Croy Engineering, LLC
200 North Cobb Parkway
Building 400, Suite 413
Marietta, Georgia 30062

Phone: 770.971.5407
Fax: 770.971.0620

www.croyengineering.com

To: Laura Beall, AICP
Georgia Regional Transportation Authority

From: Daniel B. Dobry, Jr., P.E., PTOE, AICP
Aimee Turner, E.I.T., Croy Engineering

Date: October 31, 2016

RE: DRI #2620 Vinings Atlanta Addendum

Introduction

This addendum supplements the Traffic Impact Analysis for the Vinings Atlanta mixed-use development in Cobb County, Georgia (DRI #2620).

After an initial review, the Georgia Regional Transportation Authority (GRTA) requested minor modifications. The first request was a breakdown of generated trip reductions by type. The second request was to identify System Improvements at intersections that do not meet the standard Level of Service (LOS) for the existing traffic conditions prior to identifying System Improvements for the "No Build" conditions.

Trip Generation Table

Upon making the requested modifications to the layout of the trip generation table (Table 3), a miscalculation in the original trip reduction was recognized. The 5% transit reduction was not included for the PM peak hour trip ends nor was the pass-by trips correctly calculated for the retail component of the development. This resulted in a lower number of net trips for the PM peak period. The revised "Table 3: Vinings Atlanta Net Trip Generation" is included in Attachment A, which includes the aforementioned corrections and requested modifications.

Consequently, the decrease in the number of PM peak hour trips resulted in nominal reductions to the number of projected new trips (Figure 7) and "Build" traffic volumes (Figure 11) for the PM peak periods; the updated figures are in Attachment A as well. Although these modifications made an insignificant impact on the traffic operations for the Build Condition, the Synchro traffic capacity analyses were updated as well to reflect these changes. The updates to the capacity analyses are discussed in more detail in the next section.

System Improvement Recommendations and Capacity Analysis

Existing Conditions

For the existing conditions, the Levels of Service (LOS) at network intersections exceeded their applicable LOS standards. It was requested that System Improvements be provided at these locations before making System Improvement recommendations for the "No Build" conditions.

For existing traffic conditions, the following intersections are operating below the acceptable Levels of Service:

- Paces Ferry Road and Cumberland Parkway for both the morning and afternoon peak hour
- I-285 Southbound Ramps at Paces Ferry Road in the morning peak hour
- Cumberland Boulevard and Cumberland Parkway in the afternoon peak hour

The following System Improvements are recommended for the existing conditions:

1. Intersection Improvements at Paces Ferry Road and Cumberland Parkway
    - *Make northbound right turn lane a shared through/right lane, and extend the lane back an additional 350 feet.*
    - *Extend outermost northbound lane north of Paces Ferry to 2500 Cumberland Parkway parking decks' driveway.*
    - *Set eastbound right turn island back on Paces Ferry Road to accommodate third southbound through lane on Cumberland Parkway south of Paces Ferry Road.*
    - *Extend the Cumberland Parkway southbound lane south of Paces Ferry Road to Publix/Home Depot's signalized driveway and terminate the lane as a right-turn only lane into Publix's Driveway.*
    - *Add additional eastbound right turn lane on Paces Ferry Road and extend dual right turn lanes an additional 250 feet.*
    - *Extend innermost westbound left turn lane on Paces Ferry Road back 400 feet.*
2. Optimizing Signal Timing Splits at I-285 Southbound Ramps while maintaining the cycle length for regional signal coordination.

A modified Table 5 reflecting the existing LOS and the LOS for the existing conditions with the recommended system improvements is included in Attachment A.

System Improvements for Cumberland Boulevard and Cumberland Parkway were not recommended because of the pending signal and roadway improvements out for bid for the intersection, which include the following:

- Removing split phasing from the Cumberland Boulevard movements.
- Adding a fourth southbound lane to Cumberland Mall driveway lane group, creating a dedicated right-turn lane, two through lanes, and a dedicated left-turn lane.
- Adding a fourth westbound lane to Cumberland Boulevard, and restriping the existing shared through/left lane to a left turn only lane, which will create dual left lanes, a dedicated through lane, and a shared through/right lane.

"No Build" Conditions

The "No Build" conditions inherited the aforementioned Systems Improvements recommended for the existing conditions. The planned Cumberland Boulevard at Cumberland Parkway intersection improvements were included in the "No Build" conditions as well.

The "No Build" traffic volumes were put into the revised traffic model and the resulting LOS and delays were updated in Table 6. Under these conditions, the intersection of Paces Walk and Cumberland Parkway in the AM peak hour, and Atlanta Road and Cumberland Parkway in the AM and PM peak hour would be operating below the acceptable LOS. The following System Improvements are recommended for the "No-Build" conditions:

1. Add a westbound right-turn bay at Paces Walk and Cumberland Parkway
2. Optimizing Signal Timing Splits at Atlanta Road and Cumberland Parkway while maintaining the cycle length for regional signal coordination.

A modified Table 6 reflecting the "No Build" conditions LOS and the LOS for the "No Build" conditions with the recommended system improvements is included in Attachment A.

"Build Conditions"

The "Build" conditions inherited the aforementioned Systems Improvements recommended for the "No Build" conditions. The updated "Build" traffic volumes were put into the revised traffic model and the resulting LOS per intersection was updated in Table 7 (attached). Under these conditions, all of the study network intersections and Vinings Atlanta's driveways would be operating at or above the standard LOS. The only Site Mitigation Improvement is to add a traffic signal at the intersection of Vinings Atlanta main driveway and Cumberland Parkway.

Summary

The following modifications have been made to the DRI #2620 Traffic Impact Analysis:

1. Table 3:Vinings Atlanta Trip Generation
    a. Breakdown of trip reductions by type
    b. Transit reduction added to PM peak hour trips
    c. Pass-by trip reductions were corrected
2. Figure 7 (Projected Trips) and Figure 11 (Build Traffic Volumes) were updated to reflect the PM peak hour trip generation changes.
3. Table 5 (Existing Traffic Operations) was updated to reflect the recommended system improvements.
4. Table 6 (No Build Traffic Operations) was updated to reflect the inherited existing system improvements recommended.
5. Table 7 (Build Traffic Operations) was updated to reflect the inherited "No Build" system improvements recommended and revised PM peak hour Build volumes.

Although the order of the System Improvements changed, the actual System Improvements recommendations from the original DRI #2620 Traffic Analysis did not change with the exception of the recommendation to add a Southbound through lane at Paces Ferry Road and Cumberland Parkway was removed. Figure 12 (Future Lane Geometry and Traffic Control at Study Intersections) has been updated to reflect these revisions, and it is included in Attachment A.

The updated figures and tables and summary tables reflecting the net changes in data from the original DRI #2620 Traffic Analysis are in Attachment A and Attachment B, respectively.

Wherever there is a conflict between this addendum and the DRI Traffic Study dated October 19, 2016, the data discussed and displayed in this Addendum will supersede findings in the originally submitted DRI package.

Attachments

A. DRI #2620 Vinings Atlanta - Modified Tables and Figures
B. Summary Tables of Net Changes from Original DRI #2620 Traffic Analysis

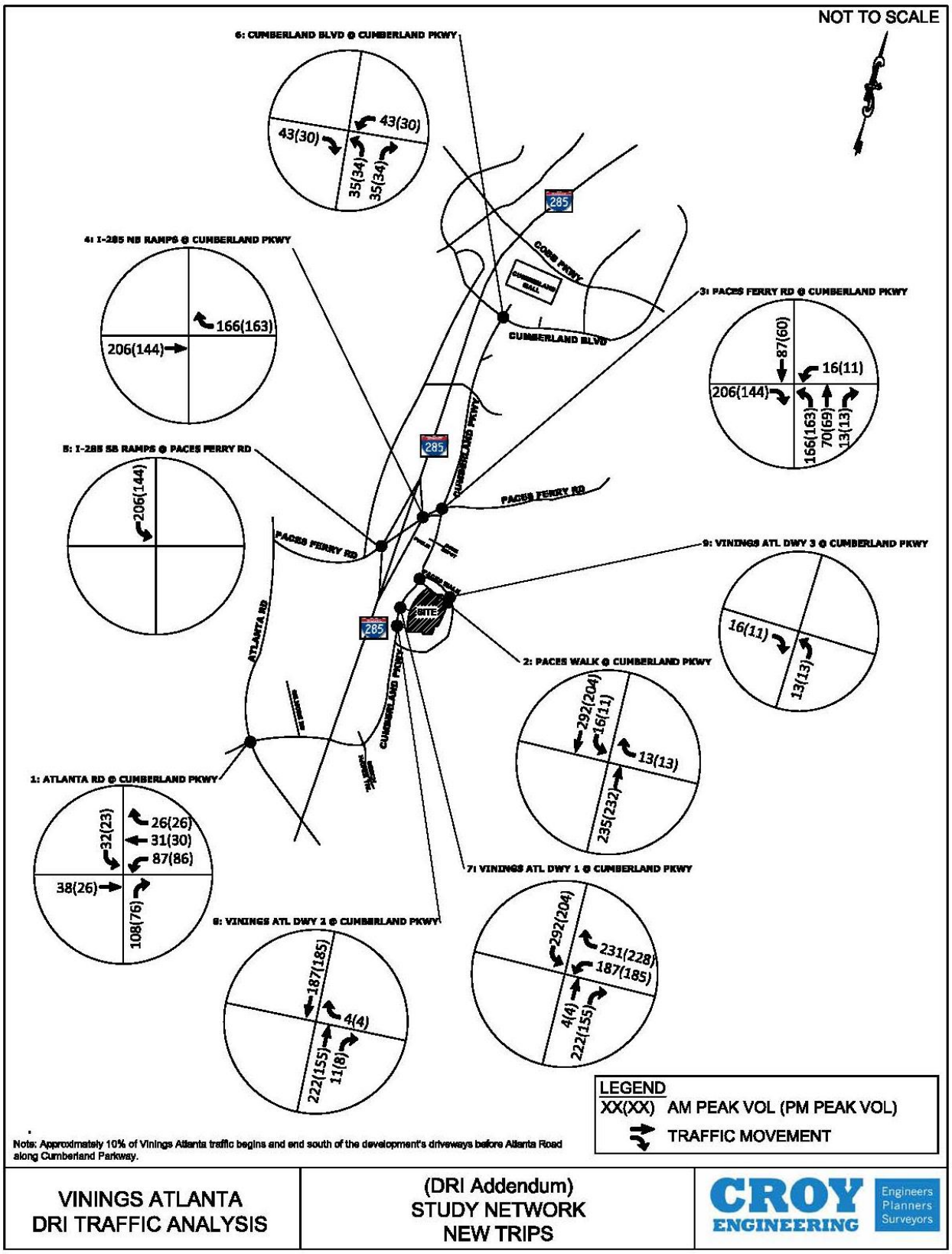
Attachment A

DRI #2620 Vinings Atlanta
Modified Tables and Figures

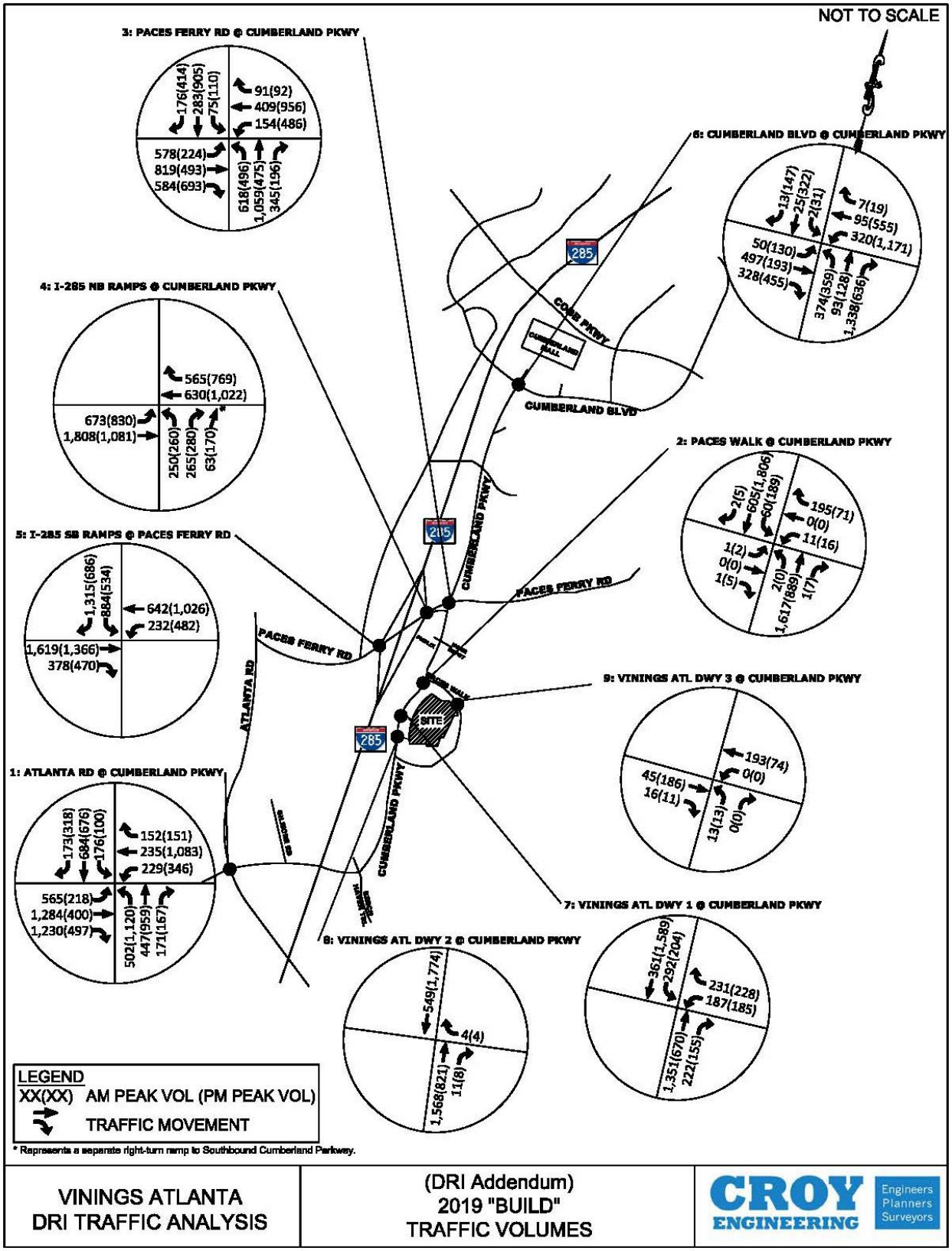
(DRI #2620 - Modified) Table 3: Vinings Atlanta Net Trip Generation

Description	LUC	Unit	Quantity	Daily	AM Peak			PM Peak		
				Two-way	Enter	Exit	Total	Enter	Exit	Total
Apartments	220	Dwelling Units	300	1,942	30	121	151	119	64	183
Condominiums	230	Dwelling Units	50	352	5	25	30	23	11	34
Senior Housing (Attached)	252	Dwelling Units	225	692	15	30	45	30	26	56
Assisted Living	254	Beds/Units	200	419	18	10	28	19	25	44
Hotel	310	Rooms	300	2,312	94	65	159	92	88	180
Office	710	SQ FT/1000	100	1,313	168	23	191	32	158	190
Specialty Retail	826	SQ FT/1000	23.1	1,026	110	119	229	65	51	116
Supermarket	850	SQ FT/1000	78	6,614	164	101	265	331	318	648
Total without Reductions				**14,670**	**604**	**494**	**1,098**	**711**	**741**	**1,451**
Internal Capture (Residential)				*-71*	*-1*	*-6*	*-7*	*-91*	*-46*	*-137*
Internal Capture (Hotel)				*-173*	*0*	*-14*	*-14*	*-20*	*-8*	*-28*
Internal Capture (Office)				*-250*	*-16*	*-6*	*-22*	*-12*	*-33*	*-45*
Internal Capture (Retail)				*-414*	*-17*	*-8*	*-25*	*-75*	*-111*	*-186*
Internal Capture Sub-Total				*-908*	*-34*	*-34*	*-68*	*-198*	*-198*	*-396*
5% Transit Reduction				*-688*	*-29*	*-24*	*-53*	*-26*	*-27*	*-53*
Specialty Retail & Supermarket Pass-by Trips (0%)35%[1 2 3]				*-1720*	*0*	*0*	*0*	*-109*	*-86*	*-195*
Total with Reductions				**11,354**	**541**	**436**	**977**	**378**	**430**	**808**

1. 70% of daily retail & supermarket trips are made in the PM.
2. Pass-by trips is average of Supermarket (34%) and Shopping Center (36%)
3. 53% of transit is oriented towards retail.



