)	71	149	302	54	305	22	252	43	27	27	65	105
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	28.0	28.0	28.0	28.0	28.0	28.0	32.0	32.0	32.0	32.0	32.0	32.0
Total Split (%)	46.7%	46.7%	46.7%	46.7%	46.7%	46.7%	53.3%	53.3%	53.3%	53.3%	53.3%	53.3%
Maximum Green (s)	22.0	22.0	22.0	22.0	22.0	22.0	26.0	26.0	26.0	26.0	26.0	26.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	Min	Min	Min	Min	Min	Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	11.8	11.8	11.8	11.8	11.8	11.8	12.7	12.7	12.7	12.7	12.7	12.7
Actuated g/C Ratio	0.32	0.32	0.32	0.32	0.32	0.32	0.34	0.34	0.34	0.34	0.34	0.34
v/c Ratio	0.21	0.25	0.43	0.14	0.52	0.04	0.55	0.07	0.05	0.06	0.10	0.17
Control Delay	12.2	11.6	4.0	11.2	14.7	1.4	15.6	9.1	1.7	9.2	9.2	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.2	11.6	4.0	11.2	14.7	1.4	15.6	9.1	1.7	9.2	9.2	3.4
LOS	B	B	A	B	B	A	B	A	A	A	A	A
Approach Delay		7.3			13.5			13.5			6.1	
Approach LOS		A			B			B			A	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 37.2	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.55	
Intersection Signal Delay: 10.2	Intersection LOS: B
Intersection Capacity Utilization 53.5%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 8: N Ellicott Hwy & SH 94

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	406	10	36	780	114	35	15	50	93	15	35
Future Volume (vph)	10	406	10	36	780	114	35	15	50	93	15	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	600		500	600		500	403		378	403		378
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	300			300			222			222		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.884			0.894	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1647	0	1770	1665	0
Flt Permitted	0.186			0.480			0.722			0.711		
Satd. Flow (perm)	346	1863	1583	894	1863	1583	1345	1647	0	1324	1665	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			27			124		54			38	
Link Speed (mph)		65			65			55			55	
Link Distance (ft)		2617			4568			1929			1689	
Travel Time (s)		27.5			47.9			23.9			20.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	441	11	39	848	124	38	16	54	101	16	38
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	441	11	39	848	124	38	70	0	101	54	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5		22.5	22.5	
Total Split (s)	37.0	37.0	37.0	37.0	37.0	37.0	23.0	23.0		23.0	23.0	
Total Split (%)	61.7%	61.7%	61.7%	61.7%	61.7%	61.7%	38.3%	38.3%		38.3%	38.3%	
Maximum Green (s)	32.5	32.5	32.5	32.5	32.5	32.5	18.5	18.5		18.5	18.5	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	Min	Min		Min	Min	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0		0	0	
Act Effct Green (s)	24.8	24.8	24.8	24.8	24.8	24.8	9.0	9.0		9.0	9.0	
Actuated g/C Ratio	0.57	0.57	0.57	0.57	0.57	0.57	0.21	0.21		0.21	0.21	
v/c Ratio	0.06	0.41	0.01	0.08	0.80	0.13	0.14	0.18		0.37	0.14	
Control Delay	5.2	6.6	1.0	4.8	14.6	1.5	17.5	8.9		21.0	9.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	5.2	6.6	1.0	4.8	14.6	1.5	17.5	8.9		21.0	9.8	
LOS	A	A	A	A	B	A	B	A		C	A	
Approach Delay		6.5			12.6			11.9			17.1	
Approach LOS		A			B			B			B	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 43.4	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 11.3	Intersection LOS: B
Intersection Capacity Utilization 60.4%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 26: Peyton Hwy & SH 94

Intersection	
Int Delay, s/veh	1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↱		↑		↱
Traffic Vol, veh/h	326	99	0	624	0	132
Future Vol, veh/h	326	99	0	624	0	132
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	500	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	354	108	0	678	0	155

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	354
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	-	0	-	0	690
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	690
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	690	-	-	-
HCM Lane V/C Ratio	0.225	-	-	-
HCM Control Delay (s)	11.7	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.9	-	-	-

Intersection	
Int Delay, s/veh	305.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	285	267	249	0	540	127
Future Vol, veh/h	285	267	249	0	540	127
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	500	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	310	290	271	0	635	149

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	600	0	852	310
Stage 1	-	-	-	-	310	-
Stage 2	-	-	-	-	542	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	977	-	~ 330	730
Stage 1	-	-	-	-	744	-
Stage 2	-	-	-	-	~ 583	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	977	-	~ 239	730
Mov Cap-2 Maneuver	-	-	-	-	~ 239	-
Stage 1	-	-	-	-	~ 538	-
Stage 2	-	-	-	-	~ 583	-

Approach	EB	WB	NB
HCM Control Delay, s	0	10.1	$ 641.4
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	239	730	-	-	977	-
HCM Lane V/C Ratio	2.658	0.205	-	-	0.277	-
HCM Control Delay (s)	$ 789.6	11.2	-	-	10.1	0
HCM Lane LOS	F	B	-	-	B	A
HCM 95th %tile Q(veh)	54	0.8	-	-	1.1	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↱		↑		↱
Traffic Vol, veh/h	326	99	0	624	0	132
Future Vol, veh/h	326	99	0	624	0	132
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	500	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	354	108	0	678	0	155

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	354
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	-	0	-	0	690
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	690
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	690	-	-	-
HCM Lane V/C Ratio	0.225	-	-	-
HCM Control Delay (s)	11.7	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.9	-	-	-

Intersection	
Int Delay, s/veh	47.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	65	137	278	50	281	20	232	40	25	25	60	97
Future Vol, veh/h	65	137	278	50	281	20	232	40	25	25	60	97
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	600	-	500	600	-	500	678	-	273	313	-	273
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	71	149	302	54	305	22	252	43	27	27	65	105

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	327	0	0	451	0	0	800	726	149	890	1006	305
Stage 1	-	-	-	-	-	-	291	291	-	413	413	-
Stage 2	-	-	-	-	-	-	509	435	-	477	593	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1233	-	-	1109	-	-	303	351	898	264	241	735
Stage 1	-	-	-	-	-	-	717	672	-	616	594	-
Stage 2	-	-	-	-	-	-	547	580	-	569	493	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1233	-	-	1109	-	-	~ 184	314	898	211	216	735
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 184	314	-	211	216	-
Stage 1	-	-	-	-	-	-	675	633	-	580	565	-
Stage 2	-	-	-	-	-	-	394	552	-	484	464	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.1	1.2	195.2	18.5
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	184	314	898	1233	-	-	1109	-	-	211	216	735
HCM Lane V/C Ratio	1.371	0.138	0.03	0.057	-	-	0.049	-	-	0.129	0.302	0.143
HCM Control Delay (s)	245.8	18.3	9.1	8.1	-	-	8.4	-	-	24.6	28.7	10.7
HCM Lane LOS	F	C	A	A	-	-	A	-	-	C	D	B
HCM 95th %tile Q(veh)	14.9	0.5	0.1	0.2	-	-	0.2	-	-	0.4	1.2	0.5

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	17.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	406	10	36	780	114	35	15	50	93	15	35
Future Vol, veh/h	10	406	10	36	780	114	35	15	50	93	15	35
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	600	-	500	600	-	500	403	-	-	403	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	441	11	39	848	124	38	16	54	101	16	38

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	972	0	0	452	0	0	1478	1513	441	1430	1400	848
Stage 1	-	-	-	-	-	-	463	463	-	926	926	-
Stage 2	-	-	-	-	-	-	1015	1050	-	504	474	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	709	-	-	1109	-	-	104	120	616	112	140	361
Stage 1	-	-	-	-	-	-	579	564	-	322	347	-
Stage 2	-	-	-	-	-	-	287	304	-	550	558	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	709	-	-	1109	-	-	81	114	616	~ 87	133	361
Mov Cap-2 Maneuver	-	-	-	-	-	-	81	114	-	~ 87	133	-
Stage 1	-	-	-	-	-	-	570	555	-	317	335	-
Stage 2	-	-	-	-	-	-	236	293	-	479	549	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.3	42.5	160.9
HCM LOS			E	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	81	306	709	-	-	1109	-	-	87	238
HCM Lane V/C Ratio	0.47	0.231	0.015	-	-	0.035	-	-	1.162	0.228
HCM Control Delay (s)	83.8	20.3	10.2	-	-	8.4	-	-	234.3	24.5
HCM Lane LOS	F	C	B	-	-	A	-	-	F	C
HCM 95th %tile Q(veh)	1.9	0.9	0	-	-	0.1	-	-	7.1	0.9

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Intersection Delay, s/veh	18.6
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	65	137	278	50	281	20	232	40	25	25	60	97
Future Vol, veh/h	65	137	278	50	281	20	232	40	25	25	60	97
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	71	149	302	54	305	22	252	43	27	27	65	105
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	3
HCM Control Delay	16.7	22.3	20.7	12.7
HCM LOS	C	C	C	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%
Vol Right, %	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	232	40	25	65	137	278	50	281	20	25	60
LT Vol	232	0	0	65	0	0	50	0	0	25	0
Through Vol	0	40	0	0	137	0	0	281	0	0	60
RT Vol	0	0	25	0	0	278	0	0	20	0	0
Lane Flow Rate	252	43	27	71	149	302	54	305	22	27	65
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.598	0.097	0.055	0.16	0.316	0.583	0.126	0.666	0.043	0.068	0.153
Departure Headway (Hd)	8.53	8.03	7.33	8.151	7.651	6.951	8.348	7.848	7.148	8.962	8.462
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	424	445	487	439	469	517	429	458	499	399	423
Service Time	6.299	5.799	5.099	5.915	5.415	4.715	6.115	5.615	4.915	6.739	6.239
HCM Lane V/C Ratio	0.594	0.097	0.055	0.162	0.318	0.584	0.126	0.666	0.044	0.068	0.154
HCM Control Delay	23.3	11.7	10.5	12.5	13.9	19.1	12.3	25	10.2	12.4	12.8
HCM Lane LOS	C	B	B	B	B	C	B	C	B	B	B
HCM 95th-tile Q	3.8	0.3	0.2	0.6	1.3	3.7	0.4	4.8	0.1	0.2	0.5

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	522	381	322	197
Demand Flow Rate, veh/h	532	388	329	201
Vehicles Circulating, veh/h	149	373	252	623
Vehicles Exiting, veh/h	675	208	429	138
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	7.8	8.6	6.5	8.3
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	532	388	329	201
Cap Entry Lane, veh/h	1185	943	1067	731
Entry HV Adj Factor	0.981	0.982	0.979	0.979
Flow Entry, veh/h	522	381	322	197
Cap Entry, veh/h	1163	926	1045	715
V/C Ratio	0.449	0.411	0.308	0.275
Control Delay, s/veh	7.8	8.6	6.5	8.3
LOS	A	A	A	A
95th %tile Queue, veh	2	2	1	1

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	461	572	395	227	575	311
Future Volume (vph)	461	572	395	227	575	311
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		500	800		0	0
Storage Lanes		1	1		1	1
Taper Length (ft)			300		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted			0.428		0.950	
Satd. Flow (perm)	1863	1583	797	1863	1770	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						275
Link Speed (mph)	65			65	30	
Link Distance (ft)	850			1850	759	
Travel Time (s)	8.9			19.4	17.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.85	0.85
Adj. Flow (vph)	501	622	429	247	676	366
Shared Lane Traffic (%)						
Lane Group Flow (vph)	501	622	429	247	676	366
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	L NA	Right	Left	Left	Left	R NA
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (ft)	100	20	20	100	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	6	20	20	6	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	pm+ov	Perm	NA	Prot	Perm
Protected Phases	4	2		8	2	
Permitted Phases		4	8			2

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	4	2	8	8	2	2
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	72.0	28.0	72.0	72.0	28.0	28.0
Total Split (%)	72.0%	28.0%	72.0%	72.0%	28.0%	28.0%
Maximum Green (s)	66.0	22.0	66.0	66.0	22.0	22.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Max	Max	None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	66.0	100.0	66.0	66.0	22.0	22.0
Actuated g/C Ratio	0.66	1.00	0.66	0.66	0.22	0.22
v/c Ratio	0.41	0.39	0.82	0.20	1.74	0.65
Control Delay	9.1	0.7	27.9	7.2	370.1	15.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.1	0.7	27.9	7.2	370.1	15.6
LOS	A	A	C	A	F	B
Approach Delay	4.5			20.3	245.6	
Approach LOS	A			C	F	

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.74	
Intersection Signal Delay: 96.7	Intersection LOS: F
Intersection Capacity Utilization 93.0%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 1: W Access & SH 94

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↱		↑		↱
Traffic Vol, veh/h	594	194	0	628	0	107
Future Vol, veh/h	594	194	0	628	0	107
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	500	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	646	211	0	683	0	126

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	646
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	-	0	-	0	472
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	472
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	15.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	472	-	-	-
HCM Lane V/C Ratio	0.267	-	-	-
HCM Control Delay (s)	15.4	-	-	-
HCM Lane LOS	C	-	-	-
HCM 95th %tile Q(veh)	1.1	-	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	461	572	395	227	575	311
Future Volume (vph)	461	572	395	227	575	311
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		500	800		0	0
Storage Lanes		1	1		2	1
Taper Length (ft)			300		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1863	1583	1770	1863	3433	1583
Flt Permitted			0.428		0.950	
Satd. Flow (perm)	1863	1583	797	1863	3433	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						366
Link Speed (mph)	65			65	30	
Link Distance (ft)	850			1850	759	
Travel Time (s)	8.9			19.4	17.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.85	0.85
Adj. Flow (vph)	501	622	429	247	676	366
Shared Lane Traffic (%)						
Lane Group Flow (vph)	501	622	429	247	676	366
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	L NA	Right	Left	Left	Left	R NA
Median Width(ft)	0			12	24	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (ft)	100	20	20	100	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	6	20	20	6	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	pm+ov	Perm	NA	Prot	Perm
Protected Phases	4	2		8	2	
Permitted Phases		4	8			2

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Detector Phase	4	2	8	8	2	2
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	72.0	28.0	72.0	72.0	28.0	28.0
Total Split (%)	72.0%	28.0%	72.0%	72.0%	28.0%	28.0%
Maximum Green (s)	66.0	22.0	66.0	66.0	22.0	22.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Max	Max	None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	66.0	100.0	66.0	66.0	22.0	22.0
Actuated g/C Ratio	0.66	1.00	0.66	0.66	0.22	0.22
v/c Ratio	0.41	0.39	0.82	0.20	0.90	0.58
Control Delay	9.1	0.7	27.8	7.1	54.2	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.1	0.7	27.8	7.1	54.2	7.7
LOS	A	A	C	A	D	A
Approach Delay	4.5			20.3	37.8	
Approach LOS	A			C	D	

Intersection Summary	
Area Type: Other	
Cycle Length: 100	
Actuated Cycle Length: 100	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 20.5	Intersection LOS: C
Intersection Capacity Utilization 77.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 1: W Access & SH 94

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	137	278	50	281	20	232	40	25	25	60	97
Future Volume (vph)	65	137	278	50	281	20	232	40	25	25	60	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	600		500	600		500	678		273	313		273
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	300			300			222			162		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.574			0.662			0.715			0.729		
Satd. Flow (perm)	1069	1863	1583	1233	1863	1583	1332	1863	1583	1358	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			302			55			55			105
Link Speed (mph)		65			65			55			45	
Link Distance (ft)		1080			1976			976			908	
Travel Time (s)		11.3			20.7			12.1			13.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	71	149	302	54	305	22	252	43	27	27	65	105
Shared Lane Traffic (%)												
Lane Group Flow (vph)	71	149	302	54	305	22	252	43	27	27	65	105
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	28.0	28.0	28.0	28.0	28.0	28.0	32.0	32.0	32.0	32.0	32.0	32.0
Total Split (%)	46.7%	46.7%	46.7%	46.7%	46.7%	46.7%	53.3%	53.3%	53.3%	53.3%	53.3%	53.3%
Maximum Green (s)	22.0	22.0	22.0	22.0	22.0	22.0	26.0	26.0	26.0	26.0	26.0	26.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	Min	Min	Min	Min	Min	Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	11.8	11.8	11.8	11.8	11.8	11.8	12.7	12.7	12.7	12.7	12.7	12.7
Actuated g/C Ratio	0.32	0.32	0.32	0.32	0.32	0.32	0.34	0.34	0.34	0.34	0.34	0.34
v/c Ratio	0.21	0.25	0.43	0.14	0.52	0.04	0.55	0.07	0.05	0.06	0.10	0.17
Control Delay	12.2	11.6	4.0	11.2	14.7	1.4	15.6	9.1	1.7	9.2	9.2	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.2	11.6	4.0	11.2	14.7	1.4	15.6	9.1	1.7	9.2	9.2	3.4
LOS	B	B	A	B	B	A	B	A	A	A	A	A
Approach Delay		7.3			13.5			13.5			6.1	
Approach LOS		A			B			B			A	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 37.2	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.55	
Intersection Signal Delay: 10.2	Intersection LOS: B
Intersection Capacity Utilization 53.5%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 8: N Ellicott Hwy & SH 94

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	841	25	56	621	133	15	10	56	152	15	20
Future Volume (vph)	20	841	25	56	621	133	15	10	56	152	15	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	600		500	600		500	403		378	403		378
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	300			300			222			222		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.873			0.913	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1626	0	1770	1701	0
Flt Permitted	0.294			0.141			0.732			0.710		
Satd. Flow (perm)	548	1863	1583	263	1863	1583	1364	1626	0	1323	1701	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			27			145		61			22	
Link Speed (mph)		65			65			55			55	
Link Distance (ft)		2617			4568			1929			1689	
Travel Time (s)		27.5			47.9			23.9			20.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	914	27	61	675	145	16	11	61	165	16	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	22	914	27	61	675	145	16	72	0	165	38	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5		22.5	22.5	
Total Split (s)	37.0	37.0	37.0	37.0	37.0	37.0	23.0	23.0		23.0	23.0	
Total Split (%)	61.7%	61.7%	61.7%	61.7%	61.7%	61.7%	38.3%	38.3%		38.3%	38.3%	
Maximum Green (s)	32.5	32.5	32.5	32.5	32.5	32.5	18.5	18.5		18.5	18.5	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	Min	Min		Min	Min	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0		0	0	
Act Effct Green (s)	28.3	28.3	28.3	28.3	28.3	28.3	11.7	11.7		11.7	11.7	
Actuated g/C Ratio	0.57	0.57	0.57	0.57	0.57	0.57	0.24	0.24		0.24	0.24	
v/c Ratio	0.07	0.86	0.03	0.41	0.63	0.15	0.05	0.17		0.53	0.09	
Control Delay	6.4	20.4	2.8	17.2	11.0	1.8	15.8	7.4		24.3	10.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	6.4	20.4	2.8	17.2	11.0	1.8	15.8	7.4		24.3	10.4	
LOS	A	C	A	B	B	A	B	A		C	B	
Approach Delay		19.6			9.9			8.9			21.7	
Approach LOS		B			A			A			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 49.4	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 15.3	Intersection LOS: B
Intersection Capacity Utilization 69.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 26: Peyton Hwy & SH 94

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↱		↑		↱
Traffic Vol, veh/h	594	194	0	628	0	107
Future Vol, veh/h	594	194	0	628	0	107
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	500	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	646	211	0	683	0	126

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	646
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	-	0	-	0	472
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	472
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	15.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	472	-	-	-
HCM Lane V/C Ratio	0.267	-	-	-
HCM Control Delay (s)	15.4	-	-	-
HCM Lane LOS	C	-	-	-
HCM 95th %tile Q(veh)	1.1	-	-	-

Intersection	
Int Delay, s/veh	1485.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	461	572	395	0	575	311
Future Vol, veh/h	461	572	395	0	575	311
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	500	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	501	622	429	0	676	366

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1123	0	1359	501
Stage 1	-	-	-	-	501	-
Stage 2	-	-	-	-	858	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	622	-	~ 164	570
Stage 1	-	-	-	-	~ 609	-
Stage 2	-	-	-	-	~ 415	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	622	-	~ 51	570
Mov Cap-2 Maneuver	-	-	-	-	~ 51	-
Stage 1	-	-	-	-	~ 189	-
Stage 2	-	-	-	-	~ 415	-

Approach	EB	WB	NB
HCM Control Delay, s	0	22.7	$ 3687.3
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	51	570	-	-	622	-
HCM Lane V/C Ratio	13.264	0.642	-	-	0.69	-
HCM Control Delay (s)	$ 5669.8	21.9	-	-	22.7	0
HCM Lane LOS	F	C	-	-	C	A
HCM 95th %tile Q(veh)	81.3	4.6	-	-	5.5	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↱		↑		↱
Traffic Vol, veh/h	594	194	0	628	0	107
Future Vol, veh/h	594	194	0	628	0	107
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	500	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	646	211	0	683	0	126

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	646
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	-	0	-	0	472
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	472
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	15.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	472	-	-	-
HCM Lane V/C Ratio	0.267	-	-	-
HCM Control Delay (s)	15.4	-	-	-
HCM Lane LOS	C	-	-	-
HCM 95th %tile Q(veh)	1.1	-	-	-

Intersection	
Int Delay, s/veh	128.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	110	283	261	25	218	25	311	55	50	50	45	107
Future Vol, veh/h	110	283	261	25	218	25	311	55	50	50	45	107
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	600	-	500	600	-	500	678	-	273	313	-	273
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	120	308	284	27	237	27	338	60	54	54	49	116

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	264	0	0	592	0	0	935	866	308	1038	1123	237
Stage 1	-	-	-	-	-	-	548	548	-	291	291	-
Stage 2	-	-	-	-	-	-	387	318	-	747	832	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1300	-	-	984	-	-	~ 246	291	732	209	206	802
Stage 1	-	-	-	-	-	-	521	517	-	717	672	-
Stage 2	-	-	-	-	-	-	637	654	-	405	384	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1300	-	-	984	-	-	~ 153	257	732	145	182	802
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 153	257	-	145	182	-
Stage 1	-	-	-	-	-	-	473	469	-	651	654	-
Stage 2	-	-	-	-	-	-	490	636	-	297	349	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.4	0.8	$ 462.4	23.4
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	153	257	732	1300	-	-	984	-	-	145	182	802
HCM Lane V/C Ratio	2.209	0.233	0.074	0.092	-	-	0.028	-	-	0.375	0.269	0.145
HCM Control Delay (s)	$ 612.8	23.2	10.3	8.1	-	-	8.8	-	-	44	31.9	10.2
HCM Lane LOS	F	C	B	A	-	-	A	-	-	E	D	B
HCM 95th %tile Q(veh)	27.7	0.9	0.2	0.3	-	-	0.1	-	-	1.6	1	0.5

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	128.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	841	25	56	621	133	15	10	56	152	15	20
Future Vol, veh/h	20	841	25	56	621	133	15	10	56	152	15	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	600	-	500	600	-	500	403	-	-	403	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	914	27	61	675	145	16	11	61	165	16	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	820	0	0	941	0	0	1847	1900	914	1805	1782	675
Stage 1	-	-	-	-	-	-	958	958	-	797	797	-
Stage 2	-	-	-	-	-	-	889	942	-	1008	985	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	809	-	-	729	-	-	57	69	331	~ 61	82	454
Stage 1	-	-	-	-	-	-	309	336	-	380	399	-
Stage 2	-	-	-	-	-	-	338	342	-	290	326	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	809	-	-	729	-	-	41	61	331	~ 40	73	454
Mov Cap-2 Maneuver	-	-	-	-	-	-	41	61	-	~ 40	73	-
Stage 1	-	-	-	-	-	-	301	327	-	370	365	-
Stage 2	-	-	-	-	-	-	282	313	-	223	317	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.7	53.3	$ 1319.2
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	41	198	809	-	-	729	-	-	40	140
HCM Lane V/C Ratio	0.398	0.362	0.027	-	-	0.083	-	-	4.13	0.272
HCM Control Delay (s)	141.9	33.2	9.6	-	-	10.4	-		$ 1613.8	40
HCM Lane LOS	F	D	A	-	-	B	-	-	F	E
HCM 95th %tile Q(veh)	1.4	1.6	0.1	-	-	0.3	-	-	18.9	1

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Intersection Delay, s/veh	25.9
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	110	283	261	25	218	25	311	55	50	50	45	107
Future Vol, veh/h	110	283	261	25	218	25	311	55	50	50	45	107
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	120	308	284	27	237	27	338	60	54	54	49	116
Number of Lanes	1	1	1	1	1	1	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	3
HCM Control Delay	23.1	22.2	38.2	14.4
HCM LOS	C	C	E	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%
Vol Right, %	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	311	55	50	110	283	261	25	218	25	50	45
LT Vol	311	0	0	110	0	0	25	0	0	50	0
Through Vol	0	55	0	0	283	0	0	218	0	0	45
RT Vol	0	0	50	0	0	261	0	0	25	0	0
Lane Flow Rate	338	60	54	120	308	284	27	237	27	54	49
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.855	0.143	0.119	0.291	0.705	0.595	0.072	0.598	0.063	0.149	0.128
Departure Headway (Hd)	9.105	8.605	7.905	8.754	8.254	7.554	9.584	9.084	8.384	9.888	9.388
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	399	417	453	413	440	479	374	398	427	362	382
Service Time	6.856	6.356	5.656	6.454	5.954	5.254	7.341	6.841	6.141	7.647	7.147
HCM Lane V/C Ratio	0.847	0.144	0.119	0.291	0.7	0.593	0.072	0.595	0.063	0.149	0.128
HCM Control Delay	47	12.8	11.7	15	28.4	20.7	13.1	24.5	11.7	14.4	13.5
HCM Lane LOS	E	B	B	B	D	C	B	C	B	B	B
HCM 95th-tile Q	8.2	0.5	0.4	1.2	5.4	3.8	0.2	3.8	0.2	0.5	0.4

Intersection	
Intersection Delay, s/veh	10.6
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	712	291	452	219
Demand Flow Rate, veh/h	726	298	461	223
Vehicles Circulating, veh/h	133	528	491	615
Vehicles Exiting, veh/h	705	424	368	211
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	10.6	9.1	12.4	8.6
Approach LOS	B	A	B	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	726	298	461	223
Cap Entry Lane, veh/h	1205	805	836	737
Entry HV Adj Factor	0.981	0.977	0.980	0.982
Flow Entry, veh/h	712	291	452	219
Cap Entry, veh/h	1181	787	820	724
V/C Ratio	0.603	0.370	0.551	0.303
Control Delay, s/veh	10.6	9.1	12.4	8.6
LOS	B	A	B	A
95th %tile Queue, veh	4	2	3	1

Additional Attachments

TRANSPORTATION
CONSULTANTS, INC.

PHASING SUMMARY

PHASE	ELLICOTT TOWN CENTER		
	RESIDENTIAL (DU)	COMMERCIAL AC.	PROJECTED YEAR
PHASE NO. 1	240	10	2019–2020
PHASE NO. 2	289	0	2021
PHASE NO. 3	137	0	2022
PHASE NO. 4	229	0	2023
PHASE NO. 5	0	17	2024
PHASE NO. 6	94	5	2025
PHASE NO. 7	59	0	2026
TOTAL:	1,048	32	

N

Not to Scale

LSC TRANSPORTATION CONSULTANTS, INC.

Phasing Plan

Ellicott Town Center

Appendix Figure 1

LSC # 174741

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

Table 1
Trip Generation Estimate
Ellicott Town Center

Phase	Land Use Code	Land Use Description	Trip Generation Units	Trip Generation Rates (1): Average Weekday Traffic	Trip Generation Rates (1): Morning Peak Hour In	Trip Generation Rates (1): Morning Peak Hour Out	Trip Generation Rates (1): Afternoon Peak Hour In	Trip Generation Rates (1): Afternoon Peak Hour Out	Total Trips Generated: Average Weekday Traffic	Total Trips Generated: Morning Peak Hour In	Total Trips Generated: Morning Peak Hour Out	Total Trips Generated: Afternoon Peak Hour In	Total Trips Generated: Afternoon Peak Hour Out	Percent Internal Trips	External Trips*: Average Weekday Traffic	External Trips*: Morning Peak Hour In	External Trips*: Morning Peak Hour Out	External Trips*: Afternoon Peak Hour In	External Trips*: Afternoon Peak Hour Out	New Trips Generated: Percent Pass-by Trips (2)	New Trips Generated: Average New Weekday Traffic
1 (Filing 1)	210	Single-Family Detached Housing	98 DU (3)	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 (4)	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
								Total	**26687**	**907**	**1056**	**1341**	**1154**		**24531**	**765**	**912**	**1230**	**1060**		**21467**
Change in	**Trip Generation vs. Previous Submittal (05/31/2014)**								-143	36	42	-87	-74		-328	-37	-21	-84	-69		-60

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.

Date: 07/30/2018

STATE OF COLORADO

Region 2 Traffic Section
905 Erie Ave., P.O. Box 536
Pueblo, Colorado 81002
(719) 546-5407 Fax:(719) 562-5523

DEPARTMENT OF TRANSPORTATION

Permit No. **212012**

August 30, 2012

To: Jeffrey C. Hodsdon
LSC Transportation Consultants
516 North Tejon Street
Colorado Springs, CO 80903

Dear Permittee or Applicant:

1. Please review the attached State Highway Access Permit (Form #101) and all enclosed attachments.
2. If you choose NOT to act on the permit, please return the permit unsigned.
3. If you wish to APPEAL the Terms and Conditions of the permit, please refer to the attached Form 101, Pages 2 and 3 for an explanation of the appeal procedures.
4. If you ACCEPT the Permit and its Terms and Conditions and are authorized to sign as legal owner of the property or as an authorized representative, please sign and date the Access Permit form on the line marked "PERMITTEE". Your signature confirms your agreement to all the listed Terms and Conditions.
5. Provide a check or money order made out to the jurisdiction named on the next line for the amount due.

   Make check or money order payable to: CDOT Amount Due: $ 300.00

6. **You must return the entire Access Permit, including all pages of terms and conditions and all attachments, along with your payment back to the Colorado Department of Transportation (CDOT) at the address noted below. The Department will process and return to you a signed copy of your State Highway Access Permit. You may retain this cover letter for your records.**
7. If you fail to sign and return the attached Access Permit within 60 days of the date of this transmittal letter, Colorado Department of Transportation will consider this permit withdrawn and void.
8. **As described in the attached Terms and Conditions, you must make a written request to obtain a Notice to Proceed. DO NOT begin any work within the State Highway Right-of-Way without a validated Access Permit and Notice to Proceed. Use of this permit without the Colorado Department of Transportation's validation shall be considered a violation of State Law.**

If you have any questions, please call Valerie Sword, Region 2 Access Manager at (719) 546-5407.

Please return Access Permit and attachments to: Valerie Sword
Region 2 Traffic Section
905 Erie Ave., P.O. Box 536
Pueblo, Colorado 81002

COLORADO DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ACCESS PERMIT

CDOT Permit No. **212012**

State Highway No/Mp/Side 94 A / 15.243 / R

Permit fee	Date of transmittal	Region/Section/Patrol	Local Jurisdiction
$300.00	9/4/2012	2 / 04 / Gary Heller/67	El Paso County

The Permittee(s);

Ellicott Towncenter
Simon Malk
12275 El Camino Real, Suite 110
San Diego, CA 92130
858-345-3642

Applicant:

LSC Transportation Consultants
Jeffrey C. Hodsdon
516 North Tejon Street
Colorado Springs, CO 80903
719-633-2868

Ref No.: 2615

is hereby granted permission to have an access to the state highway at the location noted below. The access shall be constructed, maintained and used in accordance with this permit, including the State Highway Access Code and any attachments, terms, conditions and exhibits. This permit may be revoked by the issuing authority if at any time the permitted access and its use violate any parts of this permit. The issuing authority, the Department and their duly appointed agents and employees shall be held harmless against any action for personal injury or property damage sustained by reason of the exercise of the permit.

Location: Physical address shown on application is 22555 SH 94. 3,992 feet west from MP 16, new alignment of Log Road.

Access to Provide Service to:	(Land Use Code:)	(Size or Count)	(Units)
	Single-Family Detached Housing	98	EACH

Additional Information:

PLEASE READ ALL OF THE ATTACHED TERMS AND CONDITIONS:

MUNICIPALITY OR COUNTY APPROVAL

Required only when the appropriate local authority retains issuing authority.

Signature	Print Name	Title	Date

Upon the signing of this permit the permittee agrees to the terms and conditions and referenced attachments contained herein. All construction shall be completed in an expeditious and safe manner and shall be finished within 45 days from Initiation. The permitted access shall be completed in accordance with the terms and conditions of the permit prior to being used.

The permittee shall notify Todd Ausbun with the Colorado Department of Transportation in Pueblo, Colorado at (719) 546-5758, at least 48 hours prior to commencing construction within the State Highway right-of-way.

The person signing as the permittee must be the owner or legal representative of the property served by the permitted access and have full authority to accept the permit and its terms and conditions.

Permittee Signature	Print Name	Date

This permit is not valid until signed by a duly authorized representative of the Department.
COLORADO DEPARTMENT OF TRANSPORTATION

Signature	Print Name	Title	Date (of issue)

Copy Distribution: Required: 1.Region 2.Applicant 3.Staff Access Section 4.Central Files

Make copies as necessary for: Local Authority, MTCE Patrol, Inspector, Traffic Engineer

Previous editions are obsolete and may not be used

The following paragraphs are excerpts of the State Highway Access Code. These are provided for your convenience but do not alleviate compliance with all sections of the Access Code. A copy of the State Highway Access Code is available from your local issuing authority (local government) or the Colorado Department of Transportation (Department). When this permit was issued, the issuing authority made its decision based in part on information submitted by the applicant, on the access category which is assigned to the highway, what alternative access to other public roads and streets is available, and safety and design standards. Changes in use or design not approved by the permit or the issuing authority may cause the revocation or suspension of the permit.

APPEALS

1. Should the permittee or applicant object to the denial of a permit application by the Department or object to any of the terms or conditions of a permit placed there by the Department, the applicant and permittee (appellant) have a right to appeal the decision to the [Transportation] Commission [of Colorado]. To appeal a decision, submit a request for administrative hearing to the Transportation Commission of Colorado within 60 days of transmittal of notice of denial or transmittal of the permit for signature. Submit the request to the Transportation Commission of Colorado, 4201 East Arkansas Avenue, Denver, Colorado 80222-3400. The request shall include reasons for the appeal and may include changes, revisions, or conditions that would be acceptable to the permittee or applicant.

2. Any appeal by the applicant or permittee of action by a local issuing authority shall be filed with the local authority and be consistent with the appeal procedures of the local authority.

3. In submitting the request for administrative hearing, the appellant has the option of including within the appeal a request for a review by the Department's internal administrative review committee pursuant to [Code] subsection 2.10. When such committee review is requested, processing of the appeal for formal administrative hearing, 2.9(5) and (6), shall be suspended until the appellant notifies the Commission to proceed with the administrative hearing, or the appellant submits a request to the Commission or the administrative law judge to withdraw the appeal. The two administrative processes, the internal administrative review committee, and the administrative hearing, may not run concurrently.

4. Regardless of any communications, meetings, administrative reviews or negotiations with the Department or the internal administrative review Committee regarding revisions or objections to the permit or a denial, if the permittee or applicant wishes to appeal the Department's decision to the Commission for a hearing, the appeal must be brought to the Commission within 60 days of transmittal of notice of denial or transmittal of the permit.

PERMIT EXPIRATION

1. A permit shall be considered expired if the access is not under construction within one year of the permit issue date or before the expiration of any authorized extension. When the permittee is unable to commence construction within one year after the permit issue date, the permittee may request a one year extension from the issuing authority. No more than two one-year extensions may be granted under any circumstances. If the access is not under construction within three years from date of issue the permit will be considered expired. Any request for an extension must be in writing and submitted to the issuing authority before the permit expires. The request should state the reasons why the extension is necessary, when construction is anticipated, and include a copy of page 1 (face of permit) of the access permit. Extension approvals shall be in writing. The local issuing authority shall obtain the concurrence of the Department prior to the approval of an extension, and shall notify the Department of all denied extensions within ten days. Any person wishing to reestablish an access permit that has expired may begin again with the application procedures. An approved Notice to Proceed, automatically renews the access permit for the period of the Notice to Proceed.

CONSTRUCTION

1. Construction may not begin until a Notice to Proceed is approved. (Code subsection 2.4]

2. The construction of the access and its appurtenances as required by the terms and conditions of the permit shall be completed at the expense of the permittee except as provided in subsection 2.14. All materials used in the construction of the access within the highway right-of-way or on permanent easements, become public property. Any materials removed from the highway right-of-way will be disposed of only as directed by the Department. All fencing, guard rail, traffic control devices and other equipment and materials removed in the course of access construction shall be given to the Department unless otherwise instructed by the permit or the Department inspector.

3. The permittee shall notify the individual or the office specified on the permit or Notice to Proceed at least two working days prior to any construction within state highway right-of-way. Construction of the access shall not proceed until both the access permit and the Notice to Proceed are issued. The access shall be completed in an expeditious and safe manner and shall be finished within 45 days from initiation of construction within the highway right-of-way. A construction time extension not to exceed 30 working days may be requested from the individual or office specified on the permit.

4. The issuing authority and the Department may inspect the access during construction and upon completion of the access to ensure that all terms and conditions of the permit are met. Inspectors are authorized to enforce the conditions of the permit during construction and to halt any activities within state right-of-way that do not comply with the provisions of the permit, that conflict with concurrent highway construction or maintenance work, that endanger

highway property, natural or cultural resources protected by law, or the health and safety of workers or the public.

5. Prior to using the access, the permittee is required to complete the construction according to the terms and conditions of the permit. Failure by the permittee to abide by all permit terms and conditions shall be sufficient cause for the Department or issuing authority to initiate action to suspend or revoke the permit and close the access. If in the determination of the Department or issuing authority the failure to comply with or complete the construction requirements of the permit create a highway safety hazard, such shall be sufficient cause for the summary suspension of the permit. If the permittee wishes to use the access prior to completion, arrangements must be approved by the issuing authority and Department and included in the permit. The Department or issuing authority may order a halt to any unauthorized use of the access pursuant to statutory and regulatory powers. Reconstruction or improvement of the access may be required when the permittee has failed to meet required specifications of design or materials. If any construction element fails within two years due to improper construction or material specifications, the permittee shall be responsible for all repairs. Failure to make such repairs may result in suspension of the permit and closure of the access.

6. The permittee shall provide construction traffic control devices at all times during access construction, in conformance with the M.U.T.C.D. as required by section 42-4-104, C.R.S., as amended.

7. A utility permit shall be obtained for any utility work within highway right-of-way. Where necessary to remove, relocate, or repair a traffic control device or public or private utilities for the construction of a permitted access, the relocation, removal or repair shall be accomplished by the permittee without cost to the Department or issuing authority, and at the direction of the Department or utility company. Any damage to the state highway or other public right-of-way beyond that which is allowed in the permit shall be repaired immediately. The permittee is responsible for the repair of any utility damaged in the course of access construction, reconstruction or repair.

8. In the event it becomes necessary to remove any right-of-way fence, the posts on either side of the access shall be securely braced with an approved end post before the fence is cut to prevent any slacking of the remaining fence. All posts and wire removed are Department property and shall be turned over to a representative of the Department.

9. The permittee shall ensure that a copy of the permit is available for review at the construction site at all times. The permit may require the contractor to notify the individual or office specified on the permit at any specified phases in construction to allow the field inspector to inspect various aspects of construction such as concrete forms, subbase, base course compaction, and materials specifications. Minor changes and additions may be ordered by the Department or local authority field inspector to meet unanticipated site conditions.

10. Each access shall be constructed in a manner that shall not cause water to enter onto the roadway or shoulder, and shall not interfere with the existing drainage system on the right-of-way or any adopted municipal system and drainage plan.

11. By accepting the permit, permittee agrees to save, indemnify, and hold harmless to the extent allowed by law, the issuing authority, the Department, its officers, and employees from suits, actions, claims of any type or character brought because of injuries or damage sustained by any person resulting from the permittee's use of the access permit during the construction of the access.

CHANGES IN ACCESS USE AND PERMIT VIOLATIONS

1. It is the responsibility of the property owner and permittee to ensure that the use of the access to the property is not in violation of the Code, permit terms and conditions or the Act. The terms and conditions of any permit are binding upon all assigns, successors-in-interest, heirs and occupants. If any significant changes are made or will be made in the use of the property which will affect access operation, traffic volume and or vehicle type, the permittee or property owner shall contact the local issuing authority or the Department to determine if a new access permit and modifications to the access are required.

2. When an access is constructed or used in violation of the Code, section 43-2-147(5)(c), C.R.S., of the Act applies. The Department or issuing authority may summarily suspend an access permit and immediately order closure of the access when its continued use presents an immediate threat to public health, welfare or safety. Summary suspension shall comply with article 4 of title 24, C.R.S.

MAINTENANCE

1. The permittee, his or her heirs, successors-in-interest, assigns, and occupants of the property serviced by the access shall be responsible for meeting the terms and conditions of the permit, the repair and maintenance of the access beyond the edge of the roadway including any cattle guard and gate, and the removal or clearance of snow or ice upon the access even though deposited on the access in the course of Department snow removal operations. Within unincorporated areas the Department will keep access culverts clean as part of maintenance of the highway drainage system. However, the permittee is responsible for the repair and replacement of any access-related culverts within the right-of-way. Within incorporated areas, drainage responsibilities for municipalities are determined by statute and local ordinance. The Department will maintain the roadway including auxiliary lanes and shoulders, except in those cases where the access installation has failed due to improper access construction and/or failure to follow permit requirements and specifications in which case the permittee shall be responsible for such repair. Any significant repairs such as culvert replacement, resurfacing, or changes in design or specifications, requires authorization from the Department.

State Highway Access Permit
Attachment to Permit No. 212012 - Additional Terms and Conditions

1. A NOTICE TO PROCEED TO CONSTRUCTION, CDOT Form 1265, is required before beginning the construction of the access or any activity in the highway right-of-way. All submittals, documents, plans, and other items that must be completed shall be submitted and approved by the Department before a NOTICE TO PROCEED to construction will be issued.

2. The access is located on the south side of State Highway 94, approximately 1 mile west from Log Road or approximately milepost 15.81.

3. This section of highway is a Category E-X highway. Information submitted with the application requires the following to be designed and constructed.
   a. A dedication of 40' of right-of-way of SH 94 along the Permittee property frontage on the south side east and west of Log Road as necessary to accommodate widening needed for future dual left-turning movements.
   b. An eastbound right-turn deceleration lane.
   c. Installation of a traffic signal may be required in the future as determined by the Department. These improvements will be determined based on safety problems created by the access. If the vehicular volume of the access meet warrants as required by Section 3 of the State Highway Access Code, or if the warrants for a signal are met in accordance with the Manual on Uniform Traffic Control Devices (M.U.T.C.D.), a new access permit will be required. The improvements shall be designed and installed by the Permittee in a timely manner to the Department's standards and specifications and at no cost to the Department. Failure by the Permittee to provide such improvements shall result in the revocation of this access permit and closure of the access approach.

4. The Permittee/Applicant shall provide the Department with the following submittals, documents, plans and other items for review prior to the issuance of a NOTICE TO PROCEED to construction:
   a. A written request for a NOTICE TO PROCEED including the access permit number listed above.
   b. The Permittee, through a Colorado registered professional engineer, shall provide design, construction, pavement striping and signing plans to the Department and/or Issuing Authority for approval. Design plans must include, but not limited to, layout of auxiliary lanes, utility locations, present and proposed right-of-way lines, present and proposed traffic control devices, cross sections on 50 foot intervals (NO CONTOURS), typical sections showing proposed surfacing requirements, and seeding requirements. See attached checklist. Upon approval and prior to issuing a NOTICE TO PROCEED, the auxiliary lane(s) and intersection improvement design plans shall be provided and shall be stamped and sealed by a Colorado registered professional engineer. The final design plans will be incorporated into this Access Permit. The Permittee shall furnish the Department with a minimum of three sets of final design plans.
   c. A performance bond from the Permittee's contractor to CDOT that will insure completion of the approved highway and all related intersection improvements in conformance with CDOT standards and specifications is required and shall be in place prior to issuance of the Notice to Proceed. The bond must be in the amount equal to 110% of the cost necessary to complete the project in accordance with access permit terms and conditions, as estimated by the Engineer of Record (EOR) and approved by CDOT. The bond company must be licensed to do business in the State of Colorado. The Cost Estimate and a draft of the bond language must be provided and approved by CDOT before acceptance of the final bond and before issuance of the Notice to Proceed. Attached are performance bond guidelines to aid in the creation of the draft bond.

d. The Permittee shall provide the Department with a donation form, legal description and survey of any area that is required to be donated to the Department for the construction of highway improvements.
e. Current title policy or warranty deed.
f. Cost estimate for the improvements of the highway.
g. Monetary or legal guarantees for phasing of improvements.
h. For projects that include signal work, signal mast arm and shop drawings.
i. A copy of the final recorded plat.
j. Proof of donation of right-of-way shall be provided to accommodate all improvements would be done on public property. The Department will accept a recorded subdivision plat indicating donation of ROW or you may follow the checklist attached to this permit.
k. The Permittee/Applicant is required to include the portion of CDOT Rights of Way to be impacted by the construction of the access within their Construction Stormwater Permit (CSP). A notice to proceed will not be issued until the Permittee/applicant provides CDOT region permit office with the proof of such inclusion on the developer's CSP.

5. This Access Permit is issued to allow access to State Highway 94 for a change in use of the property. The previous use of the access was to serve grazing land and a mini-storage (117 units). The access will now serve as the New Log Road and 98 single-family residences (Phase I, Filing 1 of Ellicott Town Center).

6. A pre-construction meeting shall to be held with prior to any construction within the state highway right-of-way. Contact Mr. Todd Ausbun, CDOT Access Inspector to schedule meeting. Mr. Ausbun can be contacted in Pueblo at (719) 546-5758.

7. The Permittee is responsible for wind and air borne erosion control measures during the construction phase. The developer is responsible for MS4 compliance; best management practice during construction should include clean project entry. The project landfall must be shaped and armored in such a way that no head-cutting will occur. No construction traffic is allowed to enter the highway along pioneered pathways through the ditches.

8. The Permittee shall refer to all additional standard requirements attached to this permit. This includes CDOT Form 101b, enclosed additional terms, conditions, exhibits, and noted attachments.

9. The following criteria were used to establish this Access Permit:
   a. The Application for Access Permit (CDOT Form 137) dated March 1, 2012 and accepted by the regional office on July 30, 2012 and all attachments.
   b. State Highway Access Code, Volume 2, CCR-601-1; Effective date August 31, 1998
   c. The State Highway Access Category Assignment Schedule, as revised.
   d. The Colorado Department of Transportation (CDOT) M&S Standard Plans
   e. Vicinity Map
   f. Attached Details
   g. Exhibit A, "Seeding Requirements"
   h. Design Plans
   i. Standard Special Provision – Compliance with NCHRP 350 Crashworthiness Certification for Work Zone Traffic Control Devices.

j. Approved Traffic Report with memorandum dated June 1,2012, signed and sealed by , PE #31684, dated April 13, 2012.

10. Permittee shall comply with the requirements of Title II of the ADA, applicable federal regulations and the ADAAG (ADA Access Guidelines).

11. This Access Permit is issued in accordance with the 1998 State Highway Access Code (2CCR 601-1), and is based in part upon the information submitted by the Permittee. This Access Permit is only for the use and purpose stated in the Application and on the Permit. Any changes, based upon existing and/or anticipated future conditions in traffic volumes, drainage, types of traffic, or other operational aspects may render this permit void, requiring a new Application for Access Permit to be submitted for review by the Department and/or Issuing Authority.

12. If necessary, minor changes, corrections and/or additions to the Permit may be ordered by the Department Inspector, other Department representative, or the local authority, to meet unanticipated site conditions. Changes may not be in violation of the State Highway Access Code. All major changes to the permit must be approved in writing by the Department prior to commencement of any work on or within the State Highway right-of-way.

13. All work is to conform to the plans referenced by this permit on file with the Colorado Department of Transportation or as modified by this Permit or a valid Notice to Proceed. If discrepancies arise, this permit and the valid Notice to Proceed shall take precedence over the plans. The Department plan review is only for the general conformance with the Department's design and code requirements. The Department is not responsible for the accuracy and adequacy of the design, dimensions, elevations or any other elements, which shall be confirmed and correlated at the work site. The Department through the approval of this document assumes no responsibility for the completeness and/or accuracy of the plans.

14. The Department standards, specifications, and regulations shall override the design plans incorporated in this permit should an oversight, omission, or conflict occur. The Department assumes no liability or responsibility whatsoever for the accuracy, completeness or correctness of the Permittee's design plans. Any design plan errors are the sole responsibility of the Permittee and/or the engineer.

15. The access shall be completed in an expeditious and safe manner and shall be finished within 45 days from initiation of construction within State Highway right-of-way.

16. Backing maneuvers within and into the State Highway right-of-way are strictly prohibited. All vehicles shall enter and exit the highway right-of-way in a forward movement. Backing into the right-of-way shall be considered a violation of the Terms and Conditions of the Access Permit and may result in the revocation of the Permit by the Department and/or Issuing Authority.

17. This access will be allowed to be full ~~a right-in/right-out~~ movement. However, left-turn movements in and out of this access may be prohibited at some future date. ~~The access shall be constructed to prohibit left-turning movements.~~

18. A Fully Executed Complete Copy of this Permit and a valid Notice to Proceed to Construction must be on the job site with the contractor at all times during the construction. Failure to comply with

j. Approved Traffic Report with memorandum dated June 1, 2012, signed and sealed by , PE #31684, dated April 13, 2012.

10. Permittee shall comply with the requirements of Title II of the ADA, applicable federal regulations and the ADAAG (ADA Access Guidelines).