(DRI #2620 - Modified) Figure 7: Vinings Atlanta Projected Trips



(DRI #2620 - Modified) Figure 11: 2019 "Build" Traffic Volumes

(DRI #2620 - Modified) Table 5: 2016 Existing Traffic Operations by Intersection

	Intersection	Traffic Control	Existing Conditions		w. System Improvements	
			AM	PM	AM	PM
1	**Atlanta Road @ Cumberland Parkway**	Signalized	**E (75.8 s)**	**E (73.7 s)**	**E (75.8 s)**	**E (73.7 s)**
	Eastbound Approach		*F (81.6 s)*	*D (52.0 s)*	*F (81.6 s)*	*D (52.0 s)*
	Westbound Approach		*E (65.3 s)*	*F (114.6 s)*	*E (65.3 s)*	*F (114.6 s)*
	Northbound Approach		*E (69.8 s)*	*D (51.0 s)*	*E (69.8 s)*	*D (51.0 s)*
	Southbound Approach		*E (70.1 s)*	*F (84.5 s)*	*E (70.1 s)*	*F (84.5 s)*
2	**Paces Walk @ Cumberland Parkway**	Unsignalized	**n/a***	**n/a***	**n/a***	**n/a***
	Eastbound Approach *(Brookdale Senior Living)*		*E (48.1 s)*	*C (18.9 s)*	*E (48.1 s)*	*C (18.9 s)*
	Westbound Approach *(Paces Walk)*		*E (47.1 s)*	*B (14.6 s)*	*E (47.1 s)*	*B (14.6 s)*
	Northeast-bound Approach *(Cumberland Pkwy)*		*n/a*	*n/a*	*n/a*	*n/a*
	Southwest-bound Approach *(Cumberland Pkwy)*		*n/a*	*n/a*	*n/a*	*n/a*
3	**Paces Ferry Road @ Cumberland Parkway**	Signalized	**F (149.5 s)**	**F (140.4 s)**	**D (48.2 s)**	**E (60.5 s)**
	Eastbound Approach		*D (35.7 s)*	*D (42.8 s)*	*D (45.1 s)*	*D (50.6 s)*
	Westbound Approach		*D (35.2 s)*	*D (35.1 s)*	*D (49.0 s)*	*E (58.5 s)*
	Northbound Approach		*F (311.9 s)*	*F (90.9 s)*	*D (51.9 s)*	*E (75.9 s)*
	Southbound Approach		*D (46.1 s)*	*F (371.2 s)*	*D (43.1 s)*	*E (61.0 s)*
4	**I-285 Northbound Ramps @ Paces Ferry Road**	Signalized	**C (28.0 s)**	**D (35.2 s)**	**C (28.0 s)**	**D (35.2 s)**
	Eastbound Approach		*C (22.5 s)*	*C (33.3 s)*	*C (22.5 s)*	*C (33.3 s)*
	Westbound Approach		*C (20.8 s)*	*C (27.7 s)*	*C (20.8 s)*	*C (27.7 s)*
	Northbound Approach		*E (64.4 s)*	*E (61.4 s)*	*E (64.4 s)*	*E (61.4 s)*
5	**I-285 Southbound Ramps @ Paces Ferry Road**	Signalized	**F (200.9 s)**	**D (46.8 s)**	**D (43.4 s)**	**D (46.8 s)**
	Eastbound Approach		*B (14.2 s)*	*C (21.5 s)*	*D (49.0 s)*	*C (21.5 s)*
	Westbound Approach		*C (20.3 s)*	*C (24.1 s)*	*D (39.7 s)*	*C (24.1 s)*
	Southbound Approach		*F (478.8 s)*	*F (129.9 s)*	*D (39.2 s)*	*F (129.9 s)*
6	**Cumberland Boulevard @ Cumberland Parkway**	Signalized	**E (57.0 s)**	**F (117.1 s)**	**E (57.0 s)**	**F (117.1 s)**
	Northbound Approach		*E (63.3 s)*	*E (63.1 s)*	*E (63.3 s)*	*E (63.1 s)*
	Southbound Approach		*E (70.4 s)*	*E (63.7 s)*	*E (70.4 s)*	*E (63.7 s)*
	Southeast-bound Approach		*D (53.9 s)*	*E (56.5 s)*	*D (53.9 s)*	*E (56.5 s)*
	Northwest-bound Approach		*C (33.4 s)*	*F (198.3 s)*	*C (33.4 s)*	*F (198.3 s)*

* For unsignalized intersections' with stop control only on the minor street, LOS are only reported for the side street approaches.

(DRI #2620 - Modified) Table 6: 2019 "No Build" Traffic Operations by Intersection

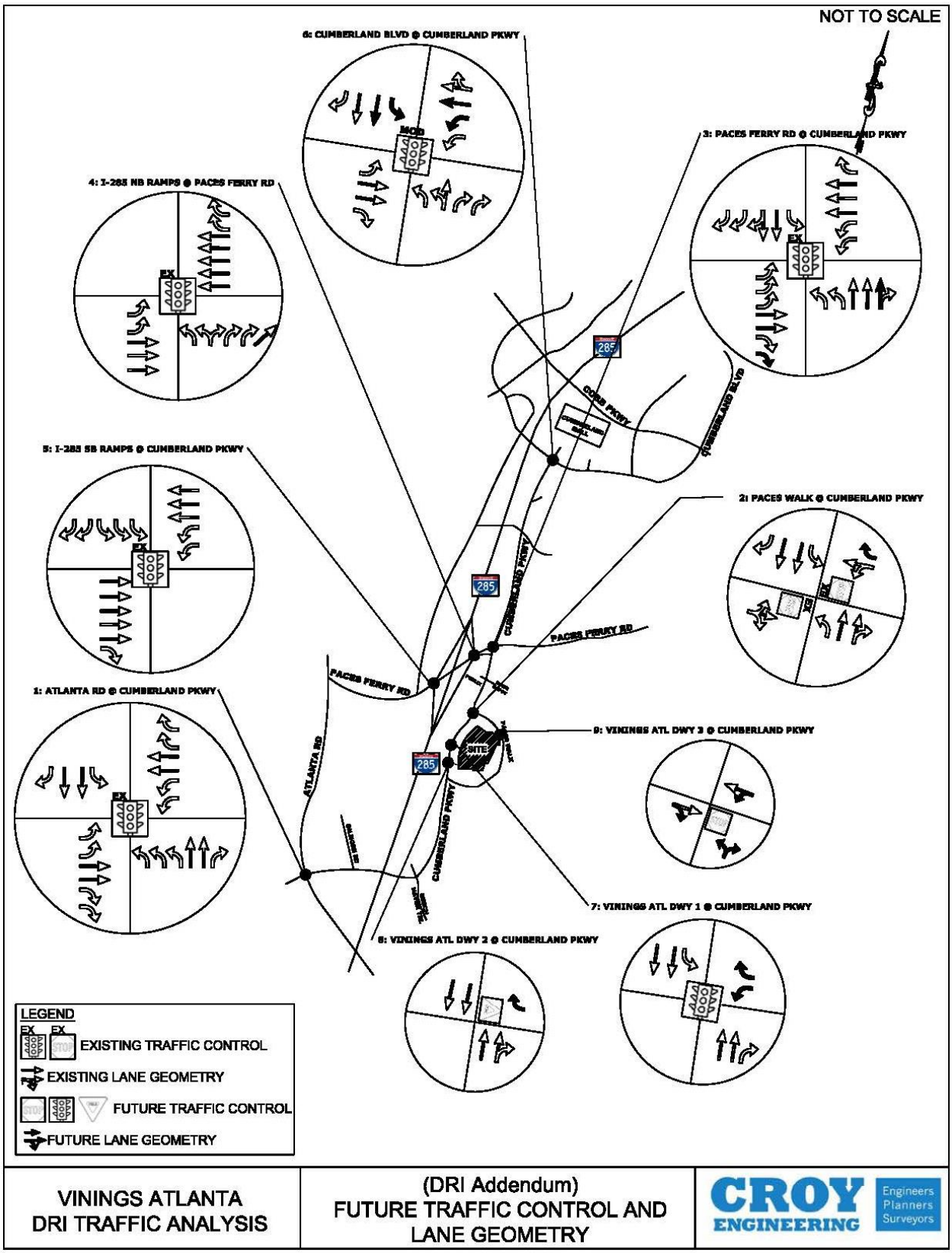
	Intersection	Traffic Control	No Improvements		w. System Improvements	
			AM	PM	AM	PM
1	**Atlanta Road @ Cumberland Parkway**	Signalized	**F (84.2 s)**	**F (83.7 s)**	**E (64.8 s)**	**E (75.5 s)**
	Eastbound Approach		*F (93.7 s)*	*D (54.6 s)*	E (56.5 s)	D (54.8 s)
	Westbound Approach		*E (68.7 s)*	*F(134.8 s)*	E (72.7 s)	F (85.1 s)
	Northbound Approach		*E (74.5 s)*	*D (51.4 s)*	E (73.1 s)	E (71.2 s)
	Southbound Approach		*E (73.6 s)*	*F (106.8 s)*	E (77.1 s)	F (91.8 s)
2	**Paces Walk @ Cumberland Parkway**	Unsignalized	**n/a***	**n/a***	**n/a***	**n/a***
	Eastbound Approach *(Brookdale Senior Living)*		*F (97.2 s)*	*C (21.8 s)*	*F (74.5 s)*	*C (21.7 s)*
	Westbound Approach *(Paces Walk)*		*F (68.8 s)*	*C (15.7 s)*	*E (37.3 s)*	*B (14.2 s)*
	Northeast-bound Approach *(Cumberland Pkwy)*		*n/a*	*n/a*	*n/a*	*n/a*
	Southwest-bound Approach *(Cumberland Pkwy)*		*n/a*	*n/a*	*n/a*	*n/a*
3	**Paces Ferry Road @ Cumberland Parkway**	Signalized	**D (51.2 s)**	**E (67.9 s)**	**D (51.2 s)**	**E (67.9 s)**
	Eastbound Approach		*D (46.1 s)*	*D (53.1 s)*	*D (46.1 s)*	*D (53.1 s)*
	Westbound Approach		*D (50.3 s)*	*E (64.8 s)*	*D (50.3 s)*	*E (64.8 s)*
	Northbound Approach		*E (57.6 s)*	*F (85.2 s)*	*E (57.6 s)*	*F (85.2 s)*
	Southbound Approach		*D (44.6 s)*	*E (72.4 s)*	*D (44.6 s)*	*E (72.4 s)*
4	**I-285 Northbound Ramps @ Paces Ferry Road**	Signalized	**C (28.7 s)**	**D (38.8 s)**	**C (28.7 s)**	**D (38.8 s)**
	Eastbound Approach		*C (23.0 s)*	*D (41.4 s)*	*C (23.0 s)*	*D (41.4 s)*
	Westbound Approach		*C (21.9 s)*	*C (27.9 s)*	*C (21.9 s)*	*C (27.9 s)*
	Northbound Approach		*E (65.1 s)*	*E (61.4 s)*	*E (65.1 s)*	*E (61.4 s)*
5	**I-285 Southbound Ramps @ Paces Ferry Road**	Signalized	**D (48.4 s)**	**E (58.6 s)**	**D (48.2 s)**	**D (36.8 s)**
	Eastbound Approach		*D (54.7 s)*	*C (22.9 s)*	D (51.0 s)	D (33.9 s)
	Westbound Approach		*D (42.2 s)*	*C (23.9 s)*	D (49.9 s)	C (29.3 s)
	Southbound Approach		*D (44.3 s)*	*F (180.3 s)*	D (44.3 s)	D (53.6 s)
6	**Cumberland Boulevard @ Cumberland Parkway**	Signalized	**D (51.2 s)**	**E (67.9 s)**	**D (51.2 s)**	**E (67.9 s)**
	Northbound Approach		*D (46.1 s)*	*D (53.1 s)*	*D (46.1 s)*	*D (53.1 s)*
	Southbound Approach		*D (50.3 s)*	*E (64.8 s)*	*D (50.3 s)*	*E (64.8 s)*
	Southeast-bound Approach		*E (57.6 s)*	*F (85.2 s)*	*E (57.6 s)*	*F (85.2 s)*
	Northwest-bound Approach		*D (44.6 s)*	*E (72.4 s)*	*D (44.6 s)*	*E (72.4 s)*

* For unsignalized intersections' with stop control only on the minor street, LOS are only reported for the side street approaches.