11. This Access Permit is issued in accordance with the 1998 State Highway Access Code (2CCR 601-1), and is based in part upon the information submitted by the Permittee. This Access Permit is only for the use and purpose stated in the Application and on the Permit. Any changes, based upon existing and/or anticipated future conditions in traffic volumes, drainage, types of traffic, or other operational aspects may render this permit void, requiring a new Application for Access Permit to be submitted for review by the Department and/or Issuing Authority.

12. If necessary, minor changes, corrections and/or additions to the Permit may be ordered by the Department Inspector, other Department representative, or the local authority, to meet unanticipated site conditions. Changes may not be in violation of the State Highway Access Code. All major changes to the permit must be approved in writing by the Department prior to commencement of any work on or within the State Highway right-of-way.

13. All work is to conform to the plans referenced by this permit on file with the Colorado Department of Transportation or as modified by this Permit or a valid Notice to Proceed. If discrepancies arise, this permit and the valid Notice to Proceed shall take precedence over the plans. The Department plan review is only for the general conformance with the Department's design and code requirements. The Department is not responsible for the accuracy and adequacy of the design, dimensions, elevations or any other elements, which shall be confirmed and correlated at the work site. The Department through the approval of this document assumes no responsibility for the completeness and/or accuracy of the plans.

14. The Department standards, specifications, and regulations shall override the design plans incorporated in this permit should an oversight, omission, or conflict occur. The Department assumes no liability or responsibility whatsoever for the accuracy, completeness or correctness of the Permittee's design plans. Any design plan errors are the sole responsibility of the Permittee and/or the engineer.

15. The access shall be completed in an expeditious and safe manner and shall be finished within 45 days from initiation of construction within State Highway right-of-way.

16. Backing maneuvers within and into the State Highway right-of-way are strictly prohibited. All vehicles shall enter and exit the highway right-of-way in a forward movement. Backing into the right-of-way shall be considered a violation of the Terms and Conditions of the Access Permit and may result in the revocation of the Permit by the Department and/or Issuing Authority.

17. This access will be allowed to be full ~~a right-in/right-out~~ movement. However, left turn movements ~~The access shall be constructed to prohibit left-turning movements.~~ in & out of this access may be prohibited at some future date.

18. A Fully Executed Complete Copy of this Permit and a valid Notice to Proceed to Construction must be on the job site with the contractor at all times during the construction. Failure to comply with

j. Approved Traffic Report with memorandum dated June 1, 2012, signed and sealed by , PE #31684, dated April 13, 2012.

10. Permittee shall comply with the requirements of Title II of the ADA, applicable federal regulations and the ADAAG (ADA Access Guidelines).

11. This Access Permit is issued in accordance with the 1998 State Highway Access Code (2CCR 601-1), and is based in part upon the information submitted by the Permittee. This Access Permit is only for the use and purpose stated in the Application and on the Permit. Any changes, based upon existing and/or anticipated future conditions in traffic volumes, drainage, types of traffic, or other operational aspects may render this permit void, requiring a new Application for Access Permit to be submitted for review by the Department and/or Issuing Authority.

12. If necessary, minor changes, corrections and/or additions to the Permit may be ordered by the Department Inspector, other Department representative, or the local authority, to meet unanticipated site conditions. Changes may not be in violation of the State Highway Access Code. All major changes to the permit must be approved in writing by the Department prior to commencement of any work on or within the State Highway right-of-way.

13. All work is to conform to the plans referenced by this permit on file with the Colorado Department of Transportation or as modified by this Permit or a valid Notice to Proceed. If discrepancies arise, this permit and the valid Notice to Proceed shall take precedence over the plans. The Department plan review is only for the general conformance with the Department's design and code requirements. The Department is not responsible for the accuracy and adequacy of the design, dimensions, elevations or any other elements, which shall be confirmed and correlated at the work site. The Department through the approval of this document assumes no responsibility for the completeness and/or accuracy of the plans.

14. The Department standards, specifications, and regulations shall override the design plans incorporated in this permit should an oversight, omission, or conflict occur. The Department assumes no liability or responsibility whatsoever for the accuracy, completeness or correctness of the Permittee's design plans. Any design plan errors are the sole responsibility of the Permittee and/or the engineer.

15. The access shall be completed in an expeditious and safe manner and shall be finished within 45 days from initiation of construction within State Highway right-of-way.

16. Backing maneuvers within and into the State Highway right-of-way are strictly prohibited. All vehicles shall enter and exit the highway right-of-way in a forward movement. Backing into the right-of-way shall be considered a violation of the Terms and Conditions of the Access Permit and may result in the revocation of the Permit by the Department and/or Issuing Authority.

17. This access will be allowed a right-in/right-out movement. The access shall be constructed to prohibit left-turning movements.

ully Executed Complete Copy of this Permit and a valid Notice to Proceed to Construction must n the job site with the contractor at all times during the construction. Failure to comply with

this or any other construction requirement may result in the immediate suspension of the work by order of the Department Inspector or the Issuing Authority.

19. Any additional permits and clearances required by other Federal, State, Local Government Agencies or Ditch Companies is the responsibility of the Permittee and/or Applicant.

20. The Permittee is responsible for obtaining any necessary additional federal, state and/or local government agency permits or clearances required for construction of the access. Approval of this access permit does not constitute verification of this action by the Permittee.

21. Whenever there is work within the highway right of way, the Permittee shall develop and implement a traffic control plan. This plan shall utilize traffic control devices as necessary to ensure the safe and expeditious movement of traffic around and through the work site as well as ensure the safety of the work force. A certified Traffic Control Supervisor or a Professional Traffic Engineer shall prepare the traffic control plan. The plan shall be in conformance with the latest Manual on Uniform Traffic Control Devices (MUTCD) and other applicable standards. The plan must be submitted and approved by the State Access Inspector listed below five working days prior to beginning construction within the highway right of way. The approved traffic control plan will be attached to the Permit and the NOTICE TO PROCEED TO CONSTRUCTION and must be available on site throughout the duration of the construction. All work that requires traffic control shall be supervised by a registered professional traffic engineer or by a certified traffic control supervisor. The contractor in accordance with the Department Standards shall certify flagging personnel, when required.

22. If any traffic control devices are evident within 50 feet of the construction area, the Permittee/Contractor must contact Mr. Eric Lundberg, Asst. Traffic Operations Engineer, in Pueblo. Mr. Lundberg can be contacted in Pueblo at (719) 546-5405.

23. Five working days prior to beginning construction, the Permittee/Contractor must contact Mr. Gary Heller, Senior Maintenance Supervisor, to coordinate the construction with any scheduled maintenance activity. Mr. Heller can be contacted in Colorado Springs at (719) 659-9438. Failure to comply with this requirement may result in the revocation of this permit.

24. Work shall BEGIN AFTER 8:30 a.m. and all equipment shall be off the right-of-way BEFORE 3:30 p.m. each day. No work is allowed within the highway right-of-way on weekends or State/Federal holidays. No construction vehicles shall be parked, or construction materials stockpiled on the highway right-of-way overnight. No private vehicles may be parked on the highway right-of-way at any time during construction.

25. Two-way traffic shall be maintained throughout the work area at all times.

26. If the vehicular volumes exceed the stated Peak Hour volumes, as determined by the Department, the appropriate warranted highway improvements shall be designed and installed within the earliest construction season unless specifically allowed otherwise, in writing by the Department. The highway improvements shall be designed and constructed by the Permittee at no cost to the Department. Failure by the Permittee to provide such warranted improvements may result in the revoking of the Access Permit and closure of the access approach.

27. All costs associated with the installation of this access are the responsibility of the Permittee. This includes the design, construction, utility relocation, testing of materials and inspection.

28. Reconstruction or improvements to the access may be required when the Permittee has failed to meet the required design and/or materials specifications. If any construction element fails within two years due to improper construction or material specifications, the Permittee shall be responsible for all repairs. Failure to make such repairs may result in the revoking of the permit and closure of the access.

29. All access permit requirments shall be met prior to the herein-authorized use of this access.

30. Signing and striping are the responsibilities of the Permittee. All signs shall be manufactured in accordance with the Manual on Uniform Traffic Control Devices (M.U.T.C.D.). The sheeting for the signs shall be highway intensity sheeting (ASTM Type III retro reflective sheeting). The Department shall approve the striping.

31. All workers within the State Highway right of way shall comply with their employer's safety and health policies/procedures and all applicable US Occupational Safety and Health Administration (OSHA) regulations- including but not limited to the applicable sections of 29 CFR Part 1910 – Occupational Safety and Health Standards and 29 CFR Part 1926 – Safety and Health Regulations for Construction.

    a. Personal protective equipment (e.g. head protection, footwear, high visibility apparel, safety glasses, hearing protection, respirators, gloves, etc.) shall be worn as appropriate for the work being performed and as specified in regulation. At a minimum, all workers in the State Highway right of way, except when in their vehicles, shall wear the following personal protective equipment:
    b. Head protection that complies with the ANSI Z89.1-1997 standard;
    c. At all construction sites or whenever there is danger of injury to feet, workers shall comply with OSHA's PPE requirements for foot protection per 29 CFR 1910.136, 1926.95, and 1926.96. If required, such footwear shall meet the requirements of ANSI Z41-1999;
    d. High visibility apparel as specified in the Traffic Control provisions of this permit (at a minimum, ANSI/ISEA 107-1999, Class 2).
    e. Where any of the above-referenced ANSI standards have been revised, the most recent version of the standard shall apply.

32. CDOT will require the Permittee to hire a Colorado registered professional engineer to inspect the work carefully, and to affirm to the best of their knowledge and belief that the construction is in compliance with the permit specifications, and to report any item which may not be in compliance or can not be determined to be in compliance, and the nature and scope of the item relative to compliance. CDOT may require testing of materials. When so required, test results shall be provided to the Department or as specified on the permit. CDOT is requesting a written confirmation from the Permittee that this requirement is met. Two complete sets of the accepted plans (half size, 11" x 17"), signed and sealed by a Colorado registered Professional Engineer, must be submitted to CDOT.

33. The Department (CDOT) will require the Permittee to have a Colorado registered Professional Engineer to be in responsible charge of construction observation. The PE's responsibilities include, but are not limited to:
    a. The PE in Responsible Charge of Construction Observation shall evaluate compliance with plans and specifications with regard to the roadway improvements within the State Highway right-of-way only. The PE's responsibilities shall be as defined in Section 5 of the "Bylaws And Rules Of The State Board Of Registration For Professional Engineers And Land Surveyors", and the relevant sections of the 1999 CDOT Standard Specifications for Road and Bridge Construction. The PE shall carefully monitor the contractor's compliance on all aspects of construction, including Construction Zone Traffic Control.
    b. Engineering Certification: After inspection and before final acceptance, the Engineer shall certify to CDOT, in writing, that all inspections, materials, materials testing, and construction methods conform to the plans, specifications and purpose of design. The PE shall be experienced and competent in road and bridge construction management, and inspection and materials testing. Certification is defined as a statement that includes all of the following:
    c. Is signed and/or sealed by a Professional Engineer representing that the engineering services addressed therein have been performed by the Professional Engineer, or under the Professional Engineer In Responsible Charge.
    d. Is based upon the Professional Engineer's knowledge, information, and belief; and
    e. Is in accordance with applicable standards of practice.
    f. CDOT is requesting a written confirmation from the Permittee that this requirement is met.

34. All construction materials, techniques and processes shall be in conformance with the specification on the permit and shall be consistent with Department standard specifications for road construction as set forth in the latest "Standard Specifications for Road and Bridge Construction" manual.

35. The Permittee is responsible for any utilities and/or traffic control devices disrupted by the construction of this access and all expense incurred for repair. There are existing utilities on the highway right-of-way by permit. Owners of those utilities must be contacted. Any work necessary to protect existing permitted utilities, such as encasements, bulwarks, etc. will be the responsibility of the Permittee.

36. The Permittee is hereby advised that other utilities may exist within the proposed permit area. Permittee shall implement any and all measures to protect any existing utilities from damage.

37. Non-Destructive Air-vacuum Excavation (potholing) to expose the utilities being surveyed to determine their exact depth and location maybe necessary before any work commences. A core hole saw cut is the recommended method of entry through pavement for potholing. Flowfill is required for backfill of the core hole under the pavement or on the roadway.

38. The vacuum excavation technique is used not only to expose utilities but also for other uses that are benefited by the non-invasive/non-destructive, environmentally friendly technology such as dewatering or drill fluid/saw cutting fluid removal.

39. The Contractor shall utilize a spotter to assist in the visual inspection of all excavation work as it progresses near existing CDOT Intelligent Transportation Systems fiber optic line conduits, pull

boxes and manholes. The Contractor shall provide a spotter to aid equipment operators when construction activities are near marked or unmarked fiber lines.

40. The spotter shall observe all excavation work as it progresses to ensure that no damage occurs to existing underground fiber lines. When the spotter has visual sight of the underground conduit, the spotter shall notify the equipment operator of the proximity to the conduit and begin to guide the excavation work. The spotter shall guide all excavation work around the conduit to ensure no damage occurs.

41. Additional CDOT permits are required for work involving water, sanitary sewer, gas, electrical, telephone and landscaping within the right-of-way.

42. Any damage to existing highway facilities shall be repaired immediately at no cost to the Department and prior to continuing other work. Any mud or other material tracked or otherwise deposited on the roadway shall be removed daily or as ordered by the Department inspector.

43. The Department Inspector or the Issuing Authority may suspend any work due to noncompliance with the provisions of this permit, adverse weather or traffic conditions, concurrent highway construction or maintenance in conflict with permit work or any condition deemed unsafe for workers or the general public. The work may be resumed upon notice from the Department Inspector or Issuing Authority.

44. The Permittee shall maintain adequate, unobstructed sight distance in both directions from the access. When determining the distance between accesses, the point of tangent shall be used where a radius is present, or the beginning of the curb cut. The minimum sight distance that shall be maintained along the highway for the access shall be 550 feet. The minimum sight distance that shall be maintained for the vehicle entering the highway shall be 650 feet.

45. Any landscaping or potentially obstructing objects such as but not limited to advertising signs, structures, trees, and bushes, shall be designed, placed, and maintained at a height not to interfere with the sight distance needed by any vehicle using the access. Planting of tree(s), which will be over 4 inches in caliper at maturity, will not be allowed within 30 feet of the edge of the traveled way. All other objects shall not exceed a total height of thirty inches from the top of final grade. The Department will require any object or landscaping that becomes unsightly or is considered to be a traffic hazard to be removed by the Permittee at no cost to the Department.

46. Installation of auxiliary lane(s) (i.e. right/left acceleration lanes, right/left deleration lanes) and/or a traffic signal may be required in the future as determined by the Department. These improvements will be determined based on safety problems created by the access. If the vehicular volume of the access meet warrants as required by Section 3 of the State Highway Access Code, or if the warrants for a signal are met in accordance with the Manual on Uniform Traffic Control Devices (M.U.T.C.D.), a new access permit will be required. The improvements shall be designed and installed by the Permittee in a timely manner to the Department's standards and specifications and at no cost to the Department. Failure by the Permittee to provide such improvements shall result in the revocation of this access permit and closure of the access approach.

47. Within the right-of-way, maximum grades shall be limited to ten per cent for low volume field and residential access. All other accesses shall be limited to a maximum of eight percent grade. Lesser grades may be required for drainage control purposes.

48. The horizontal axis of an access to the highway shall be at a right angle to the centerline of the highway and extend a minimum of 40 feet from the edge of pavement or to the right-of-way line, whichever is greater.

49. It is the responsibility of the Permittee to prevent all livestock from entering the State Highway right of way at this access location. Any livestock that does enter the highway right of way shall be the sole responsibility of the Permittee.

50. Fill slopes and cut slopes shall be constructed to current Department minimum standards.

51. Soil preparation including topsoil, seeding and mulching is required with the highway right-of-way on all disturbed areas not surfaced and those areas beyond the highway that may erode and send debris into the highway right-of-way. The Department or local municipality shall provide minimum seed mixes, types and rates of seeding and preparation. (See attached Exhibit)

52. Installation of any traffic control device necessary for the safe and proper operation and control of the access shall be required by the permit at the cost of the Permittee.

53. The auxiliary lanes shall be 12 feet wide exclusive of gutter pan and/or shoulder.

54. Shoulders adjacent to the travel lane shall be a minimum of six feet in width, but no less than the width of the current shoulder.

55. Shoulders adjacent to the travel lane shall be a minimum of 10 feet in width on any highway designated as part of the National Highway System.

56. Shoulders adjacent to an auxiliary lane shall be four feet in width.

57. All traffic control devices within the highway or other public right-of-way or access that serve the general public shall conform to the M.U.T.C.D.

58. Prior to removing any existing highway signs within the limits of the construction activities, the Permittee must contact Mr. Gary Garcia with the Department. Mr. Garcia can be contacted at (719) 546- 5767.

59. The surface width of the access shall be enough to accommodate all improvements.

60. Within unincorporated areas, the Department will keep access culverts clean as part of maintenance of the highway drainage system. However, the Permittee is responsible for the repair and replacement of any access-related culverts within the right-of-way. Within incorporated areas, drainage responsibilities for municipalities are determined by stature and local ordinance.

61. Each access shall be constructed in a manner that shall not cause water to enter onto the roadway or shoulder, and shall not interfere with the existing drainage system in the right-of-way or any adopted municipal system and drainage plan.

62. The highway drainage system is for the protection of the state highway right-of-way, structures, and appurtenances. It is not designed nor intended to serve the drainage requirement of abutting or other properties beyond undeveloped historical flow. Drainage to the state highway right-of-way shall not exceed the undeveloped historical rate of flow.

63. The Permittee shall provide, at their own expense, drainage structures for access that will become an integral part of the existing drainage system. Drainage structures under the access should extend beyond the access radius to accommodate the side slopes.

64. The Permittee shall install a new 18-inch corrugated metal pipe. It shall be a sufficient length to allow for the side slopes.

65. The Permittee or the contractor shall be required to provide comprehensive general liability and property damage insurance naming the Department and the issuing authority (if applicable) as an additional insured party, in the amounts of not less than $600,000 per occurrence and automobile liability insurance of $600,000 combined single limit bodily injury and property damage for each accident, during the period of access construction. By accepting the permit, the Permittee agrees to save, indemnify, and hold harmless to the extent allowed by law, the issuing authority, the Department, its officers, and employees from suits, actions, claims of any type or character brought because of injuries or damage sustained by any person resulting from the Permittee's use of the access permit during the construction of the access.

66. Attached is CDOT Standard Plan M-203-1, entitled "Approach Roads". The radii, surfacing, side drains, and side slope requirements shall be as specified in this permit.

67. The radii of the access shall be large enough to accommodate the largest vehicle using the access on a daily basis without encroaching on the adjacent travel lane.

68. The Peak Hour Volumes (PHV) volumes using this access shall not exceed 90 trips. In addition, in the future, if the traffic volumes increase by greater than 20% of the permitted number, the permittee (property owner) is required to apply for a new Access Permit and may be required to construct highway improvements.

69. The access shall be surfaced upon completion of earthwork construction and prior to being used. The access shall be surfaced from the highway roadway to the right-of-way line.

70. The access shall have a hard surface pavement for a minimum distance of 50 feet from the traveled way. The surfacing for the access and the widening shall be per an approved pavement design and Hot Mix Asphalt design on a sub-grade with "R>66". The pavement design shall be submitted to Mr. Craig Wieden, CDOT Materials Engineer for review and approval. The pavement and mix designs shall be incorporated in the design plans. Mr. Wieden can be contacted in Pueblo at (719) 546-5779.

71. Any access requiring a turn lane shall have a hard surface pavement for a minimum distance of 50 feet from the traveled way. The surfacing for the access and the widening shall be 6 inches of compacted Hot Mix Asphalt (with 1% lime), placed in 3 lifts, on a sub-grade with "R>66". If a "R>66" cannot be achieved, then 12 inches of Aggregate Base Course (Class 6) shall be placed.

72. The Permittee will be responsible for removing the existing rumble strips that are located in the shoulder of the existing highway at the access connection point. The rumble strips shall be removed per a plan that has been submitted to and approved by the Department.

73. If patching is required due to saw cutting, 6 inches of Hot Mix Asphalt shall be used. The material will be placed in 3 lifts.

74. If hard surfacing (concrete or bituminous pavement) abuts existing pavement, the existing pavement shall be saw cut and removed a minimum of one (1) foot back from the existing edge of pavement.

75. Compaction of Hot Mix Asphalt shall be in accordance to section 401.17 of the Department's standard specifications. Compaction of the Aggregate Base Course shall comply with section 304.06.

76. Compaction of sub-grade, embankments and backfills shall be in accordance to section 203.07 of the Department's standard specification.

77. Placement of base course materials shall be in accordance with section 304.04 of the standard specifications. Compaction shall be in conformance with AASHTO procedure T-99.

78. If frost, water or moisture is present in the sub-grade, no surfacing materials shall be placed until all frost, water or moisture is gone or removed.

79. This Permit hereby replaces all previous access permit(s) for this ownership, which now become null and void.

80. CDOT retains the right to perform any necessary maintenance work in this area.

81. A "Notice to Proceed" (CDOT Form 1265) is required to complete the access permitting process, even when construction is not required.

Buffalo Run Rd
anchette Trail
Antelope Dr
N Log Rd
Spotted Owl Way
Tiger Pt
Golden Eagle Dr
ian View
Chesley Dr
15
94
94
16
N Log Rd
S Log Rd
600 yds
© 2012 Microsoft Corporation © 2010 NAVTEQ © AND

AP 212012

COLORADO DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ACCESS PERMIT APPLICATION

Issuing authority application acceptance date:

Instructions:
- Contact the Colorado Department of Transportation (CDOT) or your local government to determine your issuing authority.
- Contact the issuing authority to determine what plans and other documents are required to be submitted with your application.
- Complete this form (some questions may not apply to you) and attach all necessary documents and Submit it to the issuing authority.
- Submit an application for each access affected.
- If you have any questions contact the issuing authority.
- For additional information see CDOT's Access Management website at http://www.dot.state.co.us/AccessPermits/index.htm

Please print or type

1) Property owner (Permittee) Ellicott Towncenter, LP - Simon Malk	2) Agent for permittee (if different from property owner) LSC Transportation Consultants, Inc.
Street address 12275 El Camino Real, Suite 110	Mailing address 516 North Tejon Street
City, state & zip: San Diego, CA 92130 — Phone #: 858-345-3642	City, state & zip: CO. Springs, CO. 80903 — Phone # (required): 719-633-2868
E-mail address smalk@accretive-group.com	E-mail address if available JCHodsdon@LSCCS.com

3) Address of property to be served by permit (required)
22555 State Highway 94

4) Legal description of property: If within jurisdictional limits of Municipality, city and/or County, which one?

county	subdivision	block	lot	section	township	range
El Paso	(see attached)					

5) What State Highway are you requesting access from? State Highway 94	6) What side of the highway? ☐ N ☒ S ☐ E ☐ W
7) How many feet is the proposed access from the nearest mile post? 3,992 feet ☐N ☐S ☐E ☒W) from: MP 16	How many feet is the proposed access from the nearest cross street? 5,280 feet ☐N ☐S ☐E ☒W) from: Log Road

8) What is the approximate date you intend to begin construction?
1/1/2015

9) Check here if you are requesting a:
☒ new access ☐ temporary access (duration anticipated:) ☐ improvement to existing access
☐ change in access use ☐ removal of access ☐ relocation of an existing access (provide detail)

10) Provide existing property use
grazing land

11) Do you have knowledge of any State Highway access permits serving this property, or adjacent properties in which you have a property interest?
☐ no ☒ yes, if yes - what are the permit number(s) and provide copies: and/or, permit date:
#202123 12/6/2002; #206060 12/15/2006

12) Does the property owner own or have any interests in any adjacent property?
☒ no ☐ yes, if yes - please describe:

13) Are there other existing or dedicated public streets, roads, highways or access easements bordering or within the property?
☒ no ☐ yes, if yes - list them on your plans and indicate the proposed and existing access points.

14) If you are requesting agricultural field access - how many acres will the access serve?
N/A

15) If you are requesting commercial or industrial access please indicate the types and number of businesses and provide the floor area square footage of each.

business/land use	square footage	business	square footage
N/A			

16) If you are requesting residential developement access, what is the type (single family, apartment, townhouse) and number of units?

type	number of units	type	number of units
single-famiy detached housing	98		

17) Provide the following vehicle count estimates for vehicles that will use the access. Leaving the property then returning is two counts.

Indicate if your counts are ☒ peak hour volumes or ☐ average daily volumes.	# of passenger cars and light trucks at peak hour volumes 89	# of multi unit trucks at peak hour volumes 0
# of single unit vehicles in excess of 30 ft. 1	# of farm vehicles (field equipment) 0	**Total count of all vehicles** 90

18) Check with the issuing authority to determine which of the following documents are required to complete the review of your application.

a) Property map indicating other access, bordering roads and streets.
b) Highway and driveway plan profile.
c) Drainage plan showing impact to the highway right-of-way.
d) Map and letters detailing utility locations before and after development in and along the right-of-way.
e) Subdivision, zoning, or development plan.
f) Proposed access design.
g) Parcel and ownership maps including easements.
h) Traffic studies.
i) Proof of ownership.