(DRI #2620 - Modified) Table 7: 2019 "Build" Traffic Operations at Study Intersections

	Intersection	Traffic Control	AM	PM
1	**Atlanta Road @ Cumberland Parkway**	Signalized	**E (72.6 s)**	**E (77.9 s)**
	Eastbound Approach		*E (62.6 s)*	*E (57.3 s)*
	Westbound Approach		*E (74.1 s)*	*F (85.4 s)*
	Northbound Approach		*F (79.2 s)*	*E (75.9 s)*
	Southbound Approach		*F (93.6 s)*	*F (91.9 s)*
2	**Paces Walk @ Cumberland Parkway**	Unsignalized	**n/a***	**n/a***
	Eastbound Approach *(Brookdale Senior Living)*		*C (17.2 s)*	*E (35.3 s)*
	Westbound Approach *(Paces Walk)*		*C (15.7 s)*	*B (13.2 s)*
	Northeast-bound Approach *(Cumberland Pkwy)*		*n/a*	*n/a*
	Southwest-bound Approach *(Cumberland Pkwy)*		*n/a*	*n/a*
3	**Paces Ferry Road @ Cumberland Parkway**	Signalized	**E (56.5 s)**	**E (74.7 s)**
	Eastbound Approach		*D (45.0 s)*	*E (68.6 s)*
	Westbound Approach		*D (53.7 s)*	*F (80.1 s)*
	Northbound Approach		*E (68.1 s)*	*E (55.6 s)*
	Southbound Approach		*D (54.2 s)*	*F (90.2 s)*
4	**I-285 Northbound Ramps @ Paces Ferry Road**	Signalized	**C (27.7 s)**	**D (37.9 s)**
	Eastbound Approach		*C (22.0 s)*	*D (38.9 s)*
	Westbound Approach		*C (22.4 s)*	*C (29.0 s)*
	Northbound Approach		*E (65.1 s)*	*E (62.4 s)*
5	**I-285 Southbound Ramps @ Paces Ferry Road**	Signalized	**D (47.3 s)**	**D (37.2 s)**
	Eastbound Approach		*D (51.0 s)*	*C (34.8 s)*
	Westbound Approach		*D (49.9 s)*	*C (29.7 s)*
	Southbound Approach		*D (42.8 s)*	*D (51.4 s)*
6	**Cumberland Boulevard @ Cumberland Parkway**	Signalized	**D (39.0 s)**	**E (74.7 s)**
	Northbound Approach		*C (24.8 s)*	*E (63.5 s)*
	Southbound Approach		*E (70.3 s)*	*E (71.1 s)*
	Southeast-bound Approach		*E (59.5 s)*	*F (98.8 s)*
	Northwest-bound Approach		*D (53.0 s)*	*E (70.4 s)*
7	**Vinings Atlanta Driveway #1 @ Cumberland Parkway**	Signalized	**C (25.2 s)**	**B (11.9 s)**
	Westbound Approach		*D (43.5 s)*	*C (26.5 s)*
	Northbound Approach		*C (22.5 s)*	*B (12.2 s)*
	Southbound Approach		*B (19.9 s)*	*A (8.4 s)*
8	**Vinings Atlanta Driveway #2 @ Cumberland Parkway**	Unsignalized	**n/a***	**n/a***
	Westbound Approach		*C (17.2 s)*	*B (11.5 s)*
	Northbound Approach		*n/a*	*n/a*
	Southbound Approach		*n/a*	*n/a*
9	**Vinings Atlanta Driveway #3 @ Paces Walk**	Unsignalized	**n/a***	**n/a***
	Southeast-bound Approach		*n/a*	*n/a*
	Northwest-bound Approach		*n/a*	*n/a*
	Northeast-bound Approach		*B (10.1 s)*	*B (10.2 s)*

* For unsignalized intersections' with stop control only on the minor street, LOS are only reported for the side street approaches.



(DRI #2620 - Modified) Figure 12: Future Lane Geometry and Traffic Control at Study Intersections

Attachment B

Summary Tables of Net Changes

Table 3: Vinings Atlanta Trip Generation Net Changes

	Daily	AM Peak			PM Peak		
	Two-way	Enter	Exit	Total	Enter	Exit	Total
ORIGINAL - Total w. Reductions	11,354	541	436	977	433	478	910
MODIFIED - Total w. Reductions	11,354	541	436	977	378	430	808
Net Changes	***0 trips***	***0 trips***	***0 trips***	***0 trips***	***-55 trips***	***-48 trips***	***-102 trips***

Table 6: 2019 "No Build" Traffic Operations Net Changes

	Intersection	ORIGINAL w. System Improvements		MODIFIED w. System Improvements		NET CHANGE w. System Improvements	
		AM	PM	AM	PM	AM	PM
1	**Atlanta Road @ Cumberland Parkway**	**E (64.8 s)**	**E (75.5 s)**	**E (64.8 s)**	**E (75.5 s)**	**0.0 s**	**0.0 s**
	Eastbound Approach	*E (56.5 s)*	*D (54.8 s)*	*E (56.5 s)*	*D (54.8 s)*	*0.0 s*	*0.0 s*
	Westbound Approach	*E (72.7 s)*	*F (85.1 s)*	*E (72.7 s)*	*F (85.1 s)*	*0.0 s*	*0.0 s*
	Northbound Approach	*E (73.1 s)*	*E (71.2 s)*	*E (73.1 s)*	*E (71.2 s)*	*0.0 s*	*0.0 s*
	Southbound Approach	*E (77.1 s)*	*F (91.8 s)*	*E (77.1 s)*	*F (91.8 s)*	*0.0 s*	*0.0 s*
2	**Paces Walk @ Cumberland Parkway**	**n/a***	**n/a***	**n/a***	**n/a***	**n/a***	**n/a***
	Eastbound Approach *(Brookdale Senior Living)*	*F (74.5 s)*	*C (21.7 s)*	*F (74.5 s)*	*C (21.7 s)*	*0.0 s*	*0.0 s*
	Westbound Approach *(Paces Walk)*	*E (37.3 s)*	*B (14.2 s)*	*E (37.3 s)*	*B (14.2 s)*	*0.0 s*	*0.0 s*
	Northeast-bound Approach *(Cumberland Pkwy)*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*
	Southwest-bound Approach *(Cumberland Pkwy)*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*
3	**Paces Ferry Road @ Cumberland Parkway**	**D (50.2 s)**	**D (49.6 s)**	**D (51.2 s)**	**E (67.9 s)**	**+ 1.0 s**	**+ 18.3 s**
	Eastbound Approach	*D (48.7 s)*	*D (51.7 s)*	*D (46.1 s)*	*D (53.1 s)*	*- 2.6 s*	*+ 1.4 s*
	Westbound Approach	*D (50.5 s)*	*D (47.1 s)*	*D (50.3 s)*	*E (64.8 s)*	*- 0.2 s*	*+ 17.7 s*
	Northbound Approach	*D (53.3 s)*	*D (51.2 s)*	*E (57.6 s)*	*F (85.2 s)*	*+ 4.3 s*	*+ 34.0 s*
	Southbound Approach	*D (42.3 s)*	*D (49.5 s)*	*D (44.6 s)*	*E (72.4 s)*	*+ 2.3 s*	*+ 22.9 s*
4	**I-285 Northbound Ramps @ Paces Ferry Road**	**C (28.7 s)**	**D (38.8 s)**	**C (28.7 s)**	**D (38.8 s)**	**0.0 s**	**0.0 s**
	Eastbound Approach	*C (23.0 s)*	*D (41.4 s)*	*C (23.0 s)*	*D (41.4 s)*	*0.0 s*	*0.0 s*
	Westbound Approach	*C (21.9 s)*	*C (27.9 s)*	*C (21.9 s)*	*C (27.9 s)*	*0.0 s*	*0.0 s*
	Northbound Approach	*E (65.1 s)*	*E (61.4 s)*	*E (65.1 s)*	*E (61.4 s)*	*0.0 s*	*0.0 s*
5	**I-285 Southbound Ramps @ Paces Ferry Road**	**D (48.2 s)**	**D (36.8 s)**	**D (48.2 s)**	**D (36.8 s)**	**0.0 s**	**0.0 s**
	Eastbound Approach	*D (51.0 s)*	*D (33.9 s)*	*D (51.0 s)*	*D (33.9 s)*	*0.0 s*	*0.0 s*
	Westbound Approach	*D (49.9 s)*	*C (29.3 s)*	*D (49.9 s)*	*C (29.3 s)*	*0.0 s*	*0.0 s*
	Southbound Approach	*D (44.3 s)*	*D (53.6 s)*	*D (44.3 s)*	*D (53.6 s)*	*0.0 s*	*0.0 s*
6	**Cumberland Boulevard @ Cumberland Parkway**	**D (38.3 s)**	**E (65.5 s)**	**D (38.3 s)**	**E (65.5 s)**	**0.0 s**	**0.0 s**
	Northbound Approach	*C (24.2 s)*	*D (53.4 s)*	*C (24.2 s)*	*D (53.4 s)*	*0.0 s*	*0.0 s*
	Southbound Approach	*E (70.3 s)*	*E (71.1 s)*	*E (70.3 s)*	*E (71.1 s)*	*0.0 s*	*0.0 s*
	Southeast-bound Approach	*E (59.6 s)*	*F (92.3 s)*	*E (59.6 s)*	*F (92.3 s)*	*0.0 s*	*0.0 s*
	Northwest-bound Approach	*D (51.6 s)*	*E (57.8 s)*	*D (51.6 s)*	*E (57.8 s)*	*0.0 s*	*0.0 s*

Table 7: 2019 "Build" Traffic Operations at Study Intersections Net Changes

		ORIGINAL		MODIFIED		NET CHANGE	
	Intersection	AM	PM	AM	PM	AM	PM
1	**Atlanta Road @ Cumberland Parkway**	**E (72.6 s)**	**E (78.0 s)**	**E (72.6 s)**	**E (77.9 s)**	**0.0 s**	**-0.1 s**
	Eastbound Approach	*E (62.6 s)*	*E (57.6 s)*	*E (62.6 s)*	*E (57.3 s)*	*0.0 s*	*-0.3 s*
	Westbound Approach	*E (74.1 s)*	*F (85.7 s)*	*E (74.1 s)*	*F (85.4 s)*	*0.0 s*	*-0.3 s*
	Northbound Approach	*F (79.2 s)*	*E (75.4 s)*	*F (79.2 s)*	*E (75.9 s)*	*0.0 s*	*+ 0.5 s*
	Southbound Approach	*F (93.6 s)*	*F (92.6 s)*	*F (93.6 s)*	*F (91.9 s)*	*0.0 s*	*-0.7 s*
2	**Paces Walk @ Cumberland Parkway**	**n/a***	**n/a***	**n/a***	**n/a***	**n/a***	**n/a***
	Eastbound Approach *(Brookdale Senior Living)*	*C (17.2 s)*	*E (39.0 s)*	*C (17.2 s)*	*E (35.3 s)*	*0.0 s*	*-3.7 s*
	Westbound Approach *(Paces Walk)*	*C (15.7 s)*	*B (13.3 s)*	*C (15.7 s)*	*B (13.2 s)*	*0.0 s*	*-0.1 s*
	Northeast-bound Approach *(Cumberland Pkwy)*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*
	Southwest-bound Approach *(Cumberland Pkwy)*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*
3	**Paces Ferry Road @ Cumberland Parkway**	**D (53.2 s)**	**E (59.0 s)**	**E (56.5 s)**	**E (74.7 s)**	**+ 9.8 s**	**+ 15.7 s**
	Eastbound Approach	*D (46.7 s)*	*E (60.3 s)*	*D (45.0 s)*	*E (68.6 s)*	*-1.7 s*	*8.3 s*
	Westbound Approach	*D (51.0 s)*	*E (55.6 s)*	*D (53.7 s)*	*F (80.1 s)*	*2.7 s*	*24.5 s*
	Northbound Approach	*E (60.0 s)*	*D (57.5 s)*	*E (68.1 s)*	*E (55.6 s)*	*8.1 s*	*-1.9 s*
	Southbound Approach	*D (51.8 s)*	*E (62.5 s)*	*D (54.2 s)*	*F (90.2 s)*	*2.4 s*	*27.7 s*
4	**I-285 Northbound Ramps @ Paces Ferry Road**	**C (27.7 s)**	**D (37.9 s)**	**C (27.7 s)**	**D (37.9 s)**	**0.0 s**	**0.0 s**
	Eastbound Approach	*C (22.0 s)*	*D (38.5 s)*	*C (22.0 s)*	*D (38.9 s)*	*0.0 s*	*+ 0.4 s*
	Westbound Approach	*C (22.4 s)*	*C (29.2 s)*	*C (22.4 s)*	*C (29.0 s)*	*0.0 s*	*-0.2 s*
	Northbound Approach	*E (65.1 s)*	*E (62.6 s)*	*E (65.1 s)*	*E (62.4 s)*	*0.0 s*	*-0.2 s*
5	**I-285 Southbound Ramps @ Paces Ferry Road**	**D (47.3 s)**	**D (37.2 s)**	**D (47.3 s)**	**D (37.2 s)**	**0.0 s**	**0.0 s**
	Eastbound Approach	*D (51.0 s)*	*C (34.2 s)*	*D (51.0 s)*	*C (34.8 s)*	*0.0 s*	*+ 0.6 s*
	Westbound Approach	*D (49.9 s)*	*C (29.4 s)*	*D (49.9 s)*	*C (29.7 s)*	*0.0 s*	*+ 0.3 s*
	Southbound Approach	*D (42.8 s)*	*D (52.3 s)*	*D (42.8 s)*	*D (51.4 s)*	*0.0 s*	*-0.9 s*
6	**Cumberland Boulevard @ Cumberland Parkway**	**D (39.0 s)**	**E (75.3 s)**	**D (39.0 s)**	**E (74.7 s)**	**0.0 s**	**-0.6 s**
	Northbound Approach	*C (24.8 s)*	*E (58.7 s)*	*C (24.8 s)*	*E (63.5 s)*	*0.0 s*	*+ 4.8 s*
	Southbound Approach	*E (70.3 s)*	*E (71.1 s)*	*E (70.3 s)*	*E (71.1 s)*	*0.0 s*	*0.0 s*
	Southeast-bound Approach	*E (59.5 s)*	*F (105.7 s)*	*E (59.5 s)*	*F (98.8 s)*	*0.0 s*	*-6.9 s*
	Northwest-bound Approach	*D (53.0 s)*	*E (71.4 s)*	*D (53.0 s)*	*E (70.4 s)*	*0.0 s*	*0.0 s*
7	**Vinings Atlanta Driveway #1 @ Cumberland Parkway**	**C (25.2 s)**	**B (12.9 s)**	**C (25.2 s)**	**B (11.9 s)**	**0.0 s**	**-1.0 s**
	Westbound Approach	*D (43.5 s)*	*C (27.4 s)*	*D (43.5 s)*	*C (26.5 s)*	*0.0 s*	*-0.9 s*
	Northbound Approach	*C (22.5 s)*	*B (13.3 s)*	*C (22.5 s)*	*B (12.2 s)*	*0.0 s*	*-1.1 s*
	Southbound Approach	*B (19.9 s)*	*B (9.0 s)*	*B (19.9 s)*	*A (8.4 s)*	*0.0 s*	*-0.6 s*
8	**Vinings Atlanta Driveway #2 @ Cumberland Parkway**	**n/a***	**n/a***	**n/a***	**n/a***	**n/a***	**n/a***
	Westbound Approach	*C (17.2 s)*	*B (11.7 s)*	*C (17.2 s)*	*B (11.5 s)*	*0.0 s*	*-0.2 s*
	Northbound Approach	*n/a*	*n/a*	*n/a*	*n/a*	*0.0 s*	*0.0 s*
	Southbound Approach	*n/a*	*n/a*	*n/a*	*n/a*	*0.0 s*	*0.0 s*
9	**Vinings Atlanta Driveway #3 @ Paces Walk**	**n/a***	**n/a***	**n/a***	**n/a***	**n/a***	**n/a***
	Southeast-bound Approach	*n/a*	*n/a*	*n/a*	*n/a*	*0.0 s*	*0.0 s*
	Northwest-bound Approach	*n/a*	*n/a*	*n/a*	*n/a*	*0.0 s*	*0.0 s*
	Northeast-bound Approach	*B (10.1 s)*	*B (10.2 s)*	*B (10.1 s)*	*B (10.2 s)*	*0.0 s*	*0.0 s*

Appendix

Addendum

"Vinings Atlanta"
ITE GENERATED TRIPS CALCULATIONS
(Addendum)

Trip Generation Summary (GROSS)

Description	LUC	Unit	Quantity	Daily	AM Peak			PM Peak		
				Two-way	Enter	Exit	Total	Enter	Exit	Total
Apartments	220	Dwelling Units	300	1,942	30	121	151	119	64	183
Condominiums	230	Dwelling Units	50	352	5	25	30	23	11	34
Senior Housing (Attached)	252	Dwelling Units	225	692	15	30	45	30	26	56
Assisted Living	254	Beds/Units	200	419	18	10	28	19	25	44
Hotel	310	Rooms	300	2,312	94	65	159	92	88	180
Office	710	SQ FT/1000	100	1,313	168	23	191	32	158	190
Specialty Retail	826	SQ FT/1000	23.1	1,026	110	119	229	65	51	116
Supermarket	850	SQ FT/1000	78	6,614	164	101	265	331	318	648
			Total	**14,668**	**605**	**493**	**1,098**	**711**	**740**	**1,451**

Trip Generation Summary (NET)

Description	LUC	Unit	Quantity	Daily	AM Peak			PM Peak		
				Two-way	Enter	Exit	Total	Enter	Exit	Total
Apartments	220	Dwelling Units	300	1,942	30	121	151	119	64	183
Condominiums	230	Dwelling Units	50	352	5	25	30	23	11	34
Senior Housing (Attached)	252	Dwelling Units	225	692	15	30	45	30	26	56
Assisted Living	254	Beds/Units	200	419	18	10	28	19	25	44
Hotel	310	Rooms	300	2,312	94	65	159	92	88	180
Office	710	SQ FT/1000	100	1,313	168	23	191	32	158	190
Specialty Retail	826	SQ FT/1000	23.1	1,026	110	119	229	65	51	116
Supermarket	850	SQ FT/1000	78	6,614	164	101	265	331	318	648
			Total without Reductions	**14,670**	**604**	**494**	**1,098**	**711**	**741**	**1,451**
			Internal Capture (Residential)	*-71*	*-1*	*-6*	*-7*	*-91*	*-46*	*-137*
			Internal Capture (Hotel)	*-173*	*0*	*-14*	*-14*	*-20*	*-8*	*-28*
			Internal Capture (Office)	*-250*	*-16*	*-6*	*-22*	*-12*	*-33*	*-45*
			Internal Capture (Retail)	*-414*	*-17*	*-8*	*-25*	*-75*	*-111*	*-186*
			5% Transit Reduction	*-688*	*-29*	*-24*	*-53*	*-26*	*-27*	*-53*
			Specialty Retail & Supermarket Pass-by Trips (0%)35% [1 2]	*-1720*	*0*	*0*	*0*	*-109*	*-86*	*-195*
			Total with Reductions	**11,354**	**541**	**436**	**977**	**378**	**430**	**808**

Assumptions:

1. 70% of daily retail & supermarket trips are made in the PM.

2. Pass-by trips is average of Supermarket (34%) and Shopping Center (36%)/53% of transit is oriented towards retail.

SUMMARY OF CHANGES

Separate Breakdown of Transit Reduction was added; Transit Reduction was added to PM Peak Period; Specialty Retail & Supermarket Pass-by Trips were averaged together; Corrected pass-by trip calculations

Vinings Atlanta Generated Trips (ADDENDUM)

	Total Generated Trips		
	Enter	Exit	Total
AM	541	436	977
(PM)	378	430	808

1: Atlanta Road at Cumberland Parkway

	ATLANTA ROAD Northbound			ATLANTA ROAD Southbound			CUMBERLAND PARKWAY Eastbound			CUMBERLAND PARKWAY Westbound		
PEAK HOUR	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
AM	0	0	108	32	0	0	0	38	0	87	31	26
(PM)	0	0	76	23	0	0	0	26	0	86	30	26

2: Paces Walk at Cumberland Parkway

	CUMBERLAND PARKWAY Northbound			CUMBERLAND PARKWAY Southbound			BROOKDALE VININGS Eastbound			PACES WALK/NORTH Westbound		
PEAK HOUR	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
AM	0	235	0	16	292	0	0	0	0	0	0	13
(PM)	0	232	0	11	204	0	0	0	0	0	0	13

3: Paces Ferry Road at Cumberland Parkway

	CUMBERLAND PARKWAY Northbound			CUMBERLAND PARKWAY Southbound			PACES FERRY ROAD Eastbound			PACES FERRY ROAD Westbound		
PEAK HOUR	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
AM	166	70	13	0	87	0	0	0	206	16	0	0
(PM)	163	69	13	0	60	0	0	0	144	11	0	0

4: I-285 Northbound Ramps at Paces Ferry Road

	I-285 NB EXIT RAMP Northbound				I-285 NB ON RAMP			PACES FERRY ROAD Eastbound			PACES FERRY ROAD Westbound	
PEAK HOUR	Left	Thru	Right	Rgt Ramp	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
AM	0	n/a	0	0	n/a	n/a	n/a	0	206	n/a	n/a	0	166
(PM)	0	n/a	0	0	n/a	n/a	n/a	0	144	n/a	n/a	0	163

5: I-285 Southbound Ramps at Paces Ferry Road

	I-285 SB ON RAMP			I-285 SB EXIT RAMP Southbound			PACES FERRY ROAD Eastbound			PACES FERRY ROAD Westbound		
PEAK HOUR	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
AM	n/a	n/a	n/a	206	n/a	0	n/a	0	0	0	0	n/a
(PM)	n/a	n/a	n/a	144	n/a	0	n/a	0	0	0	0	n/a

6: Cumberland Boulevard at Cumberland Parkway

	CUMBERLAND PARKWAY Northbound			CUMBERLAND PARKWAY Southbound			CUMBERLAND BOULEVARD Eastbound			CUMBERLAND BOULEVARD Westbound		
PEAK HOUR	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
AM	35	0	35	0	0	0	0	0	43	43	0	0
(PM)	34	0	34	0	0	0	0	0	30	30	0	0

7: Vinings Atlanta Driveway #1 at Cumberland Parkway

	CUMBERLAND PARKWAY Northbound			CUMBERLAND PARKWAY Southbound			Eastbound			VININGS ATL DWY #1 Westbound		
PEAK HOUR	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
AM	n/a	4	222	292	0	n/a	n/a	n/a	n/a	187	n/a	231
(PM)	n/a	4	155	204	0	n/a	n/a	n/a	n/a	185	n/a	228

8: Vinings Atlanta Driveway #2 at Cumberland Parkway

	CUMBERLAND PARKWAY Northbound			CUMBERLAND PARKWAY Southbound			Eastbound			VININGS ATL DWY #2 Westbound		
PEAK HOUR	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
AM	n/a	222	11	n/a	187	n/a	n/a	n/a	n/a	n/a	n/a	4
(PM)	n/a	155	8	n/a	185	n/a	n/a	n/a	n/a	n/a	n/a	4

9: Vinings Atlanta Driveway #3 at Paces Walk

	VININGS ATL DWY #3 Northbound			Southbound			PACES WALK Eastbound			PACES WALK		Westbound
PEAK HOUR	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
AM	13	n/a	0	n/a	n/a	n/a	n/a	0	16	0	0	n/a
(PM)	13	n/a	0	n/a	n/a	n/a	n/a	0	11	0	0	n/a

Note: Highlighted trips represent exiting trips.

Vinings Atlanta Generated Trips NET CHANGE (Addendum)

	Total Generated Trips		
	Enter	Exit	Total
(PM)	378	430	808

1: Atlanta Road at Cumberland Parkway

	ATLANTA ROAD Northbound			ATLANTA ROAD Southbound			CUMBERLAND PARKWAY Eastbound			CUMBERLAND PARKWAY Westbound		
PEAK HOUR	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
NET CHANGE	0	0	-11	-3	0	0	0	-4	0	-10	-3	-3

2: Paces Walk at Cumberland Parkway

	CUMBERLAND PARKWAY Northbound			CUMBERLAND PARKWAY Southbound			BROOKDALE VININGS Eastbound			PACES WALK/NORTH Westbound		
PEAK HOUR	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
NET CHANGE	0	-26	0	-2	-30	0	0	0	0	0	0	-1

3: Paces Ferry Road at Cumberland Parkway

	CUMBERLAND PARKWAY Northbound			CUMBERLAND PARKWAY Southbound			PACES FERRY ROAD Eastbound			PACES FERRY ROAD Westbound		
PEAK HOUR	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
NET CHANGE	-18	-8	-1	0	-9	0	0	0	-21	-2	0	0

4: I-285 Northbound Ramps at Paces Ferry Road

	I-285 NB EXIT RAMP Northbound				I-285 NB ON RAMP			PACES FERRY ROAD Eastbound			PACES FERRY ROAD Westbound		
PEAK HOUR	Left	Thru	Right	Rgt Ramp	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
NET CHANGE	0	n/a	0	0	n/a	n/a	n/a	0	-21	n/a	n/a	0	-18

5: I-285 Southbound Ramps at Paces Ferry Road

	I-285 SB ON RAMP			I-285 SB EXIT RAMP Southbound			PACES FERRY ROAD Eastbound			PACES FERRY ROAD Westbound		
PEAK HOUR	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
NET CHANGE	n/a	n/a	n/a	-21	n/a	0	n/a	0	0	0	0	n/a

6: Cumberland Boulevard at Cumberland Parkway

	CUMBERLAND PARKWAY Northbound			CUMBERLAND PARKWAY Southbound			CUMBERLAND BOULEVARD Eastbound			CUMBERLAND BOULEVARD Westbound		
PEAK HOUR	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
NET CHANGE	-4	0	-4	0	0	0	0	0	-4	-4	0	0

7: Vinings Atlanta Driveway #1 at Cumberland Parkway

	CUMBERLAND PARKWAY Northbound			CUMBERLAND PARKWAY Southbound			Eastbound			VININGS ATL DWY #1 Westbound		
PEAK HOUR	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
NET CHANGE	n/a	0	-22	-30	0	n/a	n/a	n/a	n/a	-21	n/a	-26

8: Vinings Atlanta Driveway #2 at Cumberland Parkway

	CUMBERLAND PARKWAY Northbound			CUMBERLAND PARKWAY Southbound			Eastbound			VININGS ATL DWY #2 Westbound		
PEAK HOUR	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
NET CHANGE	n/a	-22	-1	n/a	-21	n/a	n/a	n/a	n/a	n/a	n/a	0

9: Vinings Atlanta Driveway #3 at Paces Walk

	VININGS ATL DWY #3 Northbound			Southbound			PACES WALK Eastbound			PACES WALK		Westbound
PEAK HOUR	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
NET CHANGE	-1	n/a	0	n/a	n/a	n/a	n/a	0	-2	0	0	n/a

Vinings Atlanta Study Network: 2019 "Build" Traffic

1: Atlanta Road at Cumberland Parkway

	ATLANTA ROAD Northbound			ATLANTA ROAD Southbound			CUMBERLAND PARKWAY Eastbound			CUMBERLAND PARKWAY Westbound		
PEAK HOUR	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
AM	502	447	171	176	684	173	565	1284	1230	229	235	152
(PM)	1120	959	167	100	676	318	218	400	497	346	1083	151

2: Paces Walk at Cumberland Parkway

	CUMBERLAND PARKWAY Northbound			CUMBERLAND PARKWAY Southbound			BROOKDALE VININGS Eastbound			PACES WALK/NORTH Westbound		
PEAK HOUR	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
AM	2	1617	1	60	605	2	1	0	1	11	0	195
(PM)	0	889	7	189	1806	5	2	0	5	16	0	71

3: Paces Ferry Road at Cumberland Parkway

	CUMBERLAND PARKWAY Northbound			CUMBERLAND PARKWAY Southbound			PACES FERRY ROAD Eastbound			PACES FERRY ROAD Westbound		
PEAK HOUR	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
AM	618	1059	345	75	283	176	578	819	584	154	409	91
(PM)	496	475	196	110	905	414	224	493	693	486	956	92

4: I-285 Northbound Ramps at Paces Ferry Road

	I-285 NB EXIT RAMP Northbound				I-285 NB ON RAMP			PACES FERRY ROAD Eastbound			PACES FERRY ROAD Westbound		
PEAK HOUR	Left	Thru	Right	Rgt Ramp	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
AM	250	n/a	265	63	n/a	n/a	n/a	673	1808	n/a	n/a	630	565
(PM)	260	n/a	280	170	n/a	n/a	n/a	830	1081	n/a	n/a	1022	769

5: I-285 Southbound Ramps at Paces Ferry Road

	I-285 SB ON RAMP			I-285 SB EXIT RAMP Southbound			PACES FERRY ROAD Eastbound			PACES FERRY ROAD Westbound		
PEAK HOUR	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
AM	n/a	n/a	n/a	884	n/a	1315	n/a	1619	378	232	642	n/a
(PM)	n/a	n/a	n/a	534	n/a	686	n/a	1366	470	482	1026	n/a

6: Cumberland Boulevard at Cumberland Parkway

	CUMBERLAND PARKWAY Northbound			CUMBERLAND PARKWAY Southbound			CUMBERLAND BOULEVARD Eastbound			CUMBERLAND BOULEVARD Westbound		
PEAK HOUR	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
AM	374	93	1338	2	25	13	50	497	328	320	95	7
(PM)	359	128	636	31	322	147	130	193	455	1171	555	19