1- It is the applicant's responsibility to contact appropriate agencies and obtain all environmental clearances that apply to their activities. Such clearances may include Corps of Engineers 404 Permits or Colorado Discharge Permit System permits, or ecological, archeological, historical or cultural resource clearances. The CDOT Environmental Clearances Information Summary presents contact information for agencies administering certain clearances, information about prohibited discharges, and may be obtained from Regional CDOT Utility/Special Use Permit offices or accessed via the CDOT Planning/Construction-Environmental-Guidance webpage **http://www.dot.state.co.us/environmental/Forms.asp**.

2- All workers within the State Highway right of way shall comply with their employer's safety and health policies/ procedures, and all applicable U.S. Occupational Safety and Health Administration (OSHA) regulations - including, but not limited to the applicable sections of 29 CFR Part 1910 - Occupational Safety and Health Standards and 29 CFR Part 1926 - Safety and Health Regulations for Construction.

Personal protective equipment (e.g. head protection, footwear, high visibility apparel, safety glasses, hearing protection, respirators, gloves, etc.) shall be worn as appropriate for the work being performed, and as specified in regulation. At a minimum, all workers in the State Highway right of way, except when in their vehicles, shall wear the following personal protective equipment: High visibility apparel as specified in the Traffic Control provisions of the documentation accompanying the Notice to Proceed related to this permit (at a minimum, ANSI/ISEA 107-1999, class 2); head protection that complies with the ANSI Z89.1-1997 standard; and at all construction sites or whenever there is danger of injury to feet, workers shall comply with OSHA's PPE requirements for foot protection per 29 CFR 1910.136, 1926.95, and 1926.96. If required, such footwear shall meet the requirements of ANSI Z41-1999.

Where any of the above-referenced ANSI standards have been revised, the most recent version of the standard shall apply.

3- The Permittee is responsible for complying with the Revised Guidelines that have been adopted by the Access Board under the American Disabilities Act (ADA). These guidelines define traversable slope requirements and prescribe the use of a defined pattern of truncated domes as detectable warnings at street crossings. The new Standards Plans and can be found on the Design and Construction Project Support web page at: **<http://www.dot.state.co.us/DesignSupport/>**, then click on *Design Bulletins*.

If an access permit is issued to you, it will state the terms and conditions for its use. Any changes in the use of the permitted access not consistent with the terms and conditions listed on the permit may be considered a violation of the permit.

The applicant declares under penalty of perjury in the second degree, and any other applicable state or federal laws, that all information provided on this form and submitted attachments are to the best of their knowledge true and complete.

I understand receipt of an access permit does not constitute permission to start access construction work.

Applicant's signature	Print name	Date
	Jeffrey C. Hodsdon	3-1-12

If the applicant is not the owner of the property, we require this application also to be signed by the property owner or their legally authorized representative (or other acceptable written evidence). This signature shall constitute agreement with this application by all owners-of-interest unless stated in writing. If a permit is issued, the property owner, in most cases, will be listed as the permittee.

Property owner signature	Print name	Date
	Simon Malk	2-29-12

MEDIAN WIDTH LESS THAN 50 FT.

MEDIAN WIDTH GREATER THAN 50 FT.

TYPICAL PLANS FOR
EMERGENCY MEDIAN CROSS OVER

LOCATION OF RADIUS POINTS MAY BE ADJUSTED FOR BEST FIT

TYPICAL SECTION FOR MEDIAN CROSS OVER

ANY REQUIRED PIPE OR INLET FOR MEDIAN DRAINAGE SHALL HAVE A TRAVERSABLE DESIGN AS SPECIFIED ON THE PLANS

SIDE DRAINS SHALL BE LOCATED BEYOND THE CLEAR ZONE, OR WHEN WITHIN THE CLEAR ZONE, THEY SHALL BE INSTALLED WITH END SECTIONS CONFORMING TO A 6:1 SLOPE. FIFTY FT. RADII SHALL BE USED ON INTERSECTING ROADS, EXCEPT FOR FIELD AND RESIDENTIAL DRIVES OR UNLESS OTHERWISE SPECIFIED ON PLANS. RADII MAY BE VARIED TO SUIT FIELD CONDITIONS.

TYPICAL PLANS FOR
SIDE APPROACH ROAD

TYPICAL SECTION FOR APPROACH ROAD

● ROAD APPROACHES WHICH REQUIRE HMA PAVEMENT, SHALL BE PLACED AS FOLLOWS:

PUBLIC APPROACHES AND ENTRANCES TO BUILDINGS OR RESIDENCES SHALL BE PAVED 50 FT. OUT FROM EDGE OF SHOULDER OR TO THE RIGHT OF WAY LINE, WHICHEVER IS LESS. FIELD ENTRANCES SHALL BE PAVED 4 FT. OUT FROM EDGE OF SHOULDER. STABILIZATION THICKNESSES SHALL BE AS SHOWN ON THE PLANS.

STANDARD CROWNED SECTION

SUPERELEVATED CUT SECTION

SUPERELEVATED FILL SECTION

VERTICAL ALIGNMENT SIDE APPROACH ROADS
INTERSECTING MAIN ROADWAY

* TANGENT SLOPE NOT STEEPER THAN 8% BEYOND THE VERTICAL CURVE. THE SLOPE MAY BE STEEPER, IF REQUIRED, TO MEET EXISTING APPROACH SLOPE. HOWEVER, APPROACH ROAD SLOPE SHOULD NOT BE STEEPER THAN EXISTING SLOPE.

Computer File Information	
Creation Date: 07/04/06	Initials: SJR
Last Modification Date: 07/04/06	Initials: LTA
Full Path: www.dot.state.co.us/DesignSupport/	
Drawing File Name: 203010101.dwg	
CAD Ver.: MicroStation V8 Scale: Not to Scale	Units: English

(R-X)
(R-X)
(R-X)
(R-X)

Sheet Revisions	
Date:	Comments

Colorado Department of Transportation
4201 East Arkansas Avenue
Denver, Colorado 80222
Phone: (303) 757-9083
Fax: (303) 757-9820
Project Development Branch SRJ/LTA

APPROACH ROADS

Issued By: Project Development Branch on July 04, 2006

STANDARD PLAN NO.
M-203-1
Sheet No. 1 of 1

Items required for a CDOT Property Donation

- The CDOT Right-of-Way (R.O.W.) Section should be contacted at the onset to establish requirements of property donation.
  - The proposed property donation should be discussed with the Survey/R.O.W. Plans Supervisor.
- The latest set of CDOT R.O.W. Plans in the area of the proposed property donation shall be obtained from CDOT.
- A title commitment for the property shall be provided to CDOT.
  - The title commitment shall be within (or updated to within) 90 days of the final transaction.
  - Supporting deeds and documents shall be included with the policy unless otherwise approved.
- An exhibit depicting the property donation shall be provided to CDOT. The exhibit:
  - must meet the minimum requirements for "Survey Plats" in the Colorado Revised Statutes (CRS)38-51-106;
  - shall depict all proposed improvements that affect or are within the vicinity of the property to be donated;
  - shall depict the new CDOT R.O.W. boundary line and the monuments set or "to be set" in their new locations;
  - shall depict all rights-of-way or easements that affect the donated property;
  - shall be annotated with the appropriate math to find the monuments on the ground;
  - shall include reference to the project number of the R.O.W. Plans that were used to determine the existing R.O.W.;
  - shall be deposited in the records of the appropriate County after the monuments are set.
- A property description of the donated property shall be provided to CDOT.
  - The description shall be labeled as "Exhibit 'A'
  - The description shall show authors name and address as per CRS 38-35-106.5
  - When created by a land surveyor, the description shall show the surveyors signature and seal as per CRS 12-25-217(2)
  - Monuments shall be established and set along the new CDOT R.O.W. boundary line. The monuments set shall meet the minimum standards of CRS 38-51-104, being reasonably durable monuments solidly embedded in the ground.
  - If requested, CDOT will provide CDOT Standard (Type 1) R.O.W. Monuments to be set.

Performance Bond Process Guidelines

The Permittee is responsible to obtain and fund the performance bond in conformance with the State Highway Access Code and these Guidelines.

General Bond Requirements

1) The Permittee will provide CDOT with a performance bond for an amount equal to 110% of the cost necessary to complete the project in accordance with the access permit terms and conditions, as estimated by the Engineer of Record (EOR) and approved by CDOT.
2) The bond shall incorporate access permit(s) and any design waivers by reference.
3) The bond company must be licensed to do business in Colorado.
4) The bond shall include the name, title, address and statement that the agent is approved to serve as an agent for /on behalf of the bond company.
5) CDOT needs a statement from the Permittee that includes:
   a) The Permittee has authorized the person who is their representative to serve as its agent for the purposes of the bond.
   b) The name, address and title of the agent serving as representative for the Permittee.
6) The bond shall include a binding statement that the bond company will pay for completion of the project in accordance with Access Permit terms and conditions - must be binding on heirs, executors and assigns.
7) The performance bond can be extended only if CDOT agrees to extend the bond.

Bond Terms and Conditions for Draws

CDOT may draw from the performance bond when any one or more of the following conditions occur:

1) Construction activity ceases for an unreasonable amount of time not due to forces of nature or other crisis not of the contractor's making prior to completion of permitted improvements.
2) The project is not completed with in the permitted timeframe (initial or as later extended in writing by CDOT).
3) The Permittee notifies CDOT that the construction will not be completed in accordance with permit requirements.
4) The completed project does not reasonably conform to Access Permit terms and conditions.

Process to Draw Bond

1) **CDOT Notification**
   CDOT will notify the Permittee, EOR, and bond agent in writing when any of the conditions for draw are met, and CDOT is contemplating making a draw request. The CDOT notification letter will include:
   a) Permit Number and Project Location.
   b) Reason for draw (condition that was met).
   c) Amount and basis of draw amount.

d) Statement that additional draws may be necessary for reasons as stated in the (this) notification letter.

CDOT may stop the bond withdrawal process if the conditions for draw are resolved to CDOT's satisfaction.

2) Partial Draws

a) CDOT will draw an amount of the performance bond funds commensurate with the amount of money necessary for CDOT to complete the required improvements. This could include the cost it would take for CDOT to hire the work out, including Davis-Bacon Act wages, etc.
b) CDOT will determine the funding necessary to finish the permitted improvements based on field review, testing reports, and an engineer's estimate of the cost to complete the project in accordance with Access Permit terms and conditions.
c) CDOT will release remaining bond funds once all required improvements have been completed in accordance with Access Permit terms and conditions.

3) Partial Release

a) If CDOT draws from the bond amount and completes the construction, and the Engineer of Record submits a statement certifying that the completed project is in accordance with Access Permit terms and conditions, then CDOT will release remaining bond funds with a Letter of Acceptance once all permitted improvements have been completed by CDOT
b) CDOT will release partial bond amounts for a planned phased improvement. The release will occur at the end of each identified phase, in accordance with the conditions listed in the next section (full release).

4) Full Release

CDOT will fully release the performance bond when the conditions for CDOT initial acceptance are met, including:

a) CDOT review and acceptance of construction, including punch list items;
b) CDOT receipt of as-built plans (if necessary due to changes); and
c) The Engineer of Record submits a statement certifying that the completed project is in accordance with Access Permit terms and conditions.

DESIGN ELEMENTS FOR COMPLETING HIGHWAY IMPROVEMENT PLANS FOR ACCESS
January 2006

Introduction

This is a design aid listing elements that may be necessary to prepare a compete set of plans necessary to design and construct access related highway improvements. The scale of the improvement project and complexity of the topography will determine, in part, the necessary elements of the plan set.

Title Sheet

- ☐ Standard Project Information (i.e. Subdivision Name, Permittee Name, Etc.)
- ☐ State Highway Number
- ☐ County/City Name
- ☐ State Highway Access Permit Number
- ☐ Index of Sheets
- ☐ Vicinity map showing the highway improvements location, including Township, Range. and Section.
- ☐ Index of Revisions
- ☐ Length and Design Data

Standard Plans List Sheet

- ☐ Use CDOT Standard Plans Table of Contents dated Oct. 2000 to indicate the standards to be used on the project. Please obtain the latest revisions to the standards and attach them to the plans. The latest revisions can be obtained at http://www.dot.state.co.us/DesignSupport/.

Typical Cross Section Elements

- ☐ Show the existing surfacing width and lane designations.
- ☐ The typical section scale shall be 1" = 5' (horizontal and vertical).
- ☐ Show the existing ground-line a minimum often (10) feet past the proposed widening or right of way, whichever is greater.
- ☐ Show the proposed widening and surfacing including the depth of each layer.
- ☐ Provide the proposed widths for median, lanes, and shoulders. Typical widths are: Median = 16', Lane = 12', and Shoulder = 4' adjacent an auxiliary lane, and 8' adjacent to through lanes unless on NHS highways then 10' shoulder should be used.
- ☐ "Z" section should be 6' -8' wide on a 6:1 slope.
- ☐ Use 6:1 or 4:1 slopes to the catch point or to the bottom of the ditch. With CDOT approval the slope may be steepened to 3: 1 maximum.
- ☐ Show the location and depth of topsoil.
- ☐ Provide material and specification recommendations from Materials Engineer.

General Notes Sheet

- ☐ Provide general surfacing, earthwork, traffic, utility, structures and construction notes.
- ☐ Provide seeding and mulching plan or a landscape plan (including irrigation).

Summary of Approximate Quantities

- ☐ Provide tabulations of all appropriate quantities used on the project.

Plan and Profile Sheets

- ☐ The plans scale shall be one of the following scales: 1 " =20' or 1 " =50'. Use 1"=20' in urban areas or as authorized.
- ☐ Show and label the existing centerline of the highway and proposed centerline, if different.
- ☐ Show and label the curve data if a portion of the project is on a curve.
- ☐ Provide superelevation information.
- ☐ Show and label the survey line or the base line. .
- ☐ Use CDOT plan stationing if possible and provide survey ties to most recent project.
- ☐ Show and label the existing edge of pavement.
- ☐ Show and label the proposed edge of pavement.
- ☐ Include sufficient Match-line lengths to determine proper intersection alignment. (i.e. 800- 1000 feet beyond project limits).
- ☐ Show and label the access width and the access radii.
- ☐ Speed change lanes (auxiliary lanes) shall be designed in accordance with the State Highway Access Code (2CCR601-1) for the appropriate category of highway.
- ☐ Indicate the posted speed for the section of the highway. If there are over lapping speed zones, show the locations of the speed limit signs. The design of auxiliary lanes is based on the current posted speed, and not what it may be posted in the future.
- ☐ Show the top of cuts and the toe of fills using CDOT standard symbols. **(Do not use contours)**.
- ☐ Show and label side drain size, type, and length.
- ☐ Show and label the existing and proposed drainage facilities. Including sizes, types, flows, invert elevations, etc.
- ☐ Show the profile of the access. The access must slope down from the highway for a minimum of 20 feet on a 2% grade for any access that is not a curb cut. Vertical curve data is also required.
- ☐ Show the existing right-of-way line.
- ☐ Dedication of right-of-way may be necessary to accommodate the highway improvements. See attached checklist for items necessary to dedicate right of way.
- ☐ Show all of the significant topography.
- ☐ Show and label all existing and proposed utility locations.
- ☐ Show and label existing guardrail.
- ☐ Show and label proposed guardrail.

Existing Signing and Striping Sheets

- ☐ Show and label all signs (size, type, and legend).

- ☐ Show and label all striping (width and color).
- ☐ Include sufficient Match-line lengths to determine proper intersection alignment. (i.e. 800- 1000 feet beyond project limits).
- ☐ Show and label the lane widths; turn lane lengths; and taper lengths.

Proposed Signing and Striping Sheets

- ☐ Show and label all signs (size, type, and legend).
- ☐ Show and label all striping (width and color).
- ☐ Include sufficient Match-line lengths to determine proper intersection alignment. (i.e. 800- 1000 feet beyond project limits).
- ☐ Show and label the lane widths; turn lane lengths; and taper lengths.

Detail Sheets

- ☐ Provide details of all items not CDOT standard (i.e. inlets, curb and gutter, etc.). These may be local agencies standards.

Survey Control Sheet

Structural Cross Section Elements

- ☐ Show and label the existing surfacing width.
- ☐ The typical cross section scale shall be 1" = 5' (horizontal & vertical).
- ☐ Show and label the existing pipe and the original ground line a minimum of 10' past the proposed pipe extension.
- ☐ Show and label the proposed pipe extension (including type) and proposed grading associated with the extension.
- ☐ Show and label the dimension of the section and indicate any skew of the structure.
- ☐ Show and label the flowline elevations at inlet and outlet.
- ☐ Show and label the existing right-of-way line.
- ☐ Additional information may be required from CDOT staff bridge depending on the magnitude of the structure and extensions.

Urban Section Elements

- ☐ Provide any applicable elements indicated above.
- ☐ Show and label (including type) of curb and gutter.
- ☐ Show and label curb ramps.
- ☐ Show and label the location of the existing and proposed sidewalks.
- ☐ Check with the local agency for their sidewalk requirements and provide documentation. At a minimum use 4' for detached sidewalk, and 6' for attached sidewalk. Provide detail of sidewalk including thickness.
- ☐ Show the profile of the flowline.
- ☐ Show the existing and proposed locations of street lights, and traffic signal facilities.
- ☐ If a traffic signal needs to be relocated, provide the name of the party responsible for such relocation. If the signal is to be relocated by a contractor, a set of design plans and specifications must be provided.

- ☐ Show the existing and proposed storm drain facilities.
- ☐ Lane widths are exclusive of the gutter pan.

General Information

- ☐ The final design plans must be signed, and stamped by a Colorado Registered Professional Engineer. Check with the access manager for the specific number of sets of plans required.

References

The following regulation, design guidelines, standards, and reference materials are also to be used in the development of the plans. Also listed below are selected sections from the design documents that may be used in preparation of the plans .All the necessary documents may not be listed. If there is any discrepancy between the regulation listed below and the other materials, the regulation takes precedence.

- State Highway Access Code (2 CCR 601-1) - A State of Colorado regulation.
- Current edition of CDOT Roadway Design Manual.
- CDOT Materials Manual-
- CDOT Construction Manual.
- CDOT Standard Specifications for Road and Bridge Construction.
- Drainage Design Manual.
- Flagging Booklet.
- CDOT M & S Standards, latest revision, including but not limited to the following
  - a. M -100-1, Standard Symbols
  - b. M-603-1, Metal and Plastic Culvert Pipe
  - c. M-603-10, Concrete and Metal End Sections
  - d. M-606-l & M-606-12, Guardrail
  - e. M-607-1, Fencing
  - f. M-608-1, Curb Ramps
  - g. M-609- 1, Curbs and Gutters
  - h. S-612-1, Delineator Installation
  - i. S-614-1 & S-612-1, Ground Signs
  - j. S-627-1, Typical Pavement Markings
- A Policy on Geometric Design of Highways and Streets, AASHTO.
- AASHTO Roadside Design Guide.
- Highway Drainage Guidelines, AASHTO.
- Manual on Uniform Traffic Control Devices for Streets and Highways.
- Colorado Supplement to the Manual on Uniform Traffic Control Devices for Streets and Highways.

CDOT Publications are available for purchase from:

Colorado Department of Transportation
Bid Plans Room
420 1 East Arkansas Avenue
Denver CO 80222

(303) 757-9313

Some Publications may be found online at : http://www.dot.state.co.us/DesignSupport/ .

COLORADO DEPARTMENT OF TRANSPORTATION
Environmental Clearances Information Summary

PURPOSE - This summary is intended to inform entities external to CDOT that may be entering the state highway right-of-way to perform work related to their own facilities (such as Utility, Special Use or Access Permittees), about some of the more commonly encountered environmental permits/clearances that may apply to their activities. This listing is not all-inclusive - additional environmental or cultural resource permits/clearances may be required in certain instances. Appropriate local, state and federal agencies should be contacted for additional information if there is any uncertainty about what permits/clearances are required for a specific activity. **IMPORTANT – Please Review The Following Information Carefully – Failure to Comply With Regulatory Requirements May Result In Suspension or Revocation of Your CDOT Permit, Or Enforcement Actions By Other Agencies**

CLEARANCE CONTACTS - As indicated in the permit/clearance descriptions listed below, the following individuals or agencies may be contacted for additional information:

- Colorado Department of Public Health and Environment (CDPHE): General Information – (303) 692-2035
  Water Quality Control Division (WQCD): (303) 692-3500
  Environmental Permitting Website http://www.cdphe.state.co.us/permits.asp.
- CDOT Water Quality Program Manager: Rick Willard (303) 757-9343 http://www.coloradodot.info/programs/environmental/water-quality
- CDOT Asbestos Project Manager: Theresa Santangelo-Dreiling, (303) 512-5524
- Colorado Office of Archaeology and Historic Preservation: (303) 866-3395
- U.S. Army Corps of Engineers, District Regulatory Offices:
  Omaha District (NE Colorado), Denver Office (303) 979-4120 http://www.nwo.usace.army.mil/html/od-tl/tri-lakes.html
  Sacramento Dist. (Western CO), Grand Junction Office (970) 243-1199 http://www.spk.usace.army.mil/cespk-co/regulatory/
  Albuquerque District (SE Colorado), Pueblo Reg. Office (719)-543-6915 http://www.spa.usace.army.mil/reg/
- CDOT Utilities, Special Use and Access Permitting: (303) 757-9654 http://www.dot.state.co.us/Permits/

Ecological Resources – Disturbance of wildlife shall be avoided to the maximum extent practicable. Entry into areas of known or suspected threatened or endangered species habitat will require special authorization from the CDOT permitting office. If any threatened or endangered species are encountered during the progress of the permitted work, work in the subject area shall be halted and the CDOT Regional Permitting Office and Region Planning and Environmental Manager shall be contacted immediately. Authorization must be provided by CDOT prior to the continuation of work. Information about threatened or endangered species may be obtained from the CDOT website, http://coloradodot.info/programs/environmental/wildlife/guidelines, or the Colorado Division of Wildlife website http://wildlife.state.co.us/WildlifeSpecies/SpeciesOfConcern/. Additional guidance may be provided by the appropriate Region Planning and Environmental Manager (RPEM).

Cultural Resources – The applicant must request a file search of the permit area through the Colorado Office of Archaeology and Historic Preservation (OAHP), Denver, to ascertain if historic or archaeological resources have previously been identified. Inventory of the permit area by a qualified cultural resources specialist may be necessary, per the recommendation of CDOT. If archaeological sites/artifacts or historic resources are known to exist prior to the initiation of the permitted work or are encountered as the project progresses, all work in the subject area shall be halted and the CDOT Regional Permitting Office and Region Planning and Environmental Manager shall be contacted immediately. Authorization must be provided by CDOT prior to the continuation of work. Additional guidance may be provided by the Regional Permitting Office and RPEM. ***Contact Information:*** Contact the OAHP for file search at (303) 866-3395.

Paleontological Resources - The applicant must request a fossil locality file search through the University of Colorado Museum, Boulder, and the Denver Museum of Nature and Science to ascertain if paleontological resources have been previously identified. Inventory of the permit area by a qualified paleontologist may be necessary, per the recommendation of CDOT. If fossils are encountered during the permitted work, all work in the subject area shall be halted and the CDOT Regional Permitting Office and Region Planning and Environmental Manager shall be contacted immediately. Authorization must be provided by CDOT prior to the continuation of work. Additional guidance may be provided by the Regional Permitting Office in the Permit Special Provisions. **Contact Information:** Contact the CDOT Paleontologist at (303) 757-9632.

Hazardous Materials, Solid Waste - The Solid Wastes Disposal Sites and Facilities Act C.R.S. 30-20-100, et al, and Regulations Pertaining to Solid Waste Disposal Sites and Facilities (6 CCR 1007-2), prohibit solid waste disposal without an approved Certificate of Designation (a landfill permit). The Colorado Hazardous Waste Act C.R.S. 25-15-301 et al, and the Colorado Hazardous Waste Regulations (6 CCR 1007-3) prohibit the transfer, storage or disposal (TSD) of hazardous waste except at permitted TSD sites. There are no permitted landfills or TSD sites within the State Highway Right of Way. Therefore, all solid or hazardous wastes that might be generated by the activities of entities entering the State Highway Right of Way must be removed from the ROW and disposed of at a permitted facility or designated collection point (e.g., for solid waste, a utility or construction company's own dumpster). If pre-existing solid waste or hazardous materials contamination (including oil or petroleum contaminated soil, asbestos, chemicals, mine tailings, etc.) is encountered during the performance of work, the permittee shall halt work in the affected area and immediately contact the CDOT Regional Permitting Office for direction as to how to proceed. ***Contact Info:*** Andy Flurkey, CDOT Hazardous Materials Project Manager, (303) 512-5520.

Asbestos Containing Materials, Asbestos Contaminated Soil – All work on asbestos containing materials (ACM) must comply with the applicable requirements of the CDPHE Air Pollution Control Division's (APCD) Regulation 8. Disposal of ACM, and work done in asbestos-contaminated soil, must comply with the CDPHE Hazardous Materials and Waste Management Division's (HMWMD) Solid Waste Regulations. The application for any CDOT permit must specifically identify any ACM involved in the work for which authorization is being requested. Additional guidance or requirements may be specified in the permit special provisions. ***Contact Info:*** CDPHE APCD and HMWMD Regulations can be accessed via the CDPHE Environmental Permitting Website listed above. Additional information concerning clearance on CDOT projects is available from the CDOT Asbestos Project Manager (303) 512-5519, or Theresa Santangelo-Dreiling, Property Management Supervisor (303) 512-5524.