7: Vinings Atlanta Driveway #1 at Cumberland Parkway

	CUMBERLAND PARKWAY Northbound			CUMBERLAND PARKWAY Southbound			Eastbound			VININGS ATL DWY #1 Westbound		
PEAK HOUR	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
AM	n/a	1351	222	292	361	n/a	n/a	n/a	n/a	187	n/a	231
(PM)	n/a	670	155	204	1589	n/a	n/a	n/a	n/a	185	n/a	228

8: Vinings Atlanta Driveway #2 at Cumberland Parkway

	CUMBERLAND PARKWAY Northbound			CUMBERLAND PARKWAY Southbound			Eastbound			VININGS ATL DWY #2 Westbound		
PEAK HOUR	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
AM	n/a	1568	11	n/a	549	n/a	n/a	n/a	n/a	n/a	n/a	4
(PM)	n/a	821	8	n/a	1774	n/a	n/a	n/a	n/a	n/a	n/a	4

9: Vinings Atlanta Driveway #3 at Paces Walk

	VININGS ATL DWY #3 Northbound			Southbound			PACES WALK Eastbound			PACES WALK Westbound		
PEAK HOUR	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
AM	13	n/a	0	n/a	n/a	n/a	n/a	45	16	0	193	n/a
(PM)	13	n/a	0	n/a	n/a	n/a	n/a	186	11	0	74	n/a

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	1	0	1	10	0	172	2	1303	1	41	295	2
Future Volume (Veh/h)	1	0	1	10	0	172	2	1303	1	41	295	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.25	0.25	0.50	0.25	0.82	0.50	0.86	0.25	0.68	0.90	0.50
Hourly flow rate (vph)	4	0	4	20	0	210	4	1515	4	60	328	4
Pedestrians								3				
Lane Width (ft)								12.0				
Walking Speed (ft/s)								3.5				
Percent Blockage								0				
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)											1045	
pX, platoon unblocked												
vC, conflicting volume	1424	1975	167	1816	1977	760	332			1519		
vC1, stage 1 conf vol	448	448		1525	1525							
vC2, stage 2 conf vol	976	1527		291	452							
vCu, unblocked vol	1424	1975	167	1816	1977	760	332			1519		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)	6.5	5.5		6.5	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	92	100	100	83	100	40	100			87		
cM capacity (veh/h)	48	117	852	121	169	351	1239			445		

Direction, Lane #	EB 1	WB 1	NE 1	NE 2	NE 3	SW 1	SW 2	SW 3	SW 4
Volume Total	8	230	4	1010	509	60	164	164	4
Volume Left	4	20	4	0	0	60	0	0	0
Volume Right	4	210	0	0	4	0	0	0	4
cSH	92	301	1239	1700	1700	445	1700	1700	1700
Volume to Capacity	0.09	0.76	0.00	0.59	0.30	0.13	0.10	0.10	0.00
Queue Length 95th (ft)	7	146	0	0	0	12	0	0	0
Control Delay (s)	48.1	47.1	7.9	0.0	0.0	14.3	0.0	0.0	0.0
Lane LOS	E	E	A			B			
Approach Delay (s)	48.1	47.1	0.0			2.2			
Approach LOS	E	E							

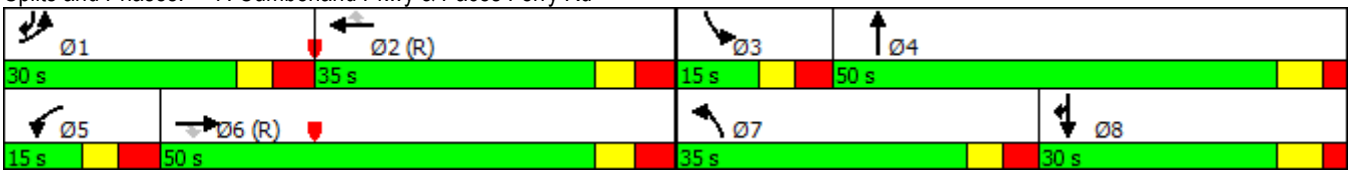
Intersection Summary				
Average Delay	5.6			
Intersection Capacity Utilization	53.9%	ICU Level of Service		A
Analysis Period (min)	15			

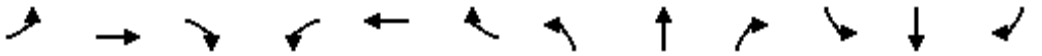
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	545	773	357	130	386	86	427	933	71	185	166
Future Volume (vph)	545	773	357	130	386	86	427	933	71	185	166
Lane Group Flow (vph)	606	859	406	140	429	104	547	1534	76	221	166
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA	pt+ov
Protected Phases	1	6		5	2		7	4	3	8	8 1
Permitted Phases			6			2					
Detector Phase	1	6	6	5	2	2	7	4	3	8	8 1
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)	12.5	26.0	26.0	12.5	26.0	26.0	12.0	25.0	12.0	25.0	
Total Split (s)	30.0	50.0	50.0	15.0	35.0	35.0	35.0	50.0	15.0	30.0	
Total Split (%)	23.1%	38.5%	38.5%	11.5%	26.9%	26.9%	26.9%	38.5%	11.5%	23.1%	
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0	4.0	3.5	4.5	3.5	4.5	
All-Red Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.5	2.5	3.5	2.5	
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)	7.5	8.0	8.0	7.5	8.0	8.0	7.0	7.0	7.0	7.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	None	Max	
v/c Ratio	0.76	0.74	0.34	0.71	0.37	0.18	0.82	0.90	0.70	0.34	0.13
Control Delay	59.0	43.6	3.7	80.3	44.3	0.7	61.1	47.7	91.7	45.9	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.0	43.6	3.7	80.3	44.3	0.7	61.1	47.7	91.7	45.9	4.3
Queue Length 50th (ft)	173	337	0	60	114	0	228	432	64	91	1
Queue Length 95th (ft)	215	415	35	#108	150	0	240	449	#141	139	26
Internal Link Dist (ft)		610			246			250		395	
Turn Bay Length (ft)	455		425	400		100			215		300
Base Capacity (vph)	880	1166	1183	196	1150	569	754	1700	111	644	1291
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.74	0.34	0.71	0.37	0.18	0.73	0.90	0.68	0.34	0.13

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 115 (88%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Cumberland Pkwy & Paces Ferry Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	545	773	357	130	386	86	427	933	313	71	185	166
Future Volume (vph)	545	773	357	130	386	86	427	933	313	71	185	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.5	8.0	8.0	7.5	8.0	8.0	7.0	7.0		7.0	7.0	7.0
Lane Util. Factor	0.94	0.95	0.88	0.97	0.91	1.00	0.97	0.91		1.00	0.86	0.86
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	0.99	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	5090	3610	2814	3400	5136	1583	3502	4959		1805	3170	2778
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	5090	3610	2814	3400	5136	1583	3502	4959		1805	3170	2778
Peak-hour factor, PHF	0.90	0.90	0.88	0.93	0.90	0.83	0.78	0.84	0.74	0.93	0.91	0.90
Adj. Flow (vph)	606	859	406	140	429	104	547	1111	423	76	203	184
RTOR Reduction (vph)	0	0	275	0	0	81	0	53	0	0	5	93
Lane Group Flow (vph)	606	859	131	140	429	23	547	1481	0	76	216	73
Heavy Vehicles (%)	0%	0%	1%	3%	1%	2%	0%	0%	1%	0%	2%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	pt+ov
Protected Phases	1	6		5	2		7	4		3	8	8 1
Permitted Phases			6			2						
Actuated Green, G (s)	20.4	42.0	42.0	7.5	29.1	29.1	24.8	43.2		7.8	26.2	53.6
Effective Green, g (s)	20.4	42.0	42.0	7.5	29.1	29.1	24.8	43.2		7.8	26.2	53.6
Actuated g/C Ratio	0.16	0.32	0.32	0.06	0.22	0.22	0.19	0.33		0.06	0.20	0.41
Clearance Time (s)	7.5	8.0	8.0	7.5	8.0	8.0	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	798	1166	909	196	1149	354	668	1647		108	638	1145
v/s Ratio Prot	c0.12	c0.24		0.04	0.08		c0.16	c0.30		0.04	0.07	0.03
v/s Ratio Perm			0.05			0.01						
v/c Ratio	0.76	0.74	0.14	0.71	0.37	0.07	0.82	0.90		0.70	0.34	0.06
Uniform Delay, d1	52.5	39.1	31.2	60.2	42.7	39.7	50.4	41.3		60.0	44.5	23.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.2	4.2	0.3	11.7	0.9	0.4	7.7	8.3		18.7	1.4	0.0
Delay (s)	56.6	43.3	31.6	71.9	43.7	40.1	58.2	49.6		78.7	45.9	23.1
Level of Service	E	D	C	E	D	D	E	D		E	D	C
Approach Delay (s)		45.1			49.0			51.9			43.1	
Approach LOS		D			D			D			D	

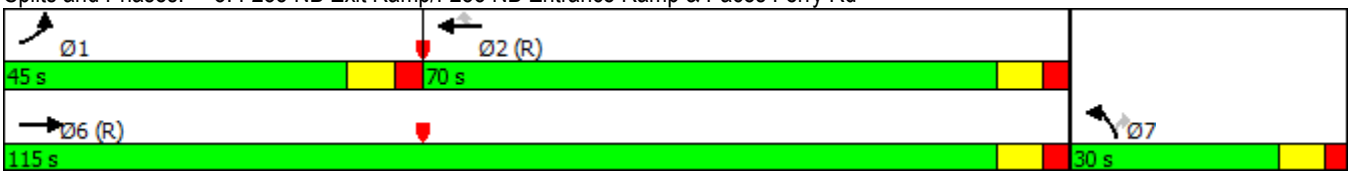
Intersection Summary			
HCM 2000 Control Delay	48.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	29.5
Intersection Capacity Utilization	79.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

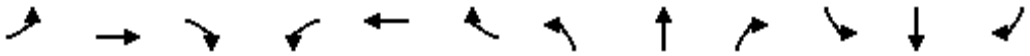
Lane Group	EBL	EBT	WBT	WBR	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	635	1512	594	377	236	250
Future Volume (vph)	635	1512	594	377	236	250
Lane Group Flow (vph)	676	1643	691	490	295	287
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	1	6	2		7	
Permitted Phases				2		7
Detector Phase	1	6	2	2	7	7
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	13.0	26.0	26.0	26.0	12.5	12.5
Total Split (s)	45.0	115.0	70.0	70.0	30.0	30.0
Total Split (%)	31.0%	79.3%	48.3%	48.3%	20.7%	20.7%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	3.0	3.0	3.0	3.0	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	8.0	8.0	8.0	8.0	7.5	7.5
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	None	None
v/c Ratio	0.86	0.41	0.18	0.30	0.70	0.67
Control Delay	65.2	6.1	21.7	2.4	70.0	47.3
Queue Delay	0.0	0.2	0.0	0.0	0.0	0.0
Total Delay	65.2	6.4	21.7	2.4	70.0	47.3
Queue Length 50th (ft)	317	166	88	0	140	98
Queue Length 95th (ft)	378	220	114	8	161	142
Internal Link Dist (ft)		660	610			
Turn Bay Length (ft)	520			320		
Base Capacity (vph)	893	4000	3776	1644	537	519
Starvation Cap Reductn	0	1341	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.62	0.18	0.30	0.55	0.55

Intersection Summary

Cycle Length: 145
Actuated Cycle Length: 145
Offset: 110 (76%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 8: I-285 NB Exit Ramp/I-285 NB Entrance Ramp & Paces Ferry Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	635	1512	0	0	594	377	236	0	250	0	0	0
Future Volume (vph)	635	1512	0	0	594	377	236	0	250	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0			8.0	8.0	7.5		7.5			
Lane Util. Factor	0.97	0.91			0.81	0.88	0.97		0.88			
Frt	1.00	1.00			1.00	0.85	1.00		0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)	3502	5187			7695	2842	3467		2814			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	3502	5187			7695	2842	3467		2814			
Peak-hour factor, PHF	0.94	0.92	0.25	0.25	0.86	0.77	0.80	0.25	0.87	0.25	0.25	0.25
Adj. Flow (vph)	676	1643	0	0	691	490	295	0	287	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	250	0	0	86	0	0	0
Lane Group Flow (vph)	676	1643	0	0	691	240	295	0	201	0	0	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	0%	1%	0%	0%	0%
Turn Type	Prot	NA			NA	Perm	Prot		Perm			
Protected Phases	1	6			2		7					
Permitted Phases						2			7			
Actuated Green, G (s)	32.7	111.8			71.1	71.1	17.7		17.7			
Effective Green, g (s)	32.7	111.8			71.1	71.1	17.7		17.7			
Actuated g/C Ratio	0.23	0.77			0.49	0.49	0.12		0.12			
Clearance Time (s)	8.0	8.0			8.0	8.0	7.5		7.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0		3.0			
Lane Grp Cap (vph)	789	3999			3773	1393	423		343			
v/s Ratio Prot	c0.19	c0.32			0.09		c0.09					
v/s Ratio Perm						0.08			0.07			
v/c Ratio	0.86	0.41			0.18	0.17	0.70		0.59			
Uniform Delay, d1	53.9	5.6			20.7	20.6	61.1		60.2			
Progression Factor	1.00	1.00			1.00	1.00	1.00		1.00			
Incremental Delay, d2	9.1	0.3			0.1	0.3	5.0		2.5			
Delay (s)	63.0	5.9			20.8	20.8	66.0		62.7			
Level of Service	E	A			C	C	E		E			
Approach Delay (s)		22.5			20.8			64.4			0.0	
Approach LOS		C			C			E			A	

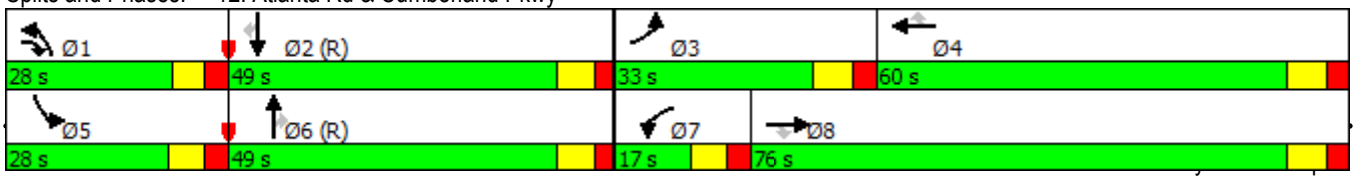
Intersection Summary			
HCM 2000 Control Delay	28.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	23.5
Intersection Capacity Utilization	68.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