Transportation of Hazardous Materials - No person may offer or accept a hazardous material for transportation in commerce unless that person is registered in conformance with the United States Department of Transportation regulations at 49 CFR, Part 171. The hazardous material must be properly classed, described, packaged, marked, labeled, and in condition for shipment as required or authorized by applicable requirements, or an exemption, approval or registration has been issued. Vehicles requiring a placard, must obtain authorization and a State HAZMAT Permit from the Colorado Public Utilities Commission. ***Contact Information:*** For authorization and more info call the Federal Motor Safety Carrier Administration, US DOT for inter- and intra-state HAZMAT Registration (303) 969-6748. Colorado Public Utilities Commission: (303) 894-2868.

Discharge of Dredged or Fill Material – 404 Permits Administered By the U.S. Army Corps of Engineers, and Section 401 Water Quality Certifications Issued by the CDPHE WQCD - Corps of Engineers 404 Permits are required for the discharge of dredged or fill materials into waters of the United States, including wetlands. There are various types of 404 Permits, including Nationwide Permits, which are issued for activities with relatively minor impacts. For example, there is a Nationwide Permit for Utility Line Activities (NWP #12). However, depending upon the specific circumstances, it is possible that either a "General" or "Individual" 404 permit would be required. If an Individual 404 Permit is required, Section 401 water quality certification from the CDPHE WQCD is also required. Contact the appropriate Corps District Regulatory Office for information about what type of 404 permit may be required (contact information above). Contact the CDPHE Water Quality Control Division at (303) 692-3500.

Working on or in any stream or its bank - In order to protect and preserve the state's fish and wildlife resources from actions that may obstruct, diminish, destroy, change, modify, or vary a natural existing stream or its banks or tributaries, it may be necessary to obtain a Senate Bill 40 certification from the Colorado Department of Natural Resources. A stream is defined as 1) represented by a solid blue line on USGS 7.5' quadrangle maps; and/or 2) intermittent streams providing live water beneficial to fish and wildlife; and/or 3) segments of streams supporting 25% or more cover within 100 yards upstream or downstream of the project; and/or 4) segments of streams having wetlands present within 200 yards upstream or downstream of the project. The Colorado Division of Wildlife (CDOW) application, as per guidelines agreed upon by CDOT and CDOW, can be accessed at http://www.coloradodot.info/programs/environmental/wildlife/guidelines.

Stormwater Construction Permit (SCP) and Stormwater Discharge From Industrial Facilities - Discharges of stormwater runoff from construction sites disturbing one acre or more - or certain types of industrial facilities, such as concrete batch plants - requires a CDPS Stormwater Construction Permit. ***Contact Information:*** For Utility/Special Use activities being performed in conjunction and coordination with a CDOT highway construction contract, please contact the CDOT Water Quality Program Manager at (303) 757-9343. Otherwise, contact the CDPHE Water Quality Control Division at (303) 692-3500. Website: http://www.cdphe.state.co.us/wq/PermitsUnit/index.html.

Construction Dewatering (Discharge or Infiltration) – Discharges of water encountered during excavation or work in wet areas may require a Construction Dewatering Discharge Permit. ***Contact Information:*** For Construction Dewatering Discharge Permits, contact the CDPHE WQCD at (303) 692-3500. For Dewatering Application and Instructions, see Section 3 at the CDPHE website: http://www.cdphe.state.co.us/wq/PermitsUnit/FORMSandApplications/Appsandformsnewpage.html

Municipal Separate Storm Sewer System (MS4) Discharge Permit – Discharges from the storm sewer systems of larger municipalities, and from the CDOT highway drainage system that lies within those municipalities, are subject to MS4 Permits issued by the CDPHE WQCD. For facilities that lie within the boundaries of a municipality that is subject to an MS4 permit, the owner of such facility should contact the municipality regarding stormwater related clearances that may have been established under that municipality's MS4 permit. All discharges to the CDOT highway drainage system or within the Right of Way (ROW) must comply with the applicable provisions of the Colorado Water Quality Control Act and the Colorado Discharge Permit Regulations Permit # COS-000005 (http://www.coloradodot.info/programs/environmental/water-quality/documents/CDOT%20MS4%20Permit.doc/view) and COR-030000 (http://www.cdphe.state.co.us/wq/PermitsUnit/PERMITs/SWpermitsrats/SWConstructionPErmit.pdf). Discharges are subject to inspection by CDOT and CDHPE. Contact the CDPHE Water Quality Control Division at (303) 692-3500 for a listing of municipalities required to obtain MS4 Permits, or go to http://www.cdphe.state.co.us/wq/permitsunit/MS4/MS4Permittees.pdf.

General Prohibition – Discharges - All discharges are subject to the provisions of the Colorado Water Quality Control Act and the Colorado Discharge Permit Regulations. Prohibited discharges include, but are not limited to, substances such as wash water, paint, automotive fluids, solvents, oils or soaps and sediment. Allowable non-stormwater discharges can be found at http://www.coloradodot.info/programs/environmental/water-quality/glossary.html#AllowableDischarge. ***Contact Information:*** Contact the CDOT Water Quality Program Manager at (303) 757-9343, or the Colorado Department of Public Health and Environment, Water Quality Control Division at (303) 692-3500.

General Authorization - Allowable Non-Stormwater Discharges - Unless otherwise identified by CDOT or the WQCD as significant sources of pollutants to the waters of the State, the following discharges to stormwater systems are allowed without a Colorado Discharge Permit System permit: landscape irrigation, diverted stream flows, uncontaminated ground water infiltration to separate storm sewers, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, uncontaminated springs, footing drains; water line flushing, flows from riparian habitats and wetlands, and flow from fire fighting activities. ***Contact Information:*** The CDOT Water Quality Program Manager or the CDPHE Water Quality Control Division (telephone #'s listed above).

Erosion and Sediment Control Practices - For activities requiring a Stormwater Construction Permit, erosion control requirements will be specified through that permit. In those situations where a stormwater permit is not required, all reasonable measures should be taken in order to minimize erosion and sedimentation according to CDOT 208 specifications. In either case, the CDOT Erosion Control and Stormwater Quality Guide (most recent version) should be used to design erosion controls and to restore disturbed vegetation. ***Contact Information:*** The CDOT Erosion Control and Stormwater Quality Guide may be obtained from the Bid Plans Office at (303) 757-9313 or from: http://www.dot.state.co.us/environmental/envWaterQual/wqms4.asp

Disposal of Drilling Fluids - Drilling fluids used in operations such as Horizontal Directional Drilling may be classified as "discharges" or "solid wastes", and in general, should be pumped or vacuumed from the construction area, removed from the State Highway Right of Way, and disposed of at permitted facilities that specifically accept such wastes. Disposal of drilling fluids into storm drains, storm sewers, roadside ditches or any other type of man-made or natural waterway is prohibited by Water Quality Control and/or Solid Waste regulations. Small quantities of drilling fluid solids (less than 1 cubic yard of solids) may be left on-site after either being

separated from fluids or after infiltration of the water, provided: 1) the drilling fluid consists of only water and bentonite clay, or, if required for proper drilling properties, small quantities of polymer additives that are approved for use in drinking water well drilling; 2) the solids are fully contained in a pit, and are not likely to pose a nuisance to future work in the area, 3) the solids are covered and the area restored as required by CDOT permit requirements (Utility, Special Use, or Access Permits, etc.). ***Contact Information:*** Contact the CDOT / CDPHE Liaison or CDOT Water Quality Program Manager.
Concrete Washout - Waste generated from concrete activities shall NOT be allowed to flow into the drainage ways, inlets, receiving waters, or in the CDOT ROW. Concrete waste shall be placed in a temporary concrete washout facility and must be located a minimum of 50 feet from state waters, drainageways, and inlets. Concrete washout shall only be performed as specified by the CDOT Environmental Program and shall be in accordance to CDOT specifications and guidelines. ***Contact Information:*** Contact the CDOT Water Quality Program Manager at (303) 757-9343. Website: http://www.coloradodot.info/programs/environmental/water-quality/revised-m-standards; refer to the link *Revision of Sections 101, 107, 208, 213 and 620 Water Quality Control One or More Acres of Disturbance* for additional guidance.
Spill Reporting - Spills shall be contained and cleaned up as soon as possible. Spills shall NOT be washed down into the storm drain or buried. All spills shall be reported to the CDOT Illicit Discharge Hotline at (303) 512-4446 (4H20), as well as the Regional Permitting Office and Regional Maintenance Supervisor. Spills on highways, into waterways, any spill in the highway right-of-way exceeding 25 gallons, or that may otherwise present an immediate danger to the public shall be reported by calling 911, and shall also be reported to the CDPHE at 1-877-518-5608.
About This Form - Questions or comments about this Information Summary may be directed to Alex Karami, CDOT Safety & Traffic Engineering, Utilities Unit, at (303) 757-9841, alex.karami@dot.state.co.us.

COLORADO DEPARTMENT OF TRANSPORTATION
Environmental Clearances Information Summary

PURPOSE - This summary is intended to inform entities external to CDOT that may be entering the state highway right-of-way to perform work related to their own facilities (such as Utility, Special Use or Access Permittees), about some of the more commonly encountered environmental permits/clearances that may apply to their activities. This listing is not all-inclusive - additional environmental or cultural resource permits/clearances may be required in certain instances. Appropriate local, state and federal agencies should be contacted for additional information if there is any uncertainty about what permits/clearances are required for a specific activity. **IMPORTANT – Please Review The Following Information Carefully – Failure to Comply With Regulatory Requirements May Result In Suspension or Revocation of Your CDOT Permit, Or Enforcement Actions By Other Agencies**

CLEARANCE CONTACTS - As indicated in the permit/clearance descriptions listed below, the following individuals or agencies may be contacted for additional information:

- Colorado Department of Public Health and Environment (CDPHE): General Information – (303) 692-2035
  Water Quality Control Division (WQCD): (303) 692-3500
  Environmental Permitting Website http://www.cdphe.state.co.us/permits.asp.
- CDOT Water Quality Program Manager: Rick Willard (303) 757-9343 http://www.coloradodot.info/programs/environmental/water-quality
- CDOT Asbestos Project Manager: Theresa Santangelo-Dreiling, (303) 512-5524
- Colorado Office of Archaeology and Historic Preservation: (303) 866-3395
- U.S. Army Corps of Engineers, District Regulatory Offices:
  Omaha District (NE Colorado), Denver Office (303) 979-4120 http://www.nwo.usace.army.mil/html/od-tl/tri-lakes.html
  Sacramento Dist. (Western CO), Grand Junction Office (970) 243-1199 http://www.spk.usace.army.mil/cespk-co/regulatory/
  Albuquerque District (SE Colorado), Pueblo Reg. Office (719)-543-6915 http://www.spa.usace.army.mil/reg/
- CDOT Utilities, Special Use and Access Permitting: (303) 757-9654 http://www.dot.state.co.us/Permits/

Ecological Resources – Disturbance of wildlife shall be avoided to the maximum extent practicable. Entry into areas of known or suspected threatened or endangered species habitat will require special authorization from the CDOT permitting office. If any threatened or endangered species are encountered during the progress of the permitted work, work in the subject area shall be halted and the CDOT Regional Permitting Office and Region Planning and Environmental Manager shall be contacted immediately. Authorization must be provided by CDOT prior to the continuation of work. Information about threatened or endangered species may be obtained from the CDOT website, http://coloradodot.info/programs/environmental/wildlife/guidelines, or the Colorado Division of Wildlife website http://wildlife.state.co.us/WildlifeSpecies/SpeciesOfConcern/. Additional guidance may be provided by the appropriate Region Planning and Environmental Manager (RPEM).

Cultural Resources – The applicant must request a file search of the permit area through the Colorado Office of Archaeology and Historic Preservation (OAHP), Denver, to ascertain if historic or archaeological resources have previously been identified. Inventory of the permit area by a qualified cultural resources specialist may be necessary, per the recommendation of CDOT. If archaeological sites/artifacts or historic resources are known to exist prior to the initiation of the permitted work or are encountered as the project progresses, all work in the subject area shall be halted and the CDOT Regional Permitting Office and Region Planning and Environmental Manager shall be contacted immediately. Authorization must be provided by CDOT prior to the continuation of work. Additional guidance may be provided by the Regional Permitting Office and RPEM. ***Contact Information:*** Contact the OAHP for file search at (303) 866-3395.

Paleontological Resources - The applicant must request a fossil locality file search through the University of Colorado Museum, Boulder, and the Denver Museum of Nature and Science to ascertain if paleontological resources have been previously identified. Inventory of the permit area by a qualified paleontologist may be necessary, per the recommendation of CDOT. If fossils are encountered during the permitted work, all work in the subject area shall be halted and the CDOT Regional Permitting Office and Region Planning and Environmental Manager shall be contacted immediately. Authorization must be provided by CDOT prior to the continuation of work. Additional guidance may be provided by the Regional Permitting Office in the Permit Special Provisions. **Contact Information:** Contact the CDOT Paleontologist at (303) 757-9632.

Hazardous Materials, Solid Waste - The Solid Wastes Disposal Sites and Facilities Act C.R.S. 30-20-100, et al, and Regulations Pertaining to Solid Waste Disposal Sites and Facilities (6 CCR 1007-2), prohibit solid waste disposal without an approved Certificate of Designation (a landfill permit). The Colorado Hazardous Waste Act C.R.S. 25-15-301 et al, and the Colorado Hazardous Waste Regulations (6 CCR 1007-3) prohibit the transfer, storage or disposal (TSD) of hazardous waste except at permitted TSD sites. There are no permitted landfills or TSD sites within the State Highway Right of Way. Therefore, all solid or hazardous wastes that might be generated by the activities of entities entering the State Highway Right of Way must be removed from the ROW and disposed of at a permitted facility or designated collection point (e.g., for solid waste, a utility or construction company's own dumpster). If pre-existing solid waste or hazardous materials contamination (including oil or petroleum contaminated soil, asbestos, chemicals, mine tailings, etc.) is encountered during the performance of work, the permittee shall halt work in the affected area and immediately contact the CDOT Regional Permitting Office for direction as to how to proceed. ***Contact Info:*** Andy Flurkey, CDOT Hazardous Materials Project Manager, (303) 512-5520.

Asbestos Containing Materials, Asbestos Contaminated Soil – All work on asbestos containing materials (ACM) must comply with the applicable requirements of the CDPHE Air Pollution Control Division's (APCD) Regulation 8. Disposal of ACM, and work done in asbestos-contaminated soil, must comply with the CDPHE Hazardous Materials and Waste Management Division's (HMWMD) Solid Waste Regulations. The application for any CDOT permit must specifically identify any ACM involved in the work for which authorization is being requested. Additional guidance or requirements may be specified in the permit special provisions. ***Contact Info:*** CDPHE APCD and HMWMD Regulations can be accessed via the CDPHE Environmental Permitting Website listed above. Additional information concerning clearance on CDOT projects is available from the CDOT Asbestos Project Manager (303) 512-5519, or Theresa Santangelo-Dreiling, Property Management Supervisor (303) 512-5524.

Transportation of Hazardous Materials - No person may offer or accept a hazardous material for transportation in commerce unless that person is registered in conformance with the United States Department of Transportation regulations at 49 CFR, Part 171. The hazardous material must be properly classed, described, packaged, marked, labeled, and in condition for shipment as required or authorized by applicable requirements, or an exemption, approval or registration has been issued. Vehicles requiring a placard, must obtain authorization and a State HAZMAT Permit from the Colorado Public Utilities Commission. ***Contact Information:*** For authorization and more info call the Federal Motor Safety Carrier Administration, US DOT for inter- and intra-state HAZMAT Registration (303) 969-6748. Colorado Public Utilities Commission: (303) 894-2868.

Discharge of Dredged or Fill Material – 404 Permits Administered By the U.S. Army Corps of Engineers, and Section 401 Water Quality Certifications Issued by the CDPHE WQCD - Corps of Engineers 404 Permits are required for the discharge of dredged or fill materials into waters of the United States, including wetlands. There are various types of 404 Permits, including Nationwide Permits, which are issued for activities with relatively minor impacts. For example, there is a Nationwide Permit for Utility Line Activities (NWP #12). However, depending upon the specific circumstances, it is possible that either a "General" or "Individual" 404 permit would be required. If an Individual 404 Permit is required, Section 401 water quality certification from the CDPHE WQCD is also required. Contact the appropriate Corps District Regulatory Office for information about what type of 404 permit may be required (contact information above). Contact the CDPHE Water Quality Control Division at (303) 692-3500.

Working on or in any stream or its bank - In order to protect and preserve the state's fish and wildlife resources from actions that may obstruct, diminish, destroy, change, modify, or vary a natural existing stream or its banks or tributaries, it may be necessary to obtain a Senate Bill 40 certification from the Colorado Department of Natural Resources. A stream is defined as 1) represented by a solid blue line on USGS 7.5' quadrangle maps; and/or 2) intermittent streams providing live water beneficial to fish and wildlife; and/or 3) segments of streams supporting 25% or more cover within 100 yards upstream or downstream of the project; and/or 4) segments of streams having wetlands present within 200 yards upstream or downstream of the project. The Colorado Division of Wildlife (CDOW) application, as per guidelines agreed upon by CDOT and CDOW, can be accessed at http://www.coloradodot.info/programs/environmental/wildlife/guidelines.

Stormwater Construction Permit (SCP) and Stormwater Discharge From Industrial Facilities - Discharges of stormwater runoff from construction sites disturbing one acre or more - or certain types of industrial facilities, such as concrete batch plants - requires a CDPS Stormwater Construction Permit. ***Contact Information:*** For Utility/Special Use activities being performed in conjunction and coordination with a CDOT highway construction contract, please contact the CDOT Water Quality Program Manager at (303) 757-9343. Otherwise, contact the CDPHE Water Quality Control Division at (303) 692-3500. Website: http://www.cdphe.state.co.us/wq/PermitsUnit/index.html.

Construction Dewatering (Discharge or Infiltration) – Discharges of water encountered during excavation or work in wet areas may require a Construction Dewatering Discharge Permit. ***Contact Information:*** For Construction Dewatering Discharge Permits, contact the CDPHE WQCD at (303) 692-3500. For Dewatering Application and Instructions, see Section 3 at the CDPHE website: http://www.cdphe.state.co.us/wq/PermitsUnit/FORMSandApplications/Appsandformsnewpage.html

Municipal Separate Storm Sewer System (MS4) Discharge Permit – Discharges from the storm sewer systems of larger municipalities, and from the CDOT highway drainage system that lies within those municipalities, are subject to MS4 Permits issued by the CDPHE WQCD. For facilities that lie within the boundaries of a municipality that is subject to an MS4 permit, the owner of such facility should contact the municipality regarding stormwater related clearances that may have been established under that municipality's MS4 permit. All discharges to the CDOT highway drainage system or within the Right of Way (ROW) must comply with the applicable provisions of the Colorado Water Quality Control Act and the Colorado Discharge Permit Regulations Permit # COS-000005 (http://www.coloradodot.info/programs/environmental/water-quality/documents/CDOT%20MS4%20Permit.doc/view) and COR-030000 (http://www.cdphe.state.co.us/wq/PermitsUnit/PERMITs/SWpermitsrats/SWConstructionPErmit.pdf). Discharges are subject to inspection by CDOT and CDHPE. Contact the CDPHE Water Quality Control Division at (303) 692-3500 for a listing of municipalities required to obtain MS4 Permits, or go to http://www.cdphe.state.co.us/wq/permitsunit/MS4/MS4Permittees.pdf.

General Prohibition – Discharges - All discharges are subject to the provisions of the Colorado Water Quality Control Act and the Colorado Discharge Permit Regulations. Prohibited discharges include, but are not limited to, substances such as wash water, paint, automotive fluids, solvents, oils or soaps and sediment. Allowable non-stormwater discharges can be found at http://www.coloradodot.info/programs/environmental/water-quality/glossary.html#AllowableDischarge. ***Contact Information:*** Contact the CDOT Water Quality Program Manager at (303) 757-9343, or the Colorado Department of Public Health and Environment, Water Quality Control Division at (303) 692-3500.

General Authorization - Allowable Non-Stormwater Discharges - Unless otherwise identified by CDOT or the WQCD as significant sources of pollutants to the waters of the State, the following discharges to stormwater systems are allowed without a Colorado Discharge Permit System permit: landscape irrigation, diverted stream flows, uncontaminated ground water infiltration to separate storm sewers, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, uncontaminated springs, footing drains; water line flushing, flows from riparian habitats and wetlands, and flow from fire fighting activities. ***Contact Information:*** The CDOT Water Quality Program Manager or the CDPHE Water Quality Control Division (telephone #'s listed above).

Erosion and Sediment Control Practices - For activities requiring a Stormwater Construction Permit, erosion control requirements will be specified through that permit. In those situations where a stormwater permit is not required, all reasonable measures should be taken in order to minimize erosion and sedimentation according to CDOT 208 specifications. In either case, the CDOT Erosion Control and Stormwater Quality Guide (most recent version) should be used to design erosion controls and to restore disturbed vegetation. ***Contact Information:*** The CDOT Erosion Control and Stormwater Quality Guide may be obtained from the Bid Plans Office at (303) 757-9313 or from: http://www.dot.state.co.us/environmental/envWaterQual/wqms4.asp

Disposal of Drilling Fluids - Drilling fluids used in operations such as Horizontal Directional Drilling may be classified as "discharges" or "solid wastes", and in general, should be pumped or vacuumed from the construction area, removed from the State Highway Right of Way, and disposed of at permitted facilities that specifically accept such wastes. Disposal of drilling fluids into storm drains, storm sewers, roadside ditches or any other type of man-made or natural waterway is prohibited by Water Quality Control and/or Solid Waste regulations. Small quantities of drilling fluid solids (less than 1 cubic yard of solids) may be left on-site after either being

separated from fluids or after infiltration of the water, provided: 1) the drilling fluid consists of only water and bentonite clay, or, if required for proper drilling properties, small quantities of polymer additives that are approved for use in drinking water well drilling; 2) the solids are fully contained in a pit, and are not likely to pose a nuisance to future work in the area, 3) the solids are covered and the area restored as required by CDOT permit requirements (Utility, Special Use, or Access Permits, etc.). ***Contact Information:*** Contact the CDOT / CDPHE Liaison or CDOT Water Quality Program Manager.
Concrete Washout - Waste generated from concrete activities shall NOT be allowed to flow into the drainage ways, inlets, receiving waters, or in the CDOT ROW. Concrete waste shall be placed in a temporary concrete washout facility and must be located a minimum of 50 feet from state waters, drainageways, and inlets. Concrete washout shall only be performed as specified by the CDOT Environmental Program and shall be in accordance to CDOT specifications and guidelines. ***Contact Information:*** Contact the CDOT Water Quality Program Manager at (303) 757-9343. Website: http://www.coloradodot.info/programs/environmental/water-quality/revised-m-standards; refer to the link *Revision of Sections 101, 107, 208, 213 and 620 Water Quality Control One or More Acres of Disturbance* for additional guidance.
Spill Reporting - Spills shall be contained and cleaned up as soon as possible. Spills shall NOT be washed down into the storm drain or buried. All spills shall be reported to the CDOT Illicit Discharge Hotline at (303) 512-4446 (4H20), as well as the Regional Permitting Office and Regional Maintenance Supervisor. Spills on highways, into waterways, any spill in the highway right-of-way exceeding 25 gallons, or that may otherwise present an immediate danger to the public shall be reported by calling 911, and shall also be reported to the CDPHE at 1-877-518-5608.
About This Form - Questions or comments about this Information Summary may be directed to Alex Karami, CDOT Safety & Traffic Engineering, Utilities Unit, at (303) 757-9841, alex.karami@dot.state.co.us.

STATE OF COLORADO

Region 2 Traffic Section
905 Erie Ave., P.O. Box 536
Pueblo, Colorado 81002
(719) 546-5407 Fax:(719) 562-5523

DEPARTMENT OF TRANSPORTATION

RECEIVED
SEP 6 - 2012
LSC

Permit No. **212011**

August 30, 2012

To: Jeffrey C. Hodsdon
LSC Transportation Consultants
516 North Tejon Street
Colorado Springs, CO 80903

Dear Permittee or Applicant:

1. Please review the attached State Highway Access Permit (Form #101) and all enclosed attachments.
2. If you choose NOT to act on the permit, please return the permit unsigned.
3. If you wish to APPEAL the Terms and Conditions of the permit, please refer to the attached Form 101, Pages 2 and 3 for an explanation of the appeal procedures.
4. If you ACCEPT the Permit and its Terms and Conditions and are authorized to sign as legal owner of the property or as an authorized representative, please sign and date the Access Permit form on the line marked "PERMITTEE". Your signature confirms your agreement to all the listed Terms and Conditions.
5. Provide a check or money order made out to the jurisdiction named on the next line for the amount due.

   Make check or money order payable to: CDOT Amount Due: $ 300.00

6. **You must return the entire Access Permit, including all pages of terms and conditions and all attachments, along with your payment back to the Colorado Department of Transportation (CDOT) at the address noted below. The Department will process and return to you a signed copy of your State Highway Access Permit. You may retain this cover letter for your records.**
7. If you fail to sign and return the attached Access Permit within 60 days of the date of this transmittal letter, Colorado Department of Transportation will consider this permit withdrawn and void.
8. **As described in the attached Terms and Conditions, you must make a written request to obtain a Notice to Proceed. DO NOT begin any work within the State Highway Right-of-Way without a validated Access Permit and Notice to Proceed. Use of this permit without the Colorado Department of Transportation's validation shall be considered a violation of State Law.**

If you have any questions, please call Valerie Sword, Region 2 Access Manager at (719) 546-5407.

Please return Access Permit and attachments to: Valerie Sword
Region 2 Traffic Section
905 Erie Ave., P.O. Box 536
Pueblo, Colorado 81002

COLORADO DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ACCESS PERMIT

CDOT Permit No. **212011**

State Highway No/Mp/Side 94 A / 15.812 / R

Permit fee	Date of transmittal	Region/Section/Patrol	Local Jurisdiction
$300.00		2 / 04 / Gary Heller/67	El Paso County

Ref No.: 2614

The Permittee(s);

Springs East Land Co, LLC
Simon Malk
12275 El Camino Real, Suite 110
San Diego, CA 92130
858-345-3642

Applicant:

LSC Transportation Consultants
Jeffrey C. Hodsdon
516 North Tejon Street
Colorado Springs, CO 80903
719-633-2868

is hereby granted permission to have an access to the state highway at the location noted below. The access shall be constructed, maintained and used in accordance with this permit, including the State Highway Access Code and any attachments, terms, conditions and exhibits. This permit may be revoked by the issuing authority if at any time the permitted access and its use violate any parts of this permit. The issuing authority, the Department and their duly appointed agents and employees shall be held harmless against any action for personal injury or property damage sustained by reason of the exercise of the permit.

Location: Physical address shown on application is 22555 SH 94. 992 feet west from MP 16

Access to Provide Service to:	(Land Use Code:)	(Size or Count)	(Units)
	Single-Family Detached Housing	98	EACH

Additional Information:

PLEASE READ ALL OF THE ATTACHED TERMS AND CONDITIONS:

MUNICIPALITY OR COUNTY APPROVAL

Required only when the appropriate local authority retains issuing authority.

Signature	Print Name	Title	Date

Upon the signing of this permit the permittee agrees to the terms and conditions and referenced attachments contained herein. All construction shall be completed in an expeditious and safe manner and shall be finished within 45 days from Initiation. The permitted access shall be completed in accordance with the terms and conditions of the permit prior to being used.

The permittee shall notify Todd Ausbun with the Colorado Department of Transportation in Pueblo, Colorado at (719) 546-5758, at least 48 hours prior to commencing construction within the State Highway right-of-way.

The person signing as the permittee must be the owner or legal representative of the property served by the permitted access and have full authority to accept the permit and its terms and conditions.

Permittee Signature	Print Name	Date

This permit is not valid until signed by a duly authorized representative of the Department.
COLORADO DEPARTMENT OF TRANSPORTATION

Signature	Print Name	Title	Date (of issue)

Copy Distribution: Required: 1.Region 2.Applicant 3.Staff Access Section 4.Central Files

Make copies as necessary for: Local Authority, MTCE Patrol, Inspector, Traffic Engineer

Previous editions are obsolete and may not be used

The following paragraphs are excerpts of the State Highway Access Code. These are provided for your convenience but do not alleviate compliance with all sections of the Access Code. A copy of the State Highway Access Code is available from your local issuing authority (local government) or the Colorado Department of Transportation (Department). When this permit was issued, the issuing authority made its decision based in part on information submitted by the applicant, on the access category which is assigned to the highway, what alternative access to other public roads and streets is available, and safety and design standards. Changes in use or design not approved by the permit or the issuing authority may cause the revocation or suspension of the permit.

APPEALS

1. Should the permittee or applicant object to the denial of a permit application by the Department or object to any of the terms or conditions of a permit placed there by the Department, the applicant and permittee (appellant) have a right to appeal the decision to the [Transportation] Commission [of Colorado]. To appeal a decision, submit a request for administrative hearing to the Transportation Commission of Colorado within 60 days of transmittal of notice of denial or transmittal of the permit for signature. Submit the request to the Transportation Commission of Colorado, 4201 East Arkansas Avenue, Denver, Colorado 80222-3400. The request shall include reasons for the appeal and may include changes, revisions, or conditions that would be acceptable to the permittee or applicant.

2. Any appeal by the applicant or permittee of action by a local issuing authority shall be filed with the local authority and be consistent with the appeal procedures of the local authority.

3. In submitting the request for administrative hearing, the appellant has the option of including within the appeal a request for a review by the Department's internal administrative review committee pursuant to [Code] subsection 2.10. When such committee review is requested, processing of the appeal for formal administrative hearing, 2.9(5) and (6), shall be suspended until the appellant notifies the Commission to proceed with the administrative hearing, or the appellant submits a request to the Commission or the administrative law judge to withdraw the appeal. The two administrative processes, the internal administrative review committee, and the administrative hearing, may not run concurrently.

4. Regardless of any communications, meetings, administrative reviews or negotiations with the Department or the internal administrative review Committee regarding revisions or objections to the permit or a denial, if the permittee or applicant wishes to appeal the Department's decision to the Commission for a hearing, the appeal must be brought to the Commission within 60 days of transmittal of notice of denial or transmittal of the permit.

PERMIT EXPIRATION

1. A permit shall be considered expired if the access is not under construction within one year of the permit issue date or before the expiration of any authorized extension. When the permittee is unable to commence construction within one year after the permit issue date, the permittee may request a one year extension from the issuing authority. No more than two one-year extensions may be granted under any circumstances. If the access is not under construction within three years from date of issue the permit will be considered expired. Any request for an extension must be in writing and submitted to the issuing authority before the permit expires. The request should state the reasons why the extension is necessary, when construction is anticipated, and include a copy of page 1 (face of permit) of the access permit. Extension approvals shall be in writing. The local issuing authority shall obtain the concurrence of the Department prior to the approval of an extension, and shall notify the Department of all denied extensions within ten days. Any person wishing to reestablish an access permit that has expired may begin again with the application procedures. An approved Notice to Proceed, automatically renews the access permit for the period of the Notice to Proceed.

CONSTRUCTION

1. Construction may not begin until a Notice to Proceed is approved. (Code subsection 2.4]

2. The construction of the access and its appurtenances as required by the terms and conditions of the permit shall be completed at the expense of the permittee except as provided in subsection 2.14. All materials used in the construction of the access within the highway right-of-way or on permanent easements, become public property. Any materials removed from the highway right-of-way will be disposed of only as directed by the Department. All fencing, guard rail, traffic control devices and other equipment and materials removed in the course of access construction shall be given to the Department unless otherwise instructed by the permit or the Department inspector.

3. The permittee shall notify the individual or the office specified on the permit or Notice to Proceed at least two working days prior to any construction within state highway right-of-way. Construction of the access shall not proceed until both the access permit and the Notice to Proceed are issued. The access shall be completed in an expeditious and safe manner and shall be finished within 45 days from initiation of construction within the highway right-of-way. A construction time extension not to exceed 30 working days may be requested from the individual or office specified on the permit.

4. The issuing authority and the Department may inspect the access during construction and upon completion of the access to ensure that all terms and conditions of the permit are met. Inspectors are authorized to enforce the conditions of the permit during construction and to halt any activities within state right-of-way that do not comply with the provisions of the permit, that conflict with concurrent highway construction or maintenance work, that endanger

highway property, natural or cultural resources protected by law, or the health and safety of workers or the public.

5. Prior to using the access, the permittee is required to complete the construction according to the terms and conditions of the permit. Failure by the permittee to abide by all permit terms and conditions shall be sufficient cause for the Department or issuing authority to initiate action to suspend or revoke the permit and close the access. If in the determination of the Department or issuing authority the failure to comply with or complete the construction requirements of the permit create a highway safety hazard, such shall be sufficient cause for the summary suspension of the permit. If the permittee wishes to use the access prior to completion, arrangements must be approved by the issuing authority and Department and included in the permit. The Department or issuing authority may order a halt to any unauthorized use of the access pursuant to statutory and regulatory powers. Reconstruction or improvement of the access may be required when the permittee has failed to meet required specifications of design or materials. If any construction element fails within two years due to improper construction or material specifications, the permittee shall be responsible for all repairs. Failure to make such repairs may result in suspension of the permit and closure of the access.

6. The permittee shall provide construction traffic control devices at all times during access construction, in conformance with the M.U.T.C.D. as required by section 42-4-104, C.R.S., as amended.

7. A utility permit shall be obtained for any utility work within highway right-of-way. Where necessary to remove, relocate, or repair a traffic control device or public or private utilities for the construction of a permitted access, the relocation, removal or repair shall be accomplished by the permittee without cost to the Department or issuing authority, and at the direction of the Department or utility company. Any damage to the state highway or other public right-of-way beyond that which is allowed in the permit shall be repaired immediately. The permittee is responsible for the repair of any utility damaged in the course of access construction, reconstruction or repair.

8. In the event it becomes necessary to remove any right-of-way fence, the posts on either side of the access shall be securely braced with an approved end post before the fence is cut to prevent any slacking of the remaining fence. All posts and wire removed are Department property and shall be turned over to a representative of the Department.

9. The permittee shall ensure that a copy of the permit is available for review at the construction site at all times. The permit may require the contractor to notify the individual or office specified on the permit at any specified phases in construction to allow the field inspector to inspect various aspects of construction such as concrete forms, subbase, base course compaction, and materials specifications. Minor changes and additions may be ordered by the Department or local authority field inspector to meet unanticipated site conditions.

10. Each access shall be constructed in a manner that shall not cause water to enter onto the roadway or shoulder, and shall not interfere with the existing drainage system on the right-of-way or any adopted municipal system and drainage plan.

11. By accepting the permit, permittee agrees to save, indemnify, and hold harmless to the extent allowed by law, the issuing authority, the Department, its officers, anc employees from suits, actions, claims of any type oı character brought because of injuries or damage sustainec by any person resulting from the permittee's use of the access permit during the construction of the access.

CHANGES IN ACCESS USE AND PERMIT VIOLATIONS

1. It is the responsibility of the property owner anc permittee to ensure that the use of the access to the property is not in violation of the Code, permit terms anc conditions or the Act. The terms and conditions of any permil are binding upon all assigns, successors-in-interest, heirs and occupants. If any significant changes are made or wil be made in the use of the property which will affect access operation, traffic volume and or vehicle type, the permittee oı property owner shall contact the local issuing authority or the Department to determine if a new access permit anc modifications to the access are required.

2. When an access is constructed or used in violation oł the Code, section 43-2-147(5)(c), C.R.S., of the Act applies. The Department or issuing authority may summarily suspend an access permit and immediately order closure oł the access when its continued use presents an immediate threat to public health, welfare or safety. Summary suspension shall comply with article 4 of title 24, C.R.S.

MAINTENANCE

1. The permittee, his or her heirs, successors-in-interest, assigns, and occupants of the property serviced by the access shall be responsible for meeting the terms anc conditions of the permit, the repair and maintenance of the access beyond the edge of the roadway including any cattle guard and gate, and the removal or clearance of snow or ice upon the access even though deposited on the access in the course of Department snow removal operations. Withir unincorporated areas the Department will keep access culverts clean as part of maintenance of the highway drainage system. However, the permittee is responsible foı the repair and replacement of any access-related culverts within the right-of-way. Within incorporated areas, drainage responsibilities for municipalities are determined by statute and local ordinance. The Department will maintain the roadway including auxiliary lanes and shoulders, except ir those cases where the access installation has failed due tc improper access construction and/or failure to follow permit requirements and specifications in which case the permittee shall be responsible for such repair. Any significant repairs such as culvert replacement, resurfacing, or changes ir design or specifications, requires authorization from the Department.

State Highway Access Permit
Attachment to Permit No. 212011 - Additional Terms and Conditions

1. A NOTICE TO PROCEED TO CONSTRUCTION, CDOT Form 1265, is required before beginning the construction of the access or any activity in the highway right-of-way. All submittals, documents, plans, and other items that must be completed shall be submitted and approved by the Department before a NOTICE TO PROCEED to construction will be issued.

2. The access is located on the south side of State Highway 94, a distance of 2280 feet west from Log Road or approximately milepost 15.81.

3. This section of highway is a Category E-X highway. The information submitted with the application requires the following requirements to be met:
   a. A dedication of 40' of right-of-way of SH 94 along the Permittee property frontage on the south side east and west of Log Road as necessary to accommodate widening needed for future dual left-turning movements.

4. The Permittee/Applicant shall provide the Department with the following submittals, documents, plans and other items for review prior to the issuance of a NOTICE TO PROCEED to construction:
   a. A written request for a NOTICE TO PROCEED including the access permit number listed above.
   b. The Permittee shall provide the Department with a donation form, legal description and survey of any area that is required to be donated to the Department for the construction of highway improvements.
   c. Current title policy or warranty deed.
   d. Cost estimate for the improvements of the highway.
   e. Monetary or legal guarantees for phasing of improvements.
   f. For projects that include signal work, signal mast arm and shop drawings.
   g. A copy of the final recorded plat.
   h. Proof of donation of right-of-way shall be provided to accommodate all improvements would be done on public property. The Department will accept a recorded subdivision plat indicating donation of ROW or you may follow the checklist attached to this permit.
   i. The Permittee/Applicant is required to include the portion of CDOT Rights of Way to be impacted by the construction of the access within their Construction Stormwater Permit (CSP). A notice to proceed will not be issued until the Permittee/applicant provides CDOT region permit office with the proof of such inclusion on the developer's CSP.

5. This Access Permit is issued to allow access to State Highway 94 for a change in use of the property. The previous use of the access was to serve grazing land and a mini-storage (117 units). The access will now serve as Springs East Road with a mini-storage facility and 98 single-family residences (Phase I, Filing 1 of Ellicott Town Center).

6. A pre-construction meeting shall to be held with prior to any construction within the state highway right-of-way. Contact Mr. Todd Ausbun, CDOT Access Inspector to schedule meeting. Mr. Ausbun can be contacted in Pueblo at (719) 546-5758.

7. The Permittee is responsible for wind and air borne erosion control measures during the construction phase. The developer is responsible for MS4 compliance; best management practice during construction should include clean project entry. The project landfall must be shaped and

armored in such a way that no head-cutting will occur. No construction traffic is allowed to enter the highway along pioneered pathways through the ditches.

8. The Permittee shall refer to all additional standard requirements attached to this permit. This includes CDOT Form 101b, enclosed additional terms, conditions, exhibits, and noted attachments.

9. The following criteria were used to establish this Access Permit:
   a. The Application for Access Permit (CDOT Form 137) dated March 1, 2012 and accepted by the regional office on July 30, 2012 and all attachments.
   b. State Highway Access Code, Volume 2, CCR-601-1; Effective date August 31, 1998
   c. The State Highway Access Category Assignment Schedule, as revised.
   d. The Colorado Department of Transportation (CDOT) M&S Standard Plans
   e. Vicinity Map
   f. Attached Details
   g. Exhibit A, "Seeding Requirements"
   h. Design Plans
   i. Standard Special Provision – Compliance with NCHRP 350 Crashworthiness Certification for Work Zone Traffic Control Devices.
   j. Approved Traffic Report with memorandum dated June 1, 2012, signed and sealed by , PE #31684, dated April 13, 2012.

10. Permittee shall comply with the requirements of Title II of the ADA, applicable federal regulations and the ADAAG (ADA Access Guidelines).

11. This Access Permit is issued in accordance with the 1998 State Highway Access Code (2CCR 601-1), and is based in part upon the information submitted by the Permittee. This Access Permit is only for the use and purpose stated in the Application and on the Permit. Any changes, based upon existing and/or anticipated future conditions in traffic volumes, drainage, types of traffic, or other operational aspects may render this permit void, requiring a new Application for Access Permit to be submitted for review by the Department and/or Issuing Authority.

12. If necessary, minor changes, corrections and/or additions to the Permit may be ordered by the Department Inspector, other Department representative, or the local authority, to meet unanticipated site conditions. Changes may not be in violation of the State Highway Access Code. All major changes to the permit must be approved in writing by the Department prior to commencement of any work on or within the State Highway right-of-way.

13. All work is to conform to the plans referenced by this permit on file with the Colorado Department of Transportation or as modified by this Permit or a valid Notice to Proceed. If discrepancies arise, this permit and the valid Notice to Proceed shall take precedence over the plans. The Department plan review is only for the general conformance with the Department's design and code requirements. The Department is not responsible for the accuracy and adequacy of the design, dimensions, elevations or any other elements, which shall be confirmed and correlated at the work site. The Department through the approval of this document assumes no responsibility for the completeness and/or accuracy of the plans.

14. The Department standards, specifications, and regulations shall override the design plans incorporated in this permit should an oversight, omission, or conflict occur. The Department assumes no liability or responsibility whatsoever for the accuracy, completeness or correctness of the Permittee's design plans. Any design plan errors are the sole responsibility of the Permittee and/or the engineer.

15. The access shall be completed in an expeditious and safe manner and shall be finished within 45 days from initiation of construction within State Highway right-of-way.

16. Backing maneuvers within and into the State Highway right-of-way are strictly prohibited. All vehicles shall enter and exit the highway right-of-way in a forward movement. Backing into the right-of-way shall be considered a violation of the Terms and Conditions of the Access Permit and may result in the revocation of the Permit by the Department and/or Issuing Authority.

17. This access will be allowed a right-in/right-out movement. The access shall be constructed to prohibit left-turning movements.

18. A Fully Executed Complete Copy of this Permit and a valid Notice to Proceed to Construction must be on the job site with the contractor at all times during the construction. Failure to comply with this or any other construction requirement may result in the immediate suspension of the work by order of the Department Inspector or the Issuing Authority.

19. Any additional permits and clearances required by other Federal, State, Local Government Agencies or Ditch Companies is the responsibility of the Permittee and/or Applicant.

20. The Permittee is responsible for obtaining any necessary additional federal, state and/or local government agency permits or clearances required for construction of the access. Approval of this access permit does not constitute verification of this action by the Permittee.

21. Whenever there is work within the highway right of way, the Permittee shall develop and implement a traffic control plan. This plan shall utilize traffic control devices as necessary to ensure the safe and expeditious movement of traffic around and through the work site as well as ensure the safety of the work force. A certified Traffic Control Supervisor or a Professional Traffic Engineer shall prepare the traffic control plan. The plan shall be in conformance with the latest Manual on Uniform Traffic Control Devices (MUTCD) and other applicable standards. The plan must be submitted and approved by the State Access Inspector listed below five working days prior to beginning construction within the highway right of way. The approved traffic control plan will be attached to the Permit and the NOTICE TO PROCEED TO CONSTRUCTION and must be available on site throughout the duration of the construction. All work that requires traffic control shall be supervised by a registered professional traffic engineer or by a certified traffic control supervisor. The contractor in accordance with the Department Standards shall certify flagging personnel, when required.

22. If any traffic control devices are evident within 50 feet of the construction area, the Permittee/Contractor must contact Mr. Eric Lundberg, Asst. Traffic Operations Engineer, in Pueblo. Mr. Lundberg can be contacted in Pueblo at (719) 546-5405.

23. Five working days prior to beginning construction, the Permittee/Contractor must contact Mr. Gary Heller, Senior Maintenance Supervisor, to coordinate the construction with any scheduled maintenance activity. Mr. Heller can be contacted in Colorado Springs at (719) 659-9438. Failure to comply with this requirement may result in the revocation of this permit.

24. Work shall BEGIN AFTER 8:30 a.m. and all equipment shall be off the right-of-way BEFORE 3:30 p.m. each day. No work is allowed within the highway right-of-way on weekends or State/Federal holidays. No construction vehicles shall be parked, or construction materials stockpiled on the highway right-of-way overnight. No private vehicles may be parked on the highway right-of-way at any time during construction.

25. Two-way traffic shall be maintained throughout the work area at all times.

26. If the vehicular volumes exceed the stated Peak Hour volumes, as determined by the Department, the appropriate warranted highway improvements shall be designed and installed within the earliest construction season unless specifically allowed otherwise, in writing by the Department. The highway improvements shall be designed and constructed by the Permittee at no cost to the Department. Failure by the Permittee to provide such warranted improvements may result in the revoking of the Access Permit and closure of the access approach.

27. All costs associated with the installation of this access are the responsibility of the Permittee. This includes the design, construction, utility relocation, testing of materials and inspection.

28. Reconstruction or improvements to the access may be required when the Permittee has failed to meet the required design and/or materials specifications. If any construction element fails within two years due to improper construction or material specifications, the Permittee shall be responsible for all repairs. Failure to make such repairs may result in the revoking of the permit and closure of the access.

29. All access permit requirments shall be met prior to the herein-authorized use of this access.

30. Signing and striping are the responsibilities of the Permittee. All signs shall be manufactured in accordance with the Manual on Uniform Traffic Control Devices (M.U.T.C.D.). The sheeting for the signs shall be highway intensity sheeting (ASTM Type III retro reflective sheeting). The Department shall approve the striping.

31. All workers within the State Highway right of way shall comply with their employer's safety and health policies/procedures and all applicable US Occupational Safety and Health Administration (OSHA) regulations- including but not limited to the applicable sections of 29 CFR Part 1910 – Occupational Safety and Health Standards and 29 CFR Part 1926 – Safety and Health Regulations for Construction.

    a. Personal protective equipment (e.g. head protection, footwear, high visibility apparel, safety glasses, hearing protection, respirators, gloves, etc.) shall be worn as appropriate for the work being performed and as specified in regulation. At a minimum, all workers in the State Highway right of way, except when in their vehicles, shall wear the following personal protective equipment:

b. Head protection that complies with the ANSI Z89.1-1997 standard;
c. At all construction sites or whenever there is danger of injury to feet, workers shall comply with OSHA's PPE requirements for foot protection per 29 CFR 1910.136, 1926.95, and 1926.96. If required, such footwear shall meet the requirements of ANSI Z41-1999;
d. High visibility apparel as specified in the Traffic Control provisions of this permit (at a minimum, ANSI/ISEA 107-1999, Class 2).
e. Where any of the above-referenced ANSI standards have been revised, the most recent version of the standard shall apply.

32. CDOT will require the Permittee to hire a Colorado registered professional engineer to inspect the work carefully, and to affirm to the best of their knowledge and belief that the construction is in compliance with the permit specifications, and to report any item which may not be in compliance or can not be determined to be in compliance, and the nature and scope of the item relative to compliance. CDOT may require testing of materials. When so required, test results shall be provided to the Department or as specified on the permit. CDOT is requesting a written confirmation from the Permittee that this requirement is met. Two complete sets of the accepted plans (half size, 11" x 17"), signed and sealed by a Colorado registered Professional Engineer, must be submitted to CDOT.

33. The Department (CDOT) will require the Permittee to have a Colorado registered Professional Engineer to be in responsible charge of construction observation. The PE's responsibilities include, but are not limited to:
    a. The PE in Responsible Charge of Construction Observation shall evaluate compliance with plans and specifications with regard to the roadway improvements within the State Highway right-of-way only. The PE's responsibilities shall be as defined in Section 5 of the "Bylaws And Rules Of The State Board Of Registration For Professional Engineers And Land Surveyors", and the relevant sections of the 1999 CDOT Standard Specifications for Road and Bridge Construction. The PE shall carefully monitor the contractor's compliance on all aspects of construction, including Construction Zone Traffic Control.
    b. Engineering Certification: After inspection and before final acceptance, the Engineer shall certify to CDOT, in writing, that all inspections, materials, materials testing, and construction methods conform to the plans, specifications and purpose of design. The PE shall be experienced and competent in road and bridge construction management, and inspection and materials testing. Certification is defined as a statement that includes all of the following:
    c. Is signed and/or sealed by a Professional Engineer representing that the engineering services addressed therein have been performed by the Professional Engineer, or under the Professional Engineer In Responsible Charge.
    d. Is based upon the Professional Engineer's knowledge, information, and belief; and
    e. Is in accordance with applicable standards of practice.
    f. CDOT is requesting a written confirmation from the Permittee that this requirement is met.

34. All construction materials, techniques and processes shall be in conformance with the specification on the permit and shall be consistent with Department standard specifications for road construction as set forth in the latest "Standard Specifications for Road and Bridge Construction" manual.

35. The Permittee is responsible for any utilities and/or traffic control devices disrupted by the construction of this access and all expense incurred for repair. There are existing utilities on the highway right-of-way by permit. Owners of those utilities must be contacted. Any work necessary to protect existing permitted utilities, such as encasements, bulwarks, etc. will be the responsibility of the Permittee.

36. The Permittee is hereby advised that other utilities may exist within the proposed permit area. Permittee shall implement any and all measures to protect any existing utilities from damage.

37. Non-Destructive Air-vacuum Excavation (potholing) to expose the utilities being surveyed to determine their exact depth and location maybe necessary before any work commences. A core hole saw cut is the recommended method of entry through pavement for potholing. Flowfill is required for backfill of the core hole under the pavement or on the roadway.