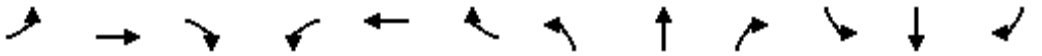
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	533	1176	1160	134	193	119	474	422	59	135	645	163
Future Volume (vph)	533	1176	1160	134	193	119	474	422	59	135	645	163
Lane Group Flow (vph)	635	1367	1196	172	227	157	539	521	82	185	665	187
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	8	1	7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Detector Phase	3	8	1	7	4	4	1	6	6	5	2	2
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)	13.0	26.0	12.5	12.5	26.0	26.0	12.5	26.0	26.0	13.0	26.0	26.0
Total Split (s)	33.0	76.0	28.0	17.0	60.0	60.0	28.0	49.0	49.0	28.0	49.0	49.0
Total Split (%)	19.4%	44.7%	16.5%	10.0%	35.3%	35.3%	16.5%	28.8%	28.8%	16.5%	28.8%	28.8%
Yellow Time (s)	5.0	5.0	4.0	4.5	5.0	5.0	4.0	5.0	5.0	4.5	5.0	5.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.5	2.5	3.0	2.5	2.5
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)	8.0	8.0	7.0	7.5	8.0	8.0	7.0	7.5	7.5	7.5	7.5	7.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
v/c Ratio	1.26	0.95	0.73	0.88	0.21	0.26	0.86	0.58	0.15	0.89	0.76	0.36
Control Delay	187.6	64.7	28.4	117.7	44.6	4.6	86.9	59.1	0.6	111.2	65.8	9.3
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	187.6	64.7	28.4	117.7	44.6	4.6	86.9	59.1	0.6	111.2	65.8	9.3
Queue Length 50th (ft)	~454	772	511	100	98	0	212	273	0	205	365	6
Queue Length 95th (ft)	#524	817	608	#134	128	13	#256	298	0	237	442	65
Internal Link Dist (ft)		536			1195			492			397	
Turn Bay Length (ft)	265		300	290		260	325		140	360		170
Base Capacity (vph)	504	1444	1632	195	1104	616	628	900	537	217	880	525
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.26	0.95	0.73	0.88	0.21	0.25	0.86	0.58	0.15	0.85	0.76	0.36

Intersection Summary

Cycle Length: 170
Actuated Cycle Length: 170
Offset: 91 (54%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 12: Atlanta Rd & Cumberland Pkwy





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	533	1176	1160	134	193	119	474	422	59	135	645	163
Future Volume (vph)	533	1176	1160	134	193	119	474	422	59	135	645	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0	7.0	7.5	8.0	8.0	7.0	7.5	7.5	7.5	7.5	7.5
Lane Util. Factor	0.97	0.95	0.88	0.97	0.95	1.00	0.94	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3610	2814	3502	3610	1615	5040	3574	1599	1805	3574	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3610	2814	3502	3610	1615	5040	3574	1599	1805	3574	1583
Peak-hour factor, PHF	0.84	0.86	0.97	0.78	0.85	0.76	0.88	0.81	0.72	0.73	0.97	0.87
Adj. Flow (vph)	635	1367	1196	172	227	157	539	521	82	185	665	187
RTOR Reduction (vph)	0	0	37	0	0	110	0	0	61	0	0	136
Lane Group Flow (vph)	635	1367	1159	172	227	47	539	521	21	185	665	51
Heavy Vehicles (%)	2%	0%	1%	0%	0%	0%	1%	1%	1%	0%	1%	2%
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	8	1	7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	25.0	67.4	88.6	9.5	51.4	51.4	21.2	42.9	42.9	19.7	41.9	41.9
Effective Green, g (s)	25.0	67.4	88.6	9.5	51.4	51.4	21.2	42.9	42.9	19.7	41.9	41.9
Actuated g/C Ratio	0.15	0.40	0.52	0.06	0.30	0.30	0.12	0.25	0.25	0.12	0.25	0.25
Clearance Time (s)	8.0	8.0	7.0	7.5	8.0	8.0	7.0	7.5	7.5	7.5	7.5	7.5
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
Lane Grp Cap (vph)	504	1431	1466	195	1091	488	628	901	403	209	880	390
v/s Ratio Prot	c0.18	c0.38	0.10	0.05	0.06		c0.11	0.15		0.10	c0.19	
v/s Ratio Perm			0.31			0.03			0.01			0.03
v/c Ratio	1.26	0.96	0.79	0.88	0.21	0.10	0.86	0.58	0.05	0.89	0.76	0.13
Uniform Delay, d1	72.5	49.8	33.1	79.7	44.1	42.6	72.9	55.6	48.1	74.0	59.3	49.9
Progression 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
Incremental Delay, d2	132.3	14.4	3.0	34.0	0.1	0.1	11.2	2.7	0.2	32.8	6.0	0.7
Delay (s)	204.8	64.2	36.1	113.7	44.2	42.7	84.1	58.3	48.4	106.8	65.3	50.6
Level of Service	F	E	D	F	D	D	F	E	D	F	E	D
Approach Delay (s)		81.6			65.3			69.8			70.1	
Approach LOS		F			E			E			E	

Intersection Summary			
HCM 2000 Control Delay	75.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	31.0
Intersection Capacity Utilization	88.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	NBL	NBT	NBR	SBT	SBR	SEL	SET	SER	NWL	NWT
Lane Configurations										
Traffic Volume (vph)	320	88	1229	24	12	47	469	269	261	90
Future Volume (vph)	320	88	1229	24	12	47	469	269	261	90
Lane Group Flow (vph)	228	234	1413	46	17	66	521	306	148	268
Turn Type	Split	NA	Prot	NA	Perm	Split	NA	Perm	Split	NA
Protected Phases	4	4	4	8		6	6		2	2
Permitted Phases					8			6		
Detector Phase	4	4	4	8	8	6	6	6	2	2
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)	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Total Split (s)	35.0	35.0	35.0	35.0	35.0	40.0	40.0	40.0	40.0	40.0
Total Split (%)	23.3%	23.3%	23.3%	23.3%	23.3%	26.7%	26.7%	26.7%	26.7%	26.7%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
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)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag										
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	Max	Max	Max	C-Max	C-Max
v/c Ratio	0.73	0.73	0.91	0.28	0.09	0.17	0.66	0.52	0.24	0.21
Control Delay	70.6	70.5	15.9	72.3	0.8	48.8	57.9	8.2	34.9	33.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.6	70.5	15.9	72.3	0.8	48.8	57.9	8.2	34.9	33.2
Queue Length 50th (ft)	223	229	81	23	0	53	246	0	112	100
Queue Length 95th (ft)	327	255	163	28	0	76	312	72	175	127
Internal Link Dist (ft)		1280		195			880			560
Turn Bay Length (ft)	255		245			220		320	440	
Base Capacity (vph)	320	327	1554	625	375	397	794	593	619	1253
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.72	0.91	0.07	0.05	0.17	0.66	0.52	0.24	0.21

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 17 (11%), Referenced to phase 2:NWTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 22: Cumberland Pkwy/Cumberland Mall & Cumberland Blvd

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	320	88	1229	2	24	12	47	469	269	261	90	7
Future Volume (vph)	320	88	1229	2	24	12	47	469	269	261	90	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Lane Util. Factor	0.95	0.95	0.88		0.95	1.00	1.00	0.95	1.00	0.91	0.91	
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	0.98	1.00		1.00	1.00	0.95	1.00	1.00	0.95	0.97	
Satd. Flow (prot)	1715	1754	2842		3350	1442	1805	3610	1615	1643	3320	
Flt Permitted	0.95	0.98	1.00		1.00	1.00	0.95	1.00	1.00	0.95	0.97	
Satd. Flow (perm)	1715	1754	2842		3350	1442	1805	3610	1615	1643	3320	
Peak-hour factor, PHF	0.94	0.72	0.87	0.50	0.57	0.69	0.71	0.90	0.88	0.88	0.82	0.75
Adj. Flow (vph)	340	122	1413	4	42	17	66	521	306	297	110	9
RTOR Reduction (vph)	0	0	1028	0	0	16	0	0	239	0	1	0
Lane Group Flow (vph)	228	234	385	0	46	1	66	521	67	148	267	0
Heavy Vehicles (%)	0%	1%	0%	0%	8%	12%	0%	0%	0%	0%	2%	0%
Turn Type	Split	NA	Prot	Split	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	4	4	4	8	8		6	6		2	2	
Permitted Phases						8			6			
Actuated Green, G (s)	27.5	27.5	27.5		6.4	6.4	33.0	33.0	33.0	55.1	55.1	
Effective Green, g (s)	27.5	27.5	27.5		6.4	6.4	33.0	33.0	33.0	55.1	55.1	
Actuated g/C Ratio	0.18	0.18	0.18		0.04	0.04	0.22	0.22	0.22	0.37	0.37	
Clearance Time (s)	7.0	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	314	321	521		142	61	397	794	355	603	1219	
v/s Ratio Prot	0.13	0.13	c0.14		c0.01		0.04	c0.14		c0.09	0.08	
v/s Ratio Perm						0.00			0.04			
v/c Ratio	0.73	0.73	0.74		0.32	0.01	0.17	0.66	0.19	0.25	0.22	
Uniform Delay, d1	57.7	57.7	57.9		69.7	68.8	47.4	53.3	47.6	33.0	32.6	
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	7.3	7.2	4.9		1.3	0.1	0.9	4.2	1.2	1.0	0.4	
Delay (s)	65.0	65.0	62.7		71.0	68.8	48.3	57.5	48.8	34.0	33.1	
Level of Service	E	E	E		E	E	D	E	D	C	C	
Approach Delay (s)		63.3			70.4			53.9			33.4	
Approach LOS		E			E			D			C	

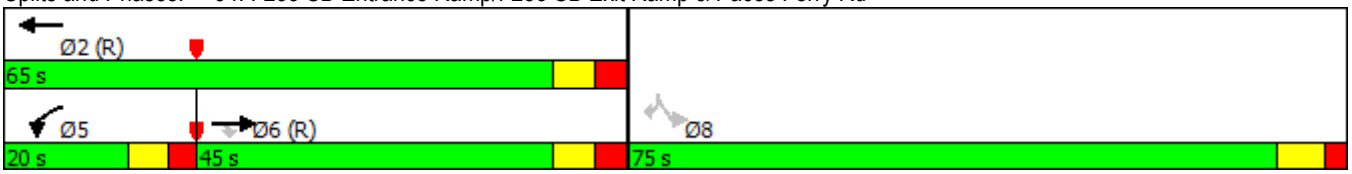
Intersection Summary			
HCM 2000 Control Delay	57.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	28.0
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

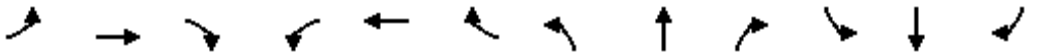
Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1527	357	219	606	640	1241
Future Volume (vph)	1527	357	219	606	640	1241
Lane Group Flow (vph)	1755	410	243	666	681	1364
Turn Type	NA	Perm	Prot	NA	Perm	Perm
Protected Phases	6		5	2		
Permitted Phases		6			8	8
Detector Phase	6	6	5	2	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	26.0	26.0	12.0	26.0	20.0	20.0
Total Split (s)	45.0	45.0	20.0	65.0	75.0	75.0
Total Split (%)	32.1%	32.1%	14.3%	46.4%	53.6%	53.6%
Yellow Time (s)	4.5	4.5	4.0	4.5	5.0	5.0
All-Red Time (s)	3.5	3.5	3.0	3.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	8.0	8.0	7.0	8.0	7.5	7.5
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	None	C-Max	None	None
v/c Ratio	0.82	0.56	0.77	0.31	0.29	0.94
Control Delay	51.4	7.7	79.1	27.8	22.9	42.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.4	7.7	79.1	27.8	22.9	42.6
Queue Length 50th (ft)	378	9	113	149	128	567
Queue Length 95th (ft)	399	81	#172	183	157	#729
Internal Link Dist (ft)	560			660		
Turn Bay Length (ft)		275				
Base Capacity (vph)	2143	731	321	2179	2454	1484
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.56	0.76	0.31	0.28	0.92

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 48 (34%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 34: I-285 SB Entrance Ramp/I-285 SB Exit Ramp & Paces Ferry Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1527	357	219	606	0	0	0	0	640	0	1241
Future Volume (vph)	0	1527	357	219	606	0	0	0	0	640	0	1241
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.0	8.0	7.0	8.0					7.5		7.5
Lane Util. Factor		0.81	1.00	0.97	0.91					0.94		0.88
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		7695	1599	3433	5187					5090		2842
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		7695	1599	3433	5187					5090		2842
Peak-hour factor, PHF	0.25	0.87	0.87	0.90	0.91	0.25	0.25	0.25	0.25	0.94	0.25	0.91
Adj. Flow (vph)	0	1755	410	243	666	0	0	0	0	681	0	1364
RTOR Reduction (vph)	0	0	286	0	0	0	0	0	0	0	0	117
Lane Group Flow (vph)	0	1755	124	243	666	0	0	0	0	681	0	1247
Heavy Vehicles (%)	0%	0%	1%	2%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type		NA	Perm	Prot	NA					Perm		Perm
Protected Phases		6		5	2							
Permitted Phases			6							8		8
Actuated Green, G (s)		39.0	39.0	12.8	58.8					65.7		65.7
Effective Green, g (s)		39.0	39.0	12.8	58.8					65.7		65.7
Actuated g/C Ratio		0.28	0.28	0.09	0.42					0.47		0.47
Clearance Time (s)		8.0	8.0	7.0	8.0					7.5		7.5
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0		3.0
Lane Grp Cap (vph)		2143	445	313	2178					2388		1333
v/s Ratio Prot		c0.23		c0.07	0.13							
v/s Ratio Perm			0.08							0.13		c0.44
v/c Ratio		0.82	0.28	0.78	0.31					0.29		0.94
Uniform Delay, d1		47.2	39.5	62.2	27.0					22.8		35.1
Progression Factor		1.00	1.00	1.00	1.00					1.00		1.00
Incremental Delay, d2		3.6	1.5	11.4	0.4					0.1		12.2
Delay (s)		50.8	41.0	73.6	27.4					22.8		47.3
Level of Service		D	D	E	C					C		D
Approach Delay (s)		49.0			39.7			0.0			39.2	
Approach LOS		D			D			A			D	

Intersection Summary			
HCM 2000 Control Delay	43.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	68.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	2	0	5	15	0	55	0	620	7	168	1511	5
Future Volume (Veh/h)	2	0	5	15	0	55	0	620	7	168	1511	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.50	0.25	0.31	0.47	0.25	0.76	0.25	0.93	0.44	0.78	0.97	0.62
Hourly flow rate (vph)	4	0	16	32	0	72	0	667	16	215	1558	8
Pedestrians								3			3	
Lane Width (ft)								12.0			12.0	
Walking Speed (ft/s)								3.5			3.5	
Percent Blockage								0			0	
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)											1045	
pX, platoon unblocked	0.51	0.51	0.51	0.51	0.51		0.51					
vC, conflicting volume	2396	2671	782	1903	2671	344	1566			683		
vC1, stage 1 conf vol	1988	1988		675	675							
vC2, stage 2 conf vol	408	683		1228	1996							
vCu, unblocked vol	1822	2358	0	858	2358	344	200			683		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)	6.5	5.5		6.5	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	100	97	89	100	89	100			77		
cM capacity (veh/h)	93	106	557	295	114	655	709			919		

Direction, Lane #	EB 1	WB 1	NE 1	NE 2	NE 3	SW 1	SW 2	SW 3	SW 4
Volume Total	20	104	0	445	238	215	779	779	8
Volume Left	4	32	0	0	0	215	0	0	0
Volume Right	16	72	0	0	16	0	0	0	8
cSH	280	477	1700	1700	1700	919	1700	1700	1700
Volume to Capacity	0.07	0.22	0.00	0.26	0.14	0.23	0.46	0.46	0.00
Queue Length 95th (ft)	6	21	0	0	0	23	0	0	0
Control Delay (s)	18.9	14.6	0.0	0.0	0.0	10.1	0.0	0.0	0.0
Lane LOS	C	B				B			
Approach Delay (s)	18.9	14.6	0.0			1.2			
Approach LOS	C	B							

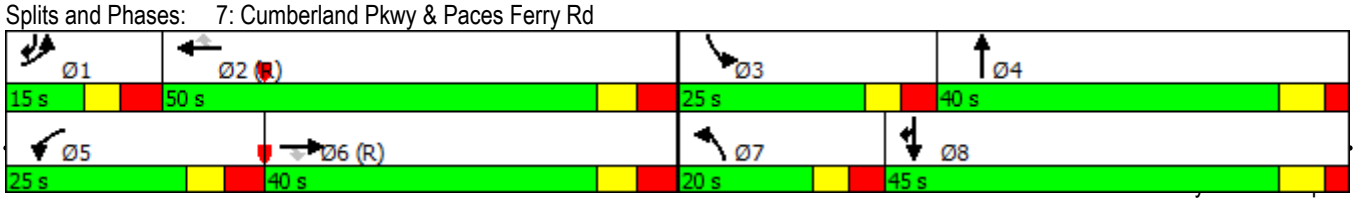
Intersection Summary				
Average Delay	1.6			
Intersection Capacity Utilization	60.2%	ICU Level of Service		B
Analysis Period (min)	15			

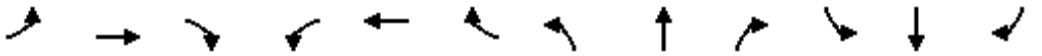
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	211	465	518	448	902	87	314	383	104	797	391
Future Volume (vph)	211	465	518	448	902	87	314	383	104	797	391
Lane Group Flow (vph)	248	489	602	487	1100	104	388	654	120	960	482
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA	pt+ov
Protected Phases	1	6		5	2		7	4	3	8	8 1
Permitted Phases			6			2					
Detector Phase	1	6	6	5	2	2	7	4	3	8	8 1
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)	12.5	26.0	26.0	12.5	26.0	26.0	12.0	25.0	12.0	25.0	
Total Split (s)	15.0	40.0	40.0	25.0	50.0	50.0	20.0	40.0	25.0	45.0	
Total Split (%)	11.5%	30.8%	30.8%	19.2%	38.5%	38.5%	15.4%	30.8%	19.2%	34.6%	
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0	4.0	3.5	4.5	3.5	4.5	
All-Red Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.5	2.5	3.5	2.5	
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)	7.5	8.0	8.0	7.5	8.0	8.0	7.0	7.0	7.0	7.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	None	Max	
v/c Ratio	0.86	0.55	0.58	1.03	0.66	0.17	1.11	0.44	0.63	1.01	0.39
Control Delay	86.8	45.5	12.1	104.8	40.1	1.6	133.4	33.8	70.2	77.2	18.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	86.8	45.5	12.1	104.8	40.1	1.6	133.4	33.8	70.2	77.2	18.3
Queue Length 50th (ft)	74	190	52	~226	291	0	~192	141	98	~479	105
Queue Length 95th (ft)	#112	247	99	#337	304	3	#251	183	154	#617	109
Internal Link Dist (ft)		610			246			250		395	
Turn Bay Length (ft)	455		425	400		100			215		300
Base Capacity (vph)	290	888	1042	471	1675	626	350	1480	249	950	1229
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.86	0.55	0.58	1.03	0.66	0.17	1.11	0.44	0.48	1.01	0.39

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 13 (10%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Cumberland Pkwy & Paces Ferry Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	211	465	518	448	902	87	314	383	173	104	797	391
Future Volume (vph)	211	465	518	448	902	87	314	383	173	104	797	391
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.5	8.0	8.0	7.5	8.0	8.0	7.0	7.0		7.0	7.0	7.0
Lane Util. Factor	0.94	0.95	0.88	0.97	0.91	1.00	0.97	0.91		1.00	0.86	0.86
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95		1.00	0.99	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	5040	3610	2814	3502	5187	1615	3502	4926		1805	3240	2778
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	5040	3610	2814	3502	5187	1615	3502	4926		1805	3240	2778
Peak-hour factor, PHF	0.85	0.95	0.86	0.92	0.82	0.84	0.81	0.88	0.79	0.87	0.88	0.73
Adj. Flow (vph)	248	489	602	487	1100	104	388	435	219	120	906	536
RTOR Reduction (vph)	0	0	350	0	0	70	0	66	0	0	3	98
Lane Group Flow (vph)	248	489	252	487	1100	34	388	588	0	120	957	384
Heavy Vehicles (%)	1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	pt+ov
Protected Phases	1	6		5	2		7	4		3	8	8 1
Permitted Phases			6			2						
Actuated Green, G (s)	7.5	32.0	32.0	17.5	42.0	42.0	13.0	37.3		13.7	38.0	52.5
Effective Green, g (s)	7.5	32.0	32.0	17.5	42.0	42.0	13.0	37.3		13.7	38.0	52.5
Actuated g/C Ratio	0.06	0.25	0.25	0.13	0.32	0.32	0.10	0.29		0.11	0.29	0.40
Clearance Time (s)	7.5	8.0	8.0	7.5	8.0	8.0	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	290	888	692	471	1675	521	350	1413		190	947	1121
v/s Ratio Prot	0.05	0.14		c0.14	c0.21		c0.11	0.12		0.07	c0.30	0.14
v/s Ratio Perm			0.09			0.02						
v/c Ratio	0.86	0.55	0.36	1.03	0.66	0.06	1.11	0.42		0.63	1.01	0.34
Uniform Delay, d1	60.7	42.7	40.6	56.2	37.8	30.4	58.5	37.5		55.7	46.0	26.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	21.1	2.5	1.5	50.5	2.0	0.2	80.7	0.9		6.7	31.9	0.2
Delay (s)	81.8	45.2	42.1	106.7	39.8	30.7	139.2	38.4		62.4	77.9	27.0
Level of Service	F	D	D	F	D	C	F	D		E	E	C
Approach Delay (s)		50.6			58.5			75.9			61.0	
Approach LOS		D			E			E			E	

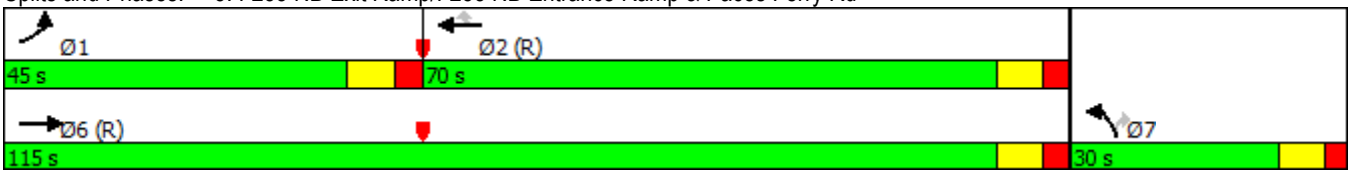
Intersection Summary			
HCM 2000 Control Delay	60.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	29.5
Intersection Capacity Utilization	83.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

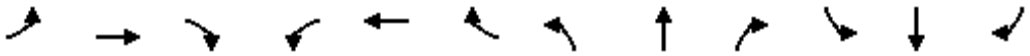
Lane Group	EBL	EBT	WBT	WBR	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	783	884	964	571	245	264
Future Volume (vph)	783	884	964	571	245	264
Lane Group Flow (vph)	921	961	1121	680	310	338
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	1	6	2		7	
Permitted Phases				2		7
Detector Phase	1	6	2	2	7	7
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	13.0	26.0	26.0	26.0	12.5	12.5
Total Split (s)	45.0	115.0	70.0	70.0	30.0	30.0
Total Split (%)	31.0%	79.3%	48.3%	48.3%	20.7%	20.7%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	3.0	3.0	3.0	3.0	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	8.0	8.0	8.0	8.0	7.5	7.5
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	None	None
v/c Ratio	0.92	0.24	0.34	0.42	0.71	0.52
Control Delay	65.0	5.1	28.2	2.6	70.1	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.0	5.1	28.2	2.6	70.1	8.3
Queue Length 50th (ft)	436	83	173	0	147	0
Queue Length 95th (ft)	#553	112	187	22	167	19
Internal Link Dist (ft)		660	610			
Turn Bay Length (ft)	520			320		
Base Capacity (vph)	1001	3987	3290	1604	543	722
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.24	0.34	0.42	0.57	0.47

Intersection Summary

Cycle Length: 145
Actuated Cycle Length: 145
Offset: 23 (16%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 8: I-285 NB Exit Ramp/I-285 NB Entrance Ramp & Paces Ferry Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	783	884	0	0	964	571	245	0	264	0	0	0
Future Volume (vph)	783	884	0	0	964	571	245	0	264	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0			8.0	8.0	7.5		7.5			
Lane Util. Factor	0.97	0.91			0.81	0.88	0.97		0.88			
Frt	1.00	1.00			1.00	0.85	1.00		0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)	3502	5187			7695	2842	3502		2814			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	3502	5187			7695	2842	3502		2814			
Peak-hour factor, PHF	0.85	0.92	0.25	0.25	0.86	0.84	0.79	0.25	0.78	0.25	0.25	0.25
Adj. Flow (vph)	921	961	0	0	1121	680	310	0	338	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	389	0	0	296	0	0	0
Lane Group Flow (vph)	921	961	0	0	1121	291	310	0	42	0	0	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%
Turn Type	Prot	NA			NA	Perm	Prot		Perm			
Protected Phases	1	6			2		7					
Permitted Phases						2			7			
Actuated Green, G (s)	41.5	111.5			62.0	62.0	18.0		18.0			
Effective Green, g (s)	41.5	111.5			62.0	62.0	18.0		18.0			
Actuated g/C Ratio	0.29	0.77			0.43	0.43	0.12		0.12			
Clearance Time (s)	8.0	8.0			8.0	8.0	7.5		7.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0		3.0			
Lane Grp Cap (vph)	1002	3988			3290	1215	434		349			
v/s Ratio Prot	c0.26	0.19			c0.15		c0.09					
v/s Ratio Perm						0.10			0.01			
v/c Ratio	0.92	0.24			0.34	0.24	0.71		0.12			
Uniform Delay, d1	50.1	4.8			27.8	26.5	61.0		56.5			
Progression Factor	1.00	1.00			1.00	1.00	1.00		1.00			
Incremental Delay, d2	12.9	0.1			0.3	0.5	5.5		0.2			
Delay (s)	63.0	4.9			28.1	26.9	66.5		56.6			
Level of Service	E	A			C	C	E		E			
Approach Delay (s)		33.3			27.7			61.4			0.0	
Approach LOS		C			C			E			A	

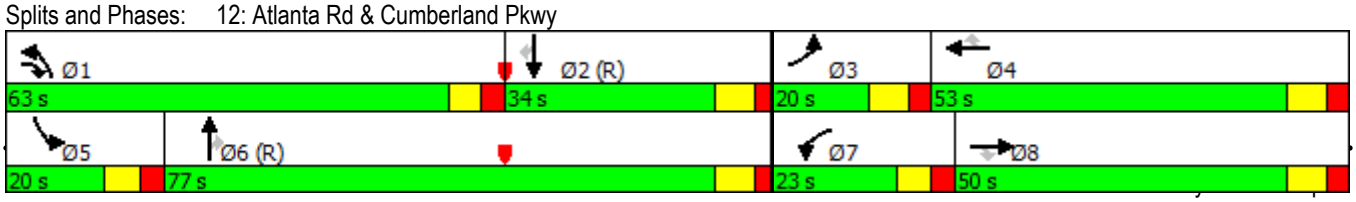
Intersection Summary			
HCM 2000 Control Delay	35.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	23.5
Intersection Capacity Utilization	68.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

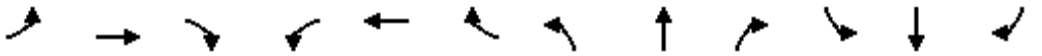
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	206	352	469	245	993	118	1057	905	86	73	638	300
Future Volume (vph)	206	352	469	245	993	118	1057	905	86	73	638	300
Lane Group Flow (vph)	224	391	533	272	1068	171	1124	953	100	88	709	341
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	8	1	7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Detector Phase	3	8	1	7	4	4	1	6	6	5	2	2
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)	13.0	26.0	12.5	12.5	26.0	26.0	12.5	26.0	26.0	13.0	26.0	26.0
Total Split (s)	20.0	50.0	63.0	23.0	53.0	53.0	63.0	77.0	77.0	20.0	34.0	34.0
Total Split (%)	11.8%	29.4%	37.1%	13.5%	31.2%	31.2%	37.1%	45.3%	45.3%	11.8%	20.0%	20.0%
Yellow Time (s)	5.0	5.0	4.0	4.5	5.0	5.0	4.0	5.0	5.0	4.5	5.0	5.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.5	2.5	3.0	2.5	2.5
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)	8.0	8.0	7.0	7.5	8.0	8.0	7.0	7.5	7.5	7.5	7.5	7.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
v/c Ratio	0.93	0.44	0.32	0.86	1.12	0.31	0.80	0.64	0.14	0.72	0.96	0.73
Control Delay	118.2	55.8	16.0	101.3	122.7	7.3	61.7	42.4	2.0	107.4	88.6	40.3
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	118.2	55.8	16.0	101.3	122.7	7.3	61.7	42.4	2.0	107.4	88.6	40.3
Queue Length 50th (ft)	130	195	144	156	~716	0	415	448	0	97	416	179
Queue Length 95th (ft)	#215	251	161	#234	#857	11	443	526	13	150	#639	#333
Internal Link Dist (ft)		536			1195			492			397	
Turn Bay Length (ft)	265		300	290		260	325		140	360		170
Base Capacity (vph)	242	895	1787	319	955	554	1660	1480	739	132	741	467
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.44	0.30	0.85	1.12	0.31	0.68	0.64	0.14	0.67	0.96	0.73