38. The vacuum excavation technique is used not only to expose utilities but also for other uses that are benefited by the non-invasive/non-destructive, environmentally friendly technology such as dewatering or drill fluid/saw cutting fluid removal.

39. The Contractor shall utilize a spotter to assist in the visual inspection of all excavation work as it progresses near existing CDOT Intelligent Transportation Systems fiber optic line conduits, pull boxes and manholes. The Contractor shall provide a spotter to aid equipment operators when construction activities are near marked or unmarked fiber lines.

40. The spotter shall observe all excavation work as it progresses to ensure that no damage occurs to existing underground fiber lines. When the spotter has visual sight of the underground conduit, the spotter shall notify the equipment operator of the proximity to the conduit and begin to guide the excavation work. The spotter shall guide all excavation work around the conduit to ensure no damage occurs.

41. Additional CDOT permits are required for work involving water, sanitary sewer, gas, electrical, telephone and landscaping within the right-of-way.

42. Any damage to existing highway facilities shall be repaired immediately at no cost to the Department and prior to continuing other work. Any mud or other material tracked or otherwise deposited on the roadway shall be removed daily or as ordered by the Department inspector.

43. The Department Inspector or the Issuing Authority may suspend any work due to noncompliance with the provisions of this permit, adverse weather or traffic conditions, concurrent highway construction or maintenance in conflict with permit work or any condition deemed unsafe for workers or the general public. The work may be resumed upon notice from the Department Inspector or Issuing Authority.

44. The Permittee shall maintain adequate, unobstructed sight distance in both directions from the access. When determining the distance between accesses, the point of tangent shall be used where a radius is present, or the beginning of the curb cut. The minimum sight distance that shall be maintained along the highway for the access shall be 550 feet. The minimum sight distance that shall be maintained for the vehicle entering the highway shall be 650 feet.

45. Any landscaping or potentially obstructing objects such as but not limited to advertising signs, structures, trees, and bushes, shall be designed, placed, and maintained at a height not to interfere with the sight distance needed by any vehicle using the access. Planting of tree(s), which will be over 4 inches in caliper at maturity, will not be allowed within 30 feet of the edge of the traveled way. All other objects shall not exceed a total height of thirty inches from the top of final grade. The Department will require any object or landscaping that becomes unsightly or is considered to be a traffic hazard to be removed by the Permittee at no cost to the Department.

46. Installation of auxiliary lane(s) (i.e. right/left acceleration lanes, right/left deleration lanes) and/or a traffic signal may be required in the future as determined by the Department. These improvements will be determined based on safety problems created by the access. If the vehicular volume of the access meet warrants as required by Section 3 of the State Highway Access Code, or if the warrants for a signal are met in accordance with the Manual on Uniform Traffic Control Devices (M.U.T.C.D.), a new access permit will be required. The improvements shall be designed and installed by the Permittee in a timely manner to the Department's standards and specifications and at no cost to the Department. Failure by the Permittee to provide such improvements shall result in the revocation of this access permit and closure of the access approach.

47. Within the right-of-way, maximum grades shall be limited to ten per cent for low volume field and residential access. All other accesses shall be limited to a maximum of eight percent grade. Lesser grades may be required for drainage control purposes.

48. The horizontal axis of an access to the highway shall be at a right angle to the centerline of the highway and extend a minimum of 40 feet from the edge of pavement or to the right-of-way line, whichever is greater.

49. It is the responsibility of the Permittee to prevent all livestock from entering the State Highway right of way at this access location. Any livestock that does enter the highway right of way shall be the sole responsibility of the Permittee.

50. Fill slopes and cut slopes shall be constructed to current Department minimum standards.

51. Soil preparation including topsoil, seeding and mulching is required with the highway right-of-way on all disturbed areas not surfaced and those areas beyond the highway that may erode and send debris into the highway right-of-way. The Department or local municipality shall provide minimum seed mixes, types and rates of seeding and preparation. (See attached Exhibit)

52. Installation of any traffic control device necessary for the safe and proper operation and control of the access shall be required by the permit at the cost of the Permittee.

53. All traffic control devices within the highway or other public right-of-way or access that serve the general public shall conform to the M.U.T.C.D.

54. Prior to removing any existing highway signs within the limits of the construction activities, the Permittee must contact Mr. Gary Garcia with the Department. Mr. Garcia can be contacted at (719) 546- 5767.

55. The surface width of the access shall be enough to accommodate all improvements.

56. Within unincorporated areas, the Department will keep access culverts clean as part of maintenance of the highway drainage system. However, the Permittee is responsible for the repair and replacement of any access-related culverts within the right-of-way. Within incorporated areas, drainage responsibilities for municipalities are determined by stature and local ordinance.

57. Each access shall be constructed in a manner that shall not cause water to enter onto the roadway or shoulder, and shall not interfere with the existing drainage system in the right-of-way or any adopted municipal system and drainage plan.

58. The highway drainage system is for the protection of the state highway right-of-way, structures, and appurtenances. It is not designed nor intended to serve the drainage requirement of abutting or other properties beyond undeveloped historical flow. Drainage to the state highway right-of-way shall not exceed the undeveloped historical rate of flow.

59. The Permittee shall provide, at their own expense, drainage structures for access that will become an integral part of the existing drainage system. Drainage structures under the access should extend beyond the access radius to accommodate the side slopes.

60. The Permittee shall install a new 18-inch corrugated metal pipe. It shall be a sufficient length to allow for the side slopes.

61. The Permittee or the contractor shall be required to provide comprehensive general liability and property damage insurance naming the Department and the issuing authority (if applicable) as an additional insured party, in the amounts of not less than $600,000 per occurrence and automobile liability insurance of $600,000 combined single limit bodily injury and property damage for each accident, during the period of access construction. By accepting the permit, the Permittee agrees to save, indemnify, and hold harmless to the extent allowed by law, the issuing authority, the Department, its officers, and employees from suits, actions, claims of any type or character brought because of injuries or damage sustained by any person resulting from the Permittee's use of the access permit during the construction of the access.

62. Attached is CDOT Standard Plan M-203-1, entitled "Approach Roads". The radii, surfacing, side drains, and side slope requirements shall be as specified in this permit.

63. The radii of the access shall be large enough to accommodate the largest vehicle using the access on a daily basis without encroaching on the adjacent travel lane.

64. The Peak Hour Volumes (PHV) volumes using this access shall not exceed 9 trips. In addition, in the future, if the traffic volumes increase by greater than 20% of the permitted number, the permittee (property owner) is required to apply for a new Access Permit and may be required to construct highway improvements.

65. The access shall be surfaced upon completion of earthwork construction and prior to being used. The access shall be surfaced from the highway roadway to the right-of-way line.

66. The access shall have a hard surface pavement for a minimum distance of 50 feet from the traveled way. The surfacing for the access and the widening shall be per an approved pavement design and Hot Mix Asphalt design on a sub-grade with "R>66". The pavement design shall be submitted to Mr. Craig Wieden, CDOT Materials Engineer for review and approval. The pavement and mix designs shall be incorporated in the design plans. Mr. Wieden can be contacted in Pueblo at (719) 546-5779.

67. Any access requiring a turn lane shall have a hard surface pavement for a minimum distance of 50 feet from the traveled way. The surfacing for the access and the widening shall be 6 inches of compacted Hot Mix Asphalt (with 1% lime), placed in 3 lifts, on a sub-grade with "R>66". If a "R>66" cannot be achieved, then 12 inches of Aggregate Base Course (Class 6) shall be placed.

68. The Permittee will be responsible for removing the existing rumble strips that are located in the shoulder of the existing highway at the access connection point. The rumble strips shall be removed per a plan that has been submitted to and approved by the Department.

69. If patching is required due to saw cutting, 6 inches of Hot Mix Asphalt shall be used. The material will be placed in 3 lifts.

70. If hard surfacing (concrete or bituminous pavement) abuts existing pavement, the existing pavement shall be saw cut and removed a minimum of one (1) foot back from the existing edge of pavement.

71. Compaction of Hot Mix Asphalt shall be in accordance to section 401.17 of the Department's standard specifications. Compaction of the Aggregate Base Course shall comply with section 304.06.

72. Compaction of sub-grade, embankments and backfills shall be in accordance to section 203.07 of the Department's standard specification.

73. Placement of base course materials shall be in accordance with section 304.04 of the standard specifications. Compaction shall be in conformance with AASHTO procedure T-99.

74. If frost, water or moisture is present in the sub-grade, no surfacing materials shall be placed until all frost, water or moisture is gone or removed.

75. This Permit hereby replaces all previous access permit(s) for this ownership, which now become null and void.

76. CDOT retains the right to perform any necessary maintenance work in this area.

77. A "Notice to Proceed" (CDOT Form 1265) is required to complete the access permitting process, even when construction is not required.

N Log Rd
McDaniels Rd
McDaniels Rd
Dragoo Pl
Langley Cir
Antelope Dr
Spotted Owl Way
14
94
15
16
94
17
Ellicott
18
SITE
N Log Rd
S Log Rd
S Ellicott Hwy
Handle Rd
Merkle Rd
0.6 miles
© 2012 Microsoft Corporation © 2010 NAVTEQ © AND

AP 212011

Log # 2614

COLORADO DEPARTMENT OF TRANSPORTATION

STATE HIGHWAY ACCESS PERMIT APPLICATION

Issuing authority application acceptance date:

Instructions:

Please print or type

- Contact the Colorado Department of Transportation (CDOT) or your local government to determine your issuing authority.
- Contact the issuing authority to determine what plans and other documents are required to be submitted with your application.
- Complete this form (some questions may not apply to you) and attach all necessary documents and Submit it to the issuing authority.
- Submit an application for each access affected.
- If you have any questions contact the issuing authority.
- For additional information see CDOT's Access Management website at http://www.dot.state.co.us/AccessPermits/index.htm

1) Property owner (Permittee)		2) Agent for permittee (if different from property owner)	
Springs East Land CO, LLC - Simon Malk		LSC Transportation Consultants, Inc.	
Street address: 12275 El Camino Real, Suite 110		Mailing address: 516 North Tejon Street	
City, state & zip: San Diego, CA 92130	Phone #: 858-345-3642	City, state & zip: CO. Springs, CO. 80903	Phone # (required): 719-633-2868
E-mail address: smalk@accretive-group.com		E-mail address if available: JCHodsdon@LSCCS.com	

3) Address of property to be served by permit (required)
22555 State Highway 94

4) Legal description of property: If within jurisdictional limits of Municipality, city and/or County, which one?

county	subdivision	block	lot	section	township	range
El Paso	(see attached)					

5) What State Highway are you requesting access from?
State Highway 94

6) What side of the highway? ☐ N ☒ S ☐ E ☐ W

7) How many feet is the proposed access from the nearest mile post?
992 feet ☐N ☐S ☐E ☒W) from: MP 16

How many feet is the proposed access from the nearest cross street?
2,280 feet ☐N ☐S ☐E ☒W) from: Log Road

8) What is the approximate date you intend to begin construction?
1/1/2015

9) Check here if you are requesting a:
☐ new access ☐ temporary access (duration anticipated:) ☒ improvement to existing access
☒ change in access use ☐ removal of access ☐ relocation of an existing access (provide detail)

10) Provide existing property use
grazing land and mini-storage (117 storage units)

11) Do you have knowledge of any State Highway access permits serving this property, or adjacent properties in which you have a property interest?
☐ no ☒ yes, if yes - what are the permit number(s) and provide copies: and/or, permit date:
#204029 5/10/2004; #206090 12/15/2006

12) Does the property owner own or have any interests in any adjacent property?
☒ no ☐ yes, if yes - please describe:

13) Are there other existing or dedicated public streets, roads, highways or access easements bordering or within the property?
☒ no ☐ yes, if yes - list them on your plans and indicate the proposed and existing access points.

14) If you are requesting agricultural field access - how many acres will the access serve?
N/A

15) If you are requesting commercial or industrial access please indicate the types and number of businesses and provide the floor area square footage of each.

business/land use	square footage	business	square footage
N/A			

16) If you are requesting residential developement access, what is the type (single family, apartment, townhouse) and number of units?

type	number of units	type	number of units
single-famiy detached housing	98		

17) Provide the following vehicle count estimates for vehicles that will use the access. Leaving the property then returning is two counts.

Indicate if your counts are ☒ peak hour volumes or ☐ average daily volumes.	# of passenger cars and light trucks at peak hour volumes	# of multi unit trucks at peak hour volumes
	9	0
# of single unit vehicles in excess of 30 ft.	# of farm vehicles (field equipment)	**Total count of all vehicles**
0	0	9

18) Check with the issuing authority to determine which of the following documents are required to complete the review of your application.

a) Property map indicating other access, bordering roads and streets.
b) Highway and driveway plan profile.
c) Drainage plan showing impact to the highway right-of-way.
d) Map and letters detailing utility locations before and after development in and along the right-of-way.
e) Subdivision, zoning, or development plan.
f) Proposed access design.
g) Parcel and ownership maps including easements.
h) Traffic studies.
i) Proof of ownership.

1- It is the applicant's responsibility to contact appropriate agencies and obtain all environmental clearances that apply to their activities. Such clearances may include Corps of Engineers 404 Permits or Colorado Discharge Permit System permits, or ecological, archeological, historical or cultural resource clearances. The CDOT Environmental Clearances Information Summary presents contact information for agencies administering certain clearances, information about prohibited discharges, and may be obtained from Regional CDOT Utility/Special Use Permit offices or accessed via the CDOT Planning/Construction-Environmental-Guidance webpage **http://www.dot.state.co.us/environmental/Forms.asp**.

2- All workers within the State Highway right of way shall comply with their employer's safety and health policies/ procedures, and all applicable U.S. Occupational Safety and Health Administration (OSHA) regulations - including, but not limited to the applicable sections of 29 CFR Part 1910 - Occupational Safety and Health Standards and 29 CFR Part 1926 - Safety and Health Regulations for Construction.

Personal protective equipment (e.g. head protection, footwear, high visibility apparel, safety glasses, hearing protection, respirators, gloves, etc.) shall be worn as appropriate for the work being performed, and as specified in regulation. At a minimum, all workers in the State Highway right of way, except when in their vehicles, shall wear the following personal protective equipment: High visibility apparel as specified in the Traffic Control provisions of the documentation accompanying the Notice to Proceed related to this permit (at a minimum, ANSI/ISEA 107-1999, class 2); head protection that complies with the ANSI Z89.1-1997 standard; and at all construction sites or whenever there is danger of injury to feet, workers shall comply with OSHA's PPE requirements for foot protection per 29 CFR 1910.136, 1926.95, and 1926.96. If required, such footwear shall meet the requirements of ANSI Z41-1999.

Where any of the above-referenced ANSI standards have been revised, the most recent version of the standard shall apply.

3- The Permittee is responsible for complying with the Revised Guidelines that have been adopted by the Access Board under the American Disabilities Act (ADA). These guidelines define traversable slope requirements and prescribe the use of a defined pattern of truncated domes as detectable warnings at street crossings. The new Standards Plans and can be found on the Design and Construction Project Support web page at: **<http://www.dot.state.co.us/DesignSupport/>**, then click on *Design Bulletins*.

If an access permit is issued to you, it will state the terms and conditions for its use. Any changes in the use of the permitted access not consistent with the terms and conditions listed on the permit may be considered a violation of the permit.

The applicant declares under penalty of perjury in the second degree, and any other applicable state or federal laws, that all information provided on this form and submitted attachments are to the best of their knowledge true and complete.

I understand receipt of an access permit does not constitute permission to start access construction work.

Applicant's signature	Print name	Date
	Jeffrey C. Hodsdon	3-1-12

If the applicant is not the owner of the property, we require this application also to be signed by the property owner or their legally authorized representative (or other acceptable written evidence). This signature shall constitute agreement with this application by all owners-of-interest unless stated in writing. If a permit is issued, the property owner, in most cases, will be listed as the permittee.

Property owner signature	Print name	Date
	Simon Malk	2-29-12

Performance Bond Process Guidelines

The Permittee is responsible to obtain and fund the performance bond in conformance with the State Highway Access Code and these Guidelines.

General Bond Requirements

1) The Permittee will provide CDOT with a performance bond for an amount equal to 110% of the cost necessary to complete the project in accordance with the access permit terms and conditions, as estimated by the Engineer of Record (EOR) and approved by CDOT.
2) The bond shall incorporate access permit(s) and any design waivers by reference.
3) The bond company must be licensed to do business in Colorado.
4) The bond shall include the name, title, address and statement that the agent is approved to serve as an agent for /on behalf of the bond company.
5) CDOT needs a statement from the Permittee that includes:
   a) The Permittee has authorized the person who is their representative to serve as its agent for the purposes of the bond.
   b) The name, address and title of the agent serving as representative for the Permittee.
6) The bond shall include a binding statement that the bond company will pay for completion of the project in accordance with Access Permit terms and conditions - must be binding on heirs, executors and assigns.
7) The performance bond can be extended only if CDOT agrees to extend the bond.

Bond Terms and Conditions for Draws

CDOT may draw from the performance bond when any one or more of the following conditions occur:

1) Construction activity ceases for an unreasonable amount of time not due to forces of nature or other crisis not of the contractor's making prior to completion of permitted improvements.
2) The project is not completed with in the permitted timeframe (initial or as later extended in writing by CDOT).
3) The Permittee notifies CDOT that the construction will not be completed in accordance with permit requirements.
4) The completed project does not reasonably conform to Access Permit terms and conditions.

Process to Draw Bond

1) **CDOT Notification**
   CDOT will notify the Permittee, EOR, and bond agent in writing when any of the conditions for draw are met, and CDOT is contemplating making a draw request. The CDOT notification letter will include:
   a) Permit Number and Project Location.
   b) Reason for draw (condition that was met).
   c) Amount and basis of draw amount.

d) Statement that additional draws may be necessary for reasons as stated in the (this) notification letter.

CDOT may stop the bond withdrawal process if the conditions for draw are resolved to CDOT's satisfaction.

2) Partial Draws

a) CDOT will draw an amount of the performance bond funds commensurate with the amount of money necessary for CDOT to complete the required improvements. This could include the cost it would take for CDOT to hire the work out, including Davis-Bacon Act wages, etc.
b) CDOT will determine the funding necessary to finish the permitted improvements based on field review, testing reports, and an engineer's estimate of the cost to complete the project in accordance with Access Permit terms and conditions.
c) CDOT will release remaining bond funds once all required improvements have been completed in accordance with Access Permit terms and conditions.

3) Partial Release

a) If CDOT draws from the bond amount and completes the construction, and the Engineer of Record submits a statement certifying that the completed project is in accordance with Access Permit terms and conditions, then CDOT will release remaining bond funds with a Letter of Acceptance once all permitted improvements have been completed by CDOT
b) CDOT will release partial bond amounts for a planned phased improvement. The release will occur at the end of each identified phase, in accordance with the conditions listed in the next section (full release).

4) Full Release

CDOT will fully release the performance bond when the conditions for CDOT initial acceptance are met, including:

a) CDOT review and acceptance of construction, including punch list items;
b) CDOT receipt of as-built plans (if necessary due to changes); and
c) The Engineer of Record submits a statement certifying that the completed project is in accordance with Access Permit terms and conditions.

Items required for a CDOT Property Donation

- The CDOT Right-of-Way (R.O.W.) Section should be contacted at the onset to establish requirements of property donation.
  - The proposed property donation should be discussed with the Survey/R.O.W. Plans Supervisor.
- The latest set of CDOT R.O.W. Plans in the area of the proposed property donation shall be obtained from CDOT.
- A title commitment for the property shall be provided to CDOT.
  - The title commitment shall be within (or updated to within) 90 days of the final transaction.
  - Supporting deeds and documents shall be included with the policy unless otherwise approved.
- An exhibit depicting the property donation shall be provided to CDOT. The exhibit:
  - must meet the minimum requirements for "Survey Plats" in the Colorado Revised Statutes (CRS)38-51-106;
  - shall depict all proposed improvements that affect or are within the vicinity of the property to be donated;
  - shall depict the new CDOT R.O.W. boundary line and the monuments set or "to be set" in their new locations;
  - shall depict all rights-of-way or easements that affect the donated property;
  - shall be annotated with the appropriate math to find the monuments on the ground;
  - shall include reference to the project number of the R.O.W. Plans that were used to determine the existing R.O.W.;
  - shall be deposited in the records of the appropriate County after the monuments are set.
- A property description of the donated property shall be provided to CDOT.
  - The description shall be labeled as "Exhibit 'A'
  - The description shall show authors name and address as per CRS 38-35-106.5
  - When created by a land surveyor, the description shall show the surveyors signature and seal as per CRS 12-25-217(2)
  - Monuments shall be established and set along the new CDOT R.O.W. boundary line. The monuments set shall meet the minimum standards of CRS 38-51-104, being reasonably durable monuments solidly embedded in the ground.
  - If requested, CDOT will provide CDOT Standard (Type 1) R.O.W. Monuments to be set.

MEDIAN WIDTH LESS THAN 50 FT.

MEDIAN WIDTH GREATER THAN 50 FT.

TYPICAL PLANS FOR
EMERGENCY MEDIAN CROSS OVER

LOCATION OF RADIUS POINTS MAY BE ADJUSTED FOR BEST FIT

TYPICAL SECTION FOR MEDIAN CROSS OVER

ANY REQUIRED PIPE OR INLET FOR MEDIAN DRAINAGE SHALL HAVE A TRAVERSABLE DESIGN AS SPECIFIED ON THE PLANS

SIDE DRAINS SHALL BE LOCATED BEYOND THE CLEAR ZONE, OR WHEN WITHIN THE CLEAR ZONE, THEY SHALL BE INSTALLED WITH END SECTIONS CONFORMING TO A 6:1 SLOPE. FIFTY FT. RADII SHALL BE USED ON INTERSECTING ROADS, EXCEPT FOR FIELD AND RESIDENTIAL DRIVES OR UNLESS OTHERWISE SPECIFIED ON PLANS. RADII MAY BE VARIED TO SUIT FIELD CONDITIONS.

TYPICAL PLANS FOR
SIDE APPROACH ROAD

TYPICAL SECTION FOR APPROACH ROAD

● ROAD APPROACHES WHICH REQUIRE HMA PAVEMENT, SHALL BE PLACED AS FOLLOWS:

PUBLIC APPROACHES AND ENTRANCES TO BUILDINGS OR RESIDENCES SHALL BE PAVED 50 FT. OUT FROM EDGE OF SHOULDER OR TO THE RIGHT OF WAY LINE, WHICHEVER IS LESS. FIELD ENTRANCES SHALL BE PAVED 4 FT. OUT FROM EDGE OF SHOULDER. STABILIZATION THICKNESSES SHALL BE AS SHOWN ON THE PLANS.

STANDARD CROWNED SECTION

SUPERELEVATED CUT SECTION

SUPERELEVATED FILL SECTION

VERTICAL ALIGNMENT SIDE APPROACH ROADS
INTERSECTING MAIN ROADWAY

* TANGENT SLOPE NOT STEEPER THAN 8% BEYOND THE VERTICAL CURVE. THE SLOPE MAY BE STEEPER, IF REQUIRED, TO MEET EXISTING APPROACH SLOPE. HOWEVER, APPROACH ROAD SLOPE SHOULD NOT BE STEEPER THAN EXISTING SLOPE.

Computer File Information	
Creation Date: 07/04/06	Initials: SJR
Last Modification Date: 07/04/06	Initials: LTA
Full Path: www.dot.state.co.us/DesignSupport/	
Drawing File Name: 203D10101.dwg	
CAD Ver.: MicroStation V8 Scale: Not to Scale	Units: English

Sheet Revisions	
Date:	Comments

Colorado Department of Transportation
4201 East Arkansas Avenue
Denver, Colorado 80222
Phone: (303) 757-9083
Fax: (303) 757-9820
Project Development Branch SRJ/LTA

APPROACH ROADS

Issued By: Project Development Branch on July 04, 2006

STANDARD PLAN NO.
M-203-1
Sheet No. 1 of 1

DESIGN ELEMENTS FOR COMPLETING HIGHWAY IMPROVEMENT PLANS FOR ACCESS
January 2006

Introduction

This is a design aid listing elements that may be necessary to prepare a compete set of plans necessary to design and construct access related highway improvements. The scale of the improvement project and complexity of the topography will determine, in part, the necessary elements of the plan set.

Title Sheet

- ☐ Standard Project Information (i.e. Subdivision Name, Permittee Name, Etc.)
- ☐ State Highway Number
- ☐ County/City Name
- ☐ State Highway Access Permit Number
- ☐ Index of Sheets
- ☐ Vicinity map showing the highway improvements location, including Township, Range. and Section.
- ☐ Index of Revisions
- ☐ Length and Design Data

Standard Plans List Sheet

- ☐ Use CDOT Standard Plans Table of Contents dated Oct. 2000 to indicate the standards to be used on the project. Please obtain the latest revisions to the standards and attach them to the plans. The latest revisions can be obtained at http://www.dot.state.co.us/DesignSupport/.

Typical Cross Section Elements

- ☐ Show the existing surfacing width and lane designations.
- ☐ The typical section scale shall be 1" = 5' (horizontal and vertical).
- ☐ Show the existing ground-line a minimum often (10) feet past the proposed widening or right of way, whichever is greater.
- ☐ Show the proposed widening and surfacing including the depth of each layer.
- ☐ Provide the proposed widths for median, lanes, and shoulders. Typical widths are: Median = 16', Lane = 12', and Shoulder = 4' adjacent an auxiliary lane, and 8' adjacent to through lanes unless on NHS highways then 10' shoulder should be used.
- ☐ "Z" section should be 6' -8' wide on a 6:1 slope.
- ☐ Use 6:1 or 4:1 slopes to the catch point or to the bottom of the ditch. With CDOT approval the slope may be steepened to 3: 1 maximum.
- ☐ Show the location and depth of topsoil.
- ☐ Provide material and specification recommendations from Materials Engineer.

General Notes Sheet

- ☐ Provide general surfacing, earthwork, traffic, utility, structures and construction notes.
- ☐ Provide seeding and mulching plan or a landscape plan (including irrigation).

Summary of Approximate Quantities

- ☐ Provide tabulations of all appropriate quantities used on the project.

Plan and Profile Sheets

- ☐ The plans scale shall be one of the following scales: 1 " =20' or 1 " =50'. Use 1"=20' in urban areas or as authorized.
- ☐ Show and label the existing centerline of the highway and proposed centerline, if different.
- ☐ Show and label the curve data if a portion of the project is on a curve.
- ☐ Provide superelevation information.
- ☐ Show and label the survey line or the base line. .
- ☐ Use CDOT plan stationing if possible and provide survey ties to most recent project.
- ☐ Show and label the existing edge of pavement.
- ☐ Show and label the proposed edge of pavement.
- ☐ Include sufficient Match-line lengths to determine proper intersection alignment. (i.e. 800- 1000 feet beyond project limits).
- ☐ Show and label the access width and the access radii.
- ☐ Speed change lanes (auxiliary lanes) shall be designed in accordance with the State Highway Access Code (2CCR601-1) for the appropriate category of highway.
- ☐ Indicate the posted speed for the section of the highway. If there are over lapping speed zones, show the locations of the speed limit signs. The design of auxiliary lanes is based on the current posted speed, and not what it may be posted in the future.
- ☐ Show the top of cuts and the toe of fills using CDOT standard symbols. **(Do not use contours)**.
- ☐ Show and label side drain size, type, and length.
- ☐ Show and label the existing and proposed drainage facilities. Including sizes, types, flows, invert elevations, etc.
- ☐ Show the profile of the access. The access must slope down from the highway for a minimum of 20 feet on a 2% grade for any access that is not a curb cut. Vertical curve data is also required.
- ☐ Show the existing right-of-way line.
- ☐ Dedication of right-of-way may be necessary to accommodate the highway improvements. See attached checklist for items necessary to dedicate right of way.
- ☐ Show all of the significant topography.
- ☐ Show and label all existing and proposed utility locations.
- ☐ Show and label existing guardrail.
- ☐ Show and label proposed guardrail.

Existing Signing and Striping Sheets

- ☐ Show and label all signs (size, type, and legend).

- ☐ Show and label all striping (width and color).
- ☐ Include sufficient Match-line lengths to determine proper intersection alignment. (i.e. 800- 1000 feet beyond project limits).
- ☐ Show and label the lane widths; turn lane lengths; and taper lengths.

Proposed Signing and Striping Sheets

- ☐ Show and label all signs (size, type, and legend).
- ☐ Show and label all striping (width and color).
- ☐ Include sufficient Match-line lengths to determine proper intersection alignment. (i.e. 800- 1000 feet beyond project limits).
- ☐ Show and label the lane widths; turn lane lengths; and taper lengths.

Detail Sheets

- ☐ Provide details of all items not CDOT standard (i.e. inlets, curb and gutter, etc.). These may be local agencies standards.

Survey Control Sheet

Structural Cross Section Elements

- ☐ Show and label the existing surfacing width.
- ☐ The typical cross section scale shall be 1" = 5' (horizontal & vertical).
- ☐ Show and label the existing pipe and the original ground line a minimum of 10' past the proposed pipe extension.
- ☐ Show and label the proposed pipe extension (including type) and proposed grading associated with the extension.
- ☐ Show and label the dimension of the section and indicate any skew of the structure.
- ☐ Show and label the flowline elevations at inlet and outlet.
- ☐ Show and label the existing right-of-way line.
- ☐ Additional information may be required from CDOT staff bridge depending on the magnitude of the structure and extensions.

Urban Section Elements

- ☐ Provide any applicable elements indicated above.
- ☐ Show and label (including type) of curb and gutter.
- ☐ Show and label curb ramps.
- ☐ Show and label the location of the existing and proposed sidewalks.
- ☐ Check with the local agency for their sidewalk requirements and provide documentation. At a minimum use 4' for detached sidewalk, and 6' for attached sidewalk. Provide detail of sidewalk including thickness.
- ☐ Show the profile of the flowline.
- ☐ Show the existing and proposed locations of street lights, and traffic signal facilities.
- ☐ If a traffic signal needs to be relocated, provide the name of the party responsible for such relocation. If the signal is to be relocated by a contractor, a set of design plans and specifications must be provided.

- ☐ Show the existing and proposed storm drain facilities.
- ☐ Lane widths are exclusive of the gutter pan.

General Information

- ☐ The final design plans must be signed, and stamped by a Colorado Registered Professional Engineer. Check with the access manager for the specific number of sets of plans required.

References

The following regulation, design guidelines, standards, and reference materials are also to be used in the development of the plans. Also listed below are selected sections from the design documents that may be used in preparation of the plans .All the necessary documents may not be listed. If there is any discrepancy between the regulation listed below and the other materials, the regulation takes precedence.

- State Highway Access Code (2 CCR 601-1) - A State of Colorado regulation.
- Current edition of CDOT Roadway Design Manual.
- CDOT Materials Manual-
- CDOT Construction Manual.
- CDOT Standard Specifications for Road and Bridge Construction.
- Drainage Design Manual.
- Flagging Booklet.
- CDOT M & S Standards, latest revision, including but not limited to the following
  - a. M -100-1, Standard Symbols
  - b. M-603-1, Metal and Plastic Culvert Pipe
  - c. M-603-10, Concrete and Metal End Sections
  - d. M-606-1 & M-606-12, Guardrail
  - e. M-607-1, Fencing
  - f. M-608-1, Curb Ramps
  - g. M-609- 1, Curbs and Gutters
  - h. S-612-1, Delineator Installation
  - i. S-614-1 & S-612-1, Ground Signs
  - j. S-627-1, Typical Pavement Markings
- A Policy on Geometric Design of Highways and Streets, AASHTO.
- AASHTO Roadside Design Guide.
- Highway Drainage Guidelines, AASHTO.
- Manual on Uniform Traffic Control Devices for Streets and Highways.
- Colorado Supplement to the Manual on Uniform Traffic Control Devices for Streets and Highways.

CDOT Publications are available for purchase from:

Colorado Department of Transportation
Bid Plans Room
420 1 East Arkansas Avenue
Denver CO 80222

(303) 757-9313

Some Publications may be found online at : http://www.dot.state.co.us/DesignSupport/ .

STATE OF COLORADO

DEPARTMENT OF TRANSPORTATION

Safety and Traffic Engineering Branch
4201 East Arkansas Ave, EP 770
Denver, Colorado 80222-3400
303-757-9368
FAX 303-757-9219

ADVANCE NOTICE TO ENTITIES THAT WILL BE APPLYING FOR
CDOT UTILTY, ACCESS OR SPECIAL USE PERMITS

Compliance With NCHRP 350 Crashworthiness Certification for Work Zone Traffic Control Devices

Work zone devices designated by FHWA as category I, including but not limited to single-piece drums, tubes, cones and delineators shall meet NCHRP 350 crash test requirements. The Permittee, or their contractor, shall obtain and make available upon request, the manufacturer's written NCHRP 350 certification for each type of category I device.

Work zone devices designated by FHWA as category II, including but not limited to barricades, vertical panels with light, drums or cones with light, portable sign supports, intrusion detectors and type III barricades shall meet NCHRP 350 crash test requirements. However, the Permittee may use category II devices originally purchased prior to October 1, 2000 in accordance with Table 1, presented below. The Permittee, or their contractor, shall obtain and make available upon request, the manufacturer's written NCHRP 350 FHWA Acceptance Letter for each type of category II device, or shall certify that the category II device was originally purchased prior to October 1, 2000.

Work zone devices designated by FHWA as category III, including but not limited to concrete barriers, fixed sign supports, crash cushions, and other work zone devices not meeting the definitions of Category I or II shall meet NCHRP 350 crash test requirements. However, the Permittee may use category III devices originally purchased prior to October 1, 2002 in accordance with Table 1. The Permittee, or their contractor, shall obtain and make available upon request, the manufacturer's written NCHRP 350 FHWA Acceptance Letter for each type of category III device or shall certify that the category III device was originally purchased prior to October 1, 2002.

Work zone devices that do not meet NCHRP 350 requirements shall not be used after the phase out date.

FHWA Acceptance Letters for Category II or Category III Work Zone Devices may be accessed through the FHWA website at http://safety.fhwa.dot.gov/roadway_dept/road_hardware/wzd.htm.

Table 1
Phased Implementation of Work Zone Devices

WORK ZONE DEVICES	COMPLIANCE DATE	PHASE OUT DATE
Category I	October 1, 1998 for new installations.	N/A
Category II	October 1, 2000 for new installations. Existing devices may be used until service life is exhausted or until phase-out date, whichever comes first.	All devices must be in compliance by **January 1, 2006.**
Category III	October 1, 2002 for new installations. Existing devices may be used until service life is exhausted or until phase-out date, whichever comes first. Exceptions: (see below)	All devices shall meet NCHRP 350 compliance by **January 1, 2006.**
Category III Exception: Temporary Concrete Barriers - New Standard: Type 7 F-shape	Units manufactured and purchased after October 1, 2002 must meet new standard.	N/A
Category III Exception: Truck-mounted Attenuators & Work Zone Crash Cushions	October 1, 1998 for new installations	NA

For additional information, please contact your regional CDOT permitting office (contact information available at http://www.dot.state.co.us/UtilityProgram/Contacts.cfm), or the Safety and Traffic Engineering Branch, 4201 East Arkansas Avenue, EP 770, Denver, CO 80222-3400, (303) 757-9368.

COLORADO DEPARTMENT OF TRANSPORTATION
Environmental Clearances Information Summary

PURPOSE - This summary is intended to inform entities external to CDOT that may be entering the state highway right-of-way to perform work related to their own facilities (such as Utility, Special Use or Access Permittees), about some of the more commonly encountered environmental permits/clearances that may apply to their activities. This listing is not all-inclusive - additional environmental or cultural resource permits/clearances may be required in certain instances. Appropriate local, state and federal agencies should be contacted for additional information if there is any uncertainty about what permits/clearances are required for a specific activity. **IMPORTANT – Please Review The Following Information Carefully – Failure to Comply With Regulatory Requirements May Result In Suspension or Revocation of Your CDOT Permit, Or Enforcement Actions By Other Agencies**

CLEARANCE CONTACTS - As indicated in the permit/clearance descriptions listed below, the following individuals or agencies may be contacted for additional information:

- Colorado Department of Public Health and Environment (CDPHE): General Information – (303) 692-2035
  Water Quality Control Division (WQCD): (303) 692-3500
  Environmental Permitting Website http://www.cdphe.state.co.us/permits.asp.
- CDOT Water Quality Program Manager: Rick Willard (303) 757-9343 http://www.coloradodot.info/programs/environmental/water-quality
- CDOT Asbestos Project Manager: Theresa Santangelo-Dreiling, (303) 512-5524
- Colorado Office of Archaeology and Historic Preservation: (303) 866-3395
- U.S. Army Corps of Engineers, District Regulatory Offices:
  Omaha District (NE Colorado), Denver Office (303) 979-4120 http://www.nwo.usace.army.mil/html/od-tl/tri-lakes.html
  Sacramento Dist. (Western CO), Grand Junction Office (970) 243-1199 http://www.spk.usace.army.mil/cespk-co/regulatory/
  Albuquerque District (SE Colorado), Pueblo Reg. Office (719)-543-6915 http://www.spa.usace.army.mil/reg/
- CDOT Utilities, Special Use and Access Permitting: (303) 757-9654 http://www.dot.state.co.us/Permits/

Ecological Resources – Disturbance of wildlife shall be avoided to the maximum extent practicable. Entry into areas of known or suspected threatened or endangered species habitat will require special authorization from the CDOT permitting office. If any threatened or endangered species are encountered during the progress of the permitted work, work in the subject area shall be halted and the CDOT Regional Permitting Office and Region Planning and Environmental Manager shall be contacted immediately. Authorization must be provided by CDOT prior to the continuation of work. Information about threatened or endangered species may be obtained from the CDOT website, http://coloradodot.info/programs/environmental/wildlife/guidelines, or the Colorado Division of Wildlife website http://wildlife.state.co.us/WildlifeSpecies/SpeciesOfConcern/. Additional guidance may be provided by the appropriate Region Planning and Environmental Manager (RPEM).

Cultural Resources – The applicant must request a file search of the permit area through the Colorado Office of Archaeology and Historic Preservation (OAHP), Denver, to ascertain if historic or archaeological resources have previously been identified. Inventory of the permit area by a qualified cultural resources specialist may be necessary, per the recommendation of CDOT. If archaeological sites/artifacts or historic resources are known to exist prior to the initiation of the permitted work or are encountered as the project progresses, all work in the subject area shall be halted and the CDOT Regional Permitting Office and Region Planning and Environmental Manager shall be contacted immediately. Authorization must be provided by CDOT prior to the continuation of work. Additional guidance may be provided by the Regional Permitting Office and RPEM. ***Contact Information:*** Contact the OAHP for file search at (303) 866-3395.

Paleontological Resources - The applicant must request a fossil locality file search through the University of Colorado Museum, Boulder, and the Denver Museum of Nature and Science to ascertain if paleontological resources have been previously identified. Inventory of the permit area by a qualified paleontologist may be necessary, per the recommendation of CDOT. If fossils are encountered during the permitted work, all work in the subject area shall be halted and the CDOT Regional Permitting Office and Region Planning and Environmental Manager shall be contacted immediately. Authorization must be provided by CDOT prior to the continuation of work. Additional guidance may be provided by the Regional Permitting Office in the Permit Special Provisions. **Contact Information:** Contact the CDOT Paleontologist at (303) 757-9632.

Hazardous Materials, Solid Waste - The Solid Wastes Disposal Sites and Facilities Act C.R.S. 30-20-100, et al, and Regulations Pertaining to Solid Waste Disposal Sites and Facilities (6 CCR 1007-2), prohibit solid waste disposal without an approved Certificate of Designation (a landfill permit). The Colorado Hazardous Waste Act C.R.S. 25-15-301 et al, and the Colorado Hazardous Waste Regulations (6 CCR 1007-3) prohibit the transfer, storage or disposal (TSD) of hazardous waste except at permitted TSD sites. There are no permitted landfills or TSD sites within the State Highway Right of Way. Therefore, all solid or hazardous wastes that might be generated by the activities of entities entering the State Highway Right of Way must be removed from the ROW and disposed of at a permitted facility or designated collection point (e.g., for solid waste, a utility or construction company's own dumpster). If pre-existing solid waste or hazardous materials contamination (including oil or petroleum contaminated soil, asbestos, chemicals, mine tailings, etc.) is encountered during the performance of work, the permittee shall halt work in the affected area and immediately contact the CDOT Regional Permitting Office for direction as to how to proceed. ***Contact Info:*** Andy Flurkey, CDOT Hazardous Materials Project Manager, (303) 512-5520.

Asbestos Containing Materials, Asbestos Contaminated Soil – All work on asbestos containing materials (ACM) must comply with the applicable requirements of the CDPHE Air Pollution Control Division's (APCD) Regulation 8. Disposal of ACM, and work done in asbestos-contaminated soil, must comply with the CDPHE Hazardous Materials and Waste Management Division's (HMWMD) Solid Waste Regulations. The application for any CDOT permit must specifically identify any ACM involved in the work for which authorization is being requested. Additional guidance or requirements may be specified in the permit special provisions. ***Contact Info:*** CDPHE APCD and HMWMD Regulations can be accessed via the CDPHE Environmental Permitting Website listed above. Additional information **concerning clearance on CDOT projects** is available from the CDOT Asbestos Project Manager (303) 512-5519, or Theresa Santangelo-Dreiling, Property Management Supervisor (303) 512-5524.

Transportation of Hazardous Materials - No person may offer or accept a hazardous material for transportation in commerce unless that person is registered in conformance with the United States Department of Transportation regulations at 49 CFR, Part 171. The hazardous material must be properly classed, described, packaged, marked, labeled, and in condition for shipment as required or authorized by applicable requirements, or an exemption, approval or registration has been issued. Vehicles requiring a placard, must obtain authorization and a State HAZMAT Permit from the Colorado Public Utilities Commission. ***Contact Information:*** For authorization and more info call the Federal Motor Safety Carrier Administration, US DOT for inter- and intra-state HAZMAT Registration (303) 969-6748. Colorado Public Utilities Commission: (303) 894-2868.

Discharge of Dredged or Fill Material – 404 Permits Administered By the U.S. Army Corps of Engineers, and Section 401 Water Quality Certifications Issued by the CDPHE WQCD - Corps of Engineers 404 Permits are required for the discharge of dredged or fill materials into waters of the United States, including wetlands. There are various types of 404 Permits, including Nationwide Permits, which are issued for activities with relatively minor impacts. For example, there is a Nationwide Permit for Utility Line Activities (NWP #12). However, depending upon the specific circumstances, it is possible that either a "General" or "Individual" 404 permit would be required. If an Individual 404 Permit is required, Section 401 water quality certification from the CDPHE WQCD is also required. Contact the appropriate Corps District Regulatory Office for information about what type of 404 permit may be required (contact information above). Contact the CDPHE Water Quality Control Division at (303) 692-3500.

Working on or in any stream or its bank - In order to protect and preserve the state's fish and wildlife resources from actions that may obstruct, diminish, destroy, change, modify, or vary a natural existing stream or its banks or tributaries, it may be necessary to obtain a Senate Bill 40 certification from the Colorado Department of Natural Resources. A stream is defined as 1) represented by a solid blue line on USGS 7.5' quadrangle maps; and/or 2) intermittent streams providing live water beneficial to fish and wildlife; and/or 3) segments of streams supporting 25% or more cover within 100 yards upstream or downstream of the project; and/or 4) segments of streams having wetlands present within 200 yards upstream or downstream of the project. The Colorado Division of Wildlife (CDOW) application, as per guidelines agreed upon by CDOT and CDOW, can be accessed at http://www.coloradodot.info/programs/environmental/wildlife/guidelines.

Stormwater Construction Permit (SCP) and Stormwater Discharge From Industrial Facilities - Discharges of stormwater runoff from construction sites disturbing one acre or more - or certain types of industrial facilities, such as concrete batch plants - requires a CDPS Stormwater Construction Permit. ***Contact Information:*** For Utility/Special Use activities being performed in conjunction and coordination with a CDOT highway construction contract, please contact the CDOT Water Quality Program Manager at (303) 757-9343. Otherwise, contact the CDPHE Water Quality Control Division at (303) 692-3500. Website: http://www.cdphe.state.co.us/wq/PermitsUnit/index.html.

Construction Dewatering (Discharge or Infiltration) – Discharges of water encountered during excavation or work in wet areas may require a Construction Dewatering Discharge Permit. ***Contact Information:*** For Construction Dewatering Discharge Permits, contact the CDPHE WQCD at (303) 692-3500. For Dewatering Application and Instructions, see Section 3 at the CDPHE website: http://www.cdphe.state.co.us/wq/PermitsUnit/FORMSandApplications/Appsandformsnewpage.html

Municipal Separate Storm Sewer System (MS4) Discharge Permit – Discharges from the storm sewer systems of larger municipalities, and from the CDOT highway drainage system that lies within those municipalities, are subject to MS4 Permits issued by the CDPHE WQCD. For facilities that lie within the boundaries of a municipality that is subject to an MS4 permit, the owner of such facility should contact the municipality regarding stormwater related clearances that may have been established under that municipality's MS4 permit. All discharges to the CDOT highway drainage system or within the Right of Way (ROW) must comply with the applicable provisions of the Colorado Water Quality Control Act and the Colorado Discharge Permit Regulations Permit # COS-000005 (http://www.coloradodot.info/programs/environmental/water-quality/documents/CDOT%20MS4%20Permit.doc/view) and COR-030000 (http://www.cdphe.state.co.us/wq/PermitsUnit/PERMITs/SWpermitsrats/SWConstructionPErmit.pdf). Discharges are subject to inspection by CDOT and CDHPE. Contact the CDPHE Water Quality Control Division at (303) 692-3500 for a listing of municipalities required to obtain MS4 Permits, or go to http://www.cdphe.state.co.us/wq/permitsunit/MS4/MS4Permittees.pdf.

General Prohibition – Discharges - All discharges are subject to the provisions of the Colorado Water Quality Control Act and the Colorado Discharge Permit Regulations. Prohibited discharges include, but are not limited to, substances such as wash water, paint, automotive fluids, solvents, oils or soaps and sediment. Allowable non-stormwater discharges can be found at http://www.coloradodot.info/programs/environmental/water-quality/glossary.html#AllowableDischarge. ***Contact Information:*** Contact the CDOT Water Quality Program Manager at (303) 757-9343, or the Colorado Department of Public Health and Environment, Water Quality Control Division at (303) 692-3500.

General Authorization - Allowable Non-Stormwater Discharges - Unless otherwise identified by CDOT or the WQCD as significant sources of pollutants to the waters of the State, the following discharges to stormwater systems are allowed without a Colorado Discharge Permit System permit: landscape irrigation, diverted stream flows, uncontaminated ground water infiltration to separate storm sewers, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, uncontaminated springs, footing drains; water line flushing, flows from riparian habitats and wetlands, and flow from fire fighting activities. ***Contact Information:*** The CDOT Water Quality Program Manager or the CDPHE Water Quality Control Division (telephone #'s listed above).

Erosion and Sediment Control Practices - For activities requiring a Stormwater Construction Permit, erosion control requirements will be specified through that permit. In those situations where a stormwater permit is not required, all reasonable measures should be taken in order to minimize erosion and sedimentation according to CDOT 208 specifications. In either case, the CDOT Erosion Control and Stormwater Quality Guide (most recent version) should be used to design erosion controls and to restore disturbed vegetation. ***Contact Information:*** The CDOT Erosion Control and Stormwater Quality Guide may be obtained from the Bid Plans Office at (303) 757-9313 or from: http://www.dot.state.co.us/environmental/envWaterQual/wqms4.asp

Disposal of Drilling Fluids - Drilling fluids used in operations such as Horizontal Directional Drilling may be classified as "discharges" or "solid wastes", and in general, should be pumped or vacuumed from the construction area, removed from the State Highway Right of Way, and disposed of at permitted facilities that specifically accept such wastes. Disposal of drilling fluids into storm drains, storm sewers, roadside ditches or any other type of man-made or natural waterway is prohibited by Water Quality Control and/or Solid Waste regulations. Small quantities of drilling fluid solids (less than 1 cubic yard of solids) may be left on-site after either being

separated from fluids or after infiltration of the water, provided: 1) the drilling fluid consists of only water and bentonite clay, or, if required for proper drilling properties, small quantities of polymer additives that are approved for use in drinking water well drilling; 2) the solids are fully contained in a pit, and are not likely to pose a nuisance to future work in the area, 3) the solids are covered and the area restored as required by CDOT permit requirements (Utility, Special Use, or Access Permits, etc.). ***Contact Information:*** Contact the CDOT / CDPHE Liaison or CDOT Water Quality Program Manager.
Concrete Washout - Waste generated from concrete activities shall NOT be allowed to flow into the drainage ways, inlets, receiving waters, or in the CDOT ROW. Concrete waste shall be placed in a temporary concrete washout facility and must be located a minimum of 50 feet from state waters, drainageways, and inlets. Concrete washout shall only be performed as specified by the CDOT Environmental Program and shall be in accordance to CDOT specifications and guidelines. ***Contact Information:*** Contact the CDOT Water Quality Program Manager at (303) 757-9343. Website: http://www.coloradodot.info/programs/environmental/water-quality/revised-m-standards; refer to the link *Revision of Sections 101, 107, 208, 213 and 620 Water Quality Control One or More Acres of Disturbance* for additional guidance.
Spill Reporting - Spills shall be contained and cleaned up as soon as possible. Spills shall NOT be washed down into the storm drain or buried. All spills shall be reported to the CDOT Illicit Discharge Hotline at (303) 512-4446 (4H20), as well as the Regional Permitting Office and Regional Maintenance Supervisor. Spills on highways, into waterways, any spill in the highway right-of-way exceeding 25 gallons, or that may otherwise present an immediate danger to the public shall be reported by calling 911, and shall also be reported to the CDPHE at 1-877-518-5608.
About This Form - Questions or comments about this Information Summary may be directed to Alex Karami, CDOT Safety & Traffic Engineering, Utilities Unit, at (303) 757-9841, alex.karami@dot.state.co.us.