Intersection Summary

Cycle Length: 170
Actuated Cycle Length: 170
Offset: 87 (51%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 12: Atlanta Rd & Cumberland Pkwy





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	206	352	469	245	993	118	1057	905	86	73	638	300
Future Volume (vph)	206	352	469	245	993	118	1057	905	86	73	638	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0	7.0	7.5	8.0	8.0	7.0	7.5	7.5	7.5	7.5	7.5
Lane Util. Factor	0.97	0.95	0.88	0.97	0.95	1.00	0.94	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3610	2814	3502	3610	1615	5040	3574	1599	1805	3574	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3610	2814	3502	3610	1615	5040	3574	1599	1805	3574	1583
Peak-hour factor, PHF	0.92	0.90	0.88	0.90	0.93	0.69	0.94	0.95	0.86	0.83	0.90	0.88
Adj. Flow (vph)	224	391	533	272	1068	171	1124	953	100	88	709	341
RTOR Reduction (vph)	0	0	38	0	0	126	0	0	59	0	0	139
Lane Group Flow (vph)	224	391	495	272	1068	45	1124	953	41	88	709	202
Heavy Vehicles (%)	2%	0%	1%	0%	0%	0%	1%	1%	1%	0%	1%	2%
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	8	1	7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	12.0	42.2	89.4	15.3	45.0	45.0	47.2	70.4	70.4	11.6	35.3	35.3
Effective Green, g (s)	12.0	42.2	89.4	15.3	45.0	45.0	47.2	70.4	70.4	11.6	35.3	35.3
Actuated g/C Ratio	0.07	0.25	0.53	0.09	0.26	0.26	0.28	0.41	0.41	0.07	0.21	0.21
Clearance Time (s)	8.0	8.0	7.0	7.5	8.0	8.0	7.0	7.5	7.5	7.5	7.5	7.5
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
Lane Grp Cap (vph)	242	896	1479	315	955	427	1399	1480	662	123	742	328
v/s Ratio Prot	0.07	0.11	0.09	c0.08	c0.30		c0.22	0.27		0.05	c0.20	
v/s Ratio Perm			0.08			0.03			0.03			0.13
v/c Ratio	0.93	0.44	0.33	0.86	1.12	0.11	0.80	0.64	0.06	0.72	0.96	0.61
Uniform Delay, d1	78.6	53.9	23.2	76.3	62.5	47.3	57.1	39.8	30.0	77.6	66.6	61.2
Progression 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
Incremental Delay, d2	37.9	0.3	0.1	20.9	67.3	0.1	3.4	2.2	0.2	17.9	23.8	8.3
Delay (s)	116.4	54.2	23.3	97.2	129.8	47.4	60.5	42.0	30.1	95.5	90.4	69.5
Level of Service	F	D	C	F	F	D	E	D	C	F	F	E
Approach Delay (s)		52.0			114.6			51.0			84.5	
Approach LOS		D			F			D			F	

Intersection Summary			
HCM 2000 Control Delay	73.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	31.0
Intersection Capacity Utilization	96.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	NBL	NBT	NBR	SBT	SBR	SEL	SET	SER	NWL	NWT
Lane Configurations										
Traffic Volume (vph)	306	121	568	304	139	123	182	401	1076	524
Future Volume (vph)	306	121	568	304	139	123	182	401	1076	524
Lane Group Flow (vph)	252	259	645	349	146	160	256	514	584	1208
Turn Type	Split	NA	Prot	NA	Perm	Split	NA	Perm	Split	NA
Protected Phases	4	4	4	8		6	6		2	2
Permitted Phases					8			6		
Detector Phase	4	4	4	8	8	6	6	6	2	2
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)	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Total Split (s)	35.0	35.0	35.0	35.0	35.0	40.0	40.0	40.0	40.0	40.0
Total Split (%)	23.3%	23.3%	23.3%	23.3%	23.3%	26.7%	26.7%	26.7%	26.7%	26.7%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
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)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag										
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	Max	Max	Max	C-Max	C-Max
v/c Ratio	0.83	0.83	0.62	0.72	0.42	0.40	0.34	0.79	1.29	1.30
Control Delay	81.3	80.5	6.4	70.0	11.6	53.7	50.7	24.0	188.0	184.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	81.3	80.5	6.4	70.0	11.6	53.7	50.7	24.0	188.0	184.9
Queue Length 50th (ft)	250	257	0	174	0	135	112	130	~815	~852
Queue Length 95th (ft)	#341	320	48	221	62	175	120	168	#1146	#1006
Internal Link Dist (ft)		1280		195			880			560
Turn Bay Length (ft)	255		245			220		320	440	
Base Capacity (vph)	320	330	1055	649	414	397	763	650	453	930
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.78	0.61	0.54	0.35	0.40	0.34	0.79	1.29	1.30

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 29 (19%), Referenced to phase 2:NWTL, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 22: Cumberland Pkwy/Cumberland Mall & Cumberland Blvd

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	306	121	568	29	304	139	123	182	401	1076	524	18
Future Volume (vph)	306	121	568	29	304	139	123	182	401	1076	524	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Lane Util. Factor	0.95	0.95	0.88		0.95	1.00	1.00	0.95	1.00	0.91	0.91	
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	0.98	1.00		1.00	1.00	0.95	1.00	1.00	0.95	0.98	
Satd. Flow (prot)	1715	1768	2842		3477	1583	1805	3471	1615	1643	3364	
Flt Permitted	0.95	0.98	1.00		1.00	1.00	0.95	1.00	1.00	0.95	0.98	
Satd. Flow (perm)	1715	1768	2842		3477	1583	1805	3471	1615	1643	3364	
Peak-hour factor, PHF	0.85	0.80	0.88	1.00	0.95	0.95	0.77	0.71	0.78	0.94	0.86	0.48
Adj. Flow (vph)	360	151	645	29	320	146	160	256	514	1145	609	38
RTOR Reduction (vph)	0	0	531	0	0	126	0	0	296	0	1	0
Lane Group Flow (vph)	252	259	114	0	349	20	160	256	218	584	1207	0
Heavy Vehicles (%)	0%	0%	0%	30%	1%	2%	0%	4%	0%	0%	0%	0%
Turn Type	Split	NA	Prot	Split	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	4	4	4	8	8		6	6		2	2	
Permitted Phases						8			6			
Actuated Green, G (s)	26.6	26.6	26.6		21.0	21.0	33.0	33.0	33.0	41.4	41.4	
Effective Green, g (s)	26.6	26.6	26.6		21.0	21.0	33.0	33.0	33.0	41.4	41.4	
Actuated g/C Ratio	0.18	0.18	0.18		0.14	0.14	0.22	0.22	0.22	0.28	0.28	
Clearance Time (s)	7.0	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	304	313	503		486	221	397	763	355	453	928	
v/s Ratio Prot	c0.15	0.15	0.04		c0.10		0.09	0.07		0.36	c0.36	
v/s Ratio Perm						0.01			c0.14			
v/c Ratio	0.83	0.83	0.23		0.72	0.09	0.40	0.34	0.62	1.29	1.30	
Uniform Delay, d1	59.5	59.5	52.9		61.7	56.2	50.1	49.3	52.8	54.3	54.3	
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	16.4	15.9	0.2		5.0	0.2	3.0	1.2	7.8	145.9	143.0	
Delay (s)	75.9	75.4	53.1		66.7	56.4	53.1	50.5	60.5	200.2	197.3	
Level of Service	E	E	D		E	E	D	D	E	F	F	
Approach Delay (s)		63.1			63.7			56.5			198.3	
Approach LOS		E			E			E			F	

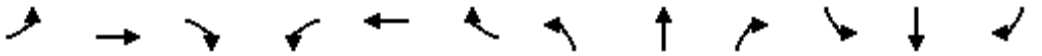
Intersection Summary			
HCM 2000 Control Delay	117.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	28.0
Intersection Capacity Utilization	82.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1289	443	455	968	368	647
Future Volume (vph)	1289	443	455	968	368	647
Lane Group Flow (vph)	1516	554	569	1088	400	681
Turn Type	NA	Perm	Prot	NA	Perm	Perm
Protected Phases	6		5	2		
Permitted Phases		6			8	8
Detector Phase	6	6	5	2	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	26.0	26.0	12.0	26.0	20.0	20.0
Total Split (s)	70.0	70.0	45.0	115.0	25.0	25.0
Total Split (%)	50.0%	50.0%	32.1%	82.1%	17.9%	17.9%
Yellow Time (s)	4.5	4.5	4.0	4.5	5.0	5.0
All-Red Time (s)	3.5	3.5	3.0	3.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	8.0	8.0	7.0	8.0	7.5	7.5
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	None	C-Max	None	None
v/c Ratio	0.38	0.54	0.81	0.27	0.63	1.11
Control Delay	21.4	8.7	62.9	5.1	63.1	100.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.4	8.7	62.9	5.1	63.1	100.9
Queue Length 50th (ft)	200	84	257	94	124	~259
Queue Length 95th (ft)	229	133	266	108	162	#398
Internal Link Dist (ft)	560			660		
Turn Bay Length (ft)		275				
Base Capacity (vph)	3954	1018	950	3964	636	614
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.54	0.60	0.27	0.63	1.11

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 23 (16%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 34: I-285 SB Entrance Ramp/I-285 SB Exit Ramp & Paces Ferry Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1289	443	455	968	0	0	0	0	368	0	647
Future Volume (vph)	0	1289	443	455	968	0	0	0	0	368	0	647
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.0	8.0	7.0	8.0					7.5		7.5
Lane Util. Factor		0.81	1.00	0.97	0.91					0.94		0.88
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		7695	1615	3502	5187					5090		2842
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		7695	1615	3502	5187					5090		2842
Peak-hour factor, PHF	0.25	0.85	0.80	0.80	0.89	0.25	0.25	0.25	0.25	0.92	0.25	0.95
Adj. Flow (vph)	0	1516	554	569	1088	0	0	0	0	400	0	681
RTOR Reduction (vph)	0	0	189	0	0	0	0	0	0	0	0	259
Lane Group Flow (vph)	0	1516	365	569	1088	0	0	0	0	400	0	422
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type		NA	Perm	Prot	NA					Perm		Perm
Protected Phases		6		5	2							
Permitted Phases			6							8		8
Actuated Green, G (s)		71.9	71.9	28.1	107.0					17.5		17.5
Effective Green, g (s)		71.9	71.9	28.1	107.0					17.5		17.5
Actuated g/C Ratio		0.51	0.51	0.20	0.76					0.12		0.12
Clearance Time (s)		8.0	8.0	7.0	8.0					7.5		7.5
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0		3.0
Lane Grp Cap (vph)		3951	829	702	3964					636		355
v/s Ratio Prot		0.20		c0.16	0.21							
v/s Ratio Perm			c0.23							0.08		c0.15
v/c Ratio		0.38	0.44	0.81	0.27					0.63		1.19
Uniform Delay, d1		20.6	21.4	53.4	4.9					58.2		61.2
Progression Factor		1.00	1.00	1.00	1.00					1.00		1.00
Incremental Delay, d2		0.3	1.7	7.1	0.2					2.0		109.7
Delay (s)		20.9	23.1	60.5	5.1					60.1		170.9
Level of Service		C	C	E	A					E		F
Approach Delay (s)		21.5			24.1			0.0			129.9	
Approach LOS		C			C			A			F	

Intersection Summary			
HCM 2000 Control Delay	46.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	68.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	1	0	1	11	0	182	2	1381	1	43	313	2
Future Volume (Veh/h)	1	0	1	11	0	182	2	1381	1	43	313	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.25	0.25	0.50	0.25	0.82	0.50	0.86	0.25	0.68	0.90	0.50
Hourly flow rate (vph)	4	0	4	22	0	222	4	1606	4	63	348	4
Pedestrians								3				
Lane Width (ft)								12.0				
Walking Speed (ft/s)								3.5				
Percent Blockage								0				
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)											1045	
pX, platoon unblocked												
vC, conflicting volume	1507	2092	177	1923	2094	805	352			1610		
vC1, stage 1 conf vol	474	474		1616	1616							
vC2, stage 2 conf vol	1033	1618		307	478							
vCu, unblocked vol	1507	2092	177	1923	2094	805	352			1610		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)	6.5	5.5		6.5	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	83	100	100	79	100	32	100			85		
cM capacity (veh/h)	24	97	839	106	153	328	1218			411		

Direction, Lane #	EB 1	WB 1	NE 1	NE 2	NE 3	SW 1	SW 2	SW 3	SW 4
Volume Total	8	244	4	1071	539	63	174	174	4
Volume Left	4	22	4	0	0	63	0	0	0
Volume Right	4	222	0	0	4	0	0	0	4
cSH	47	276	1218	1700	1700	411	1700	1700	1700
Volume to Capacity	0.17	0.89	0.00	0.63	0.32	0.15	0.10	0.10	0.00
Queue Length 95th (ft)	14	195	0	0	0	13	0	0	0
Control Delay (s)	97.2	68.8	8.0	0.0	0.0	15.3	0.0	0.0	0.0
Lane LOS	F	F	A			C			
Approach Delay (s)	97.2	68.8	0.0			2.3			
Approach LOS	F	F							

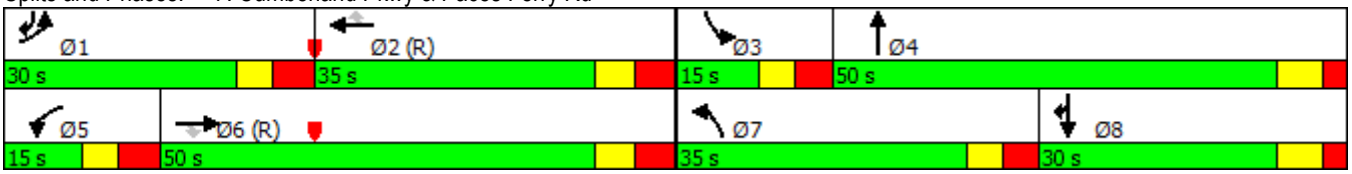
Intersection Summary				
Average Delay	8.1			
Intersection Capacity Utilization	56.8%	ICU Level of Service		B
Analysis Period (min)	15			

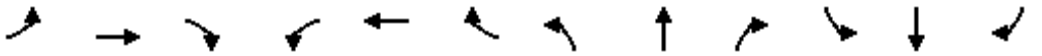
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	578	819	378	138	409	91	453	989	75	196	176
Future Volume (vph)	578	819	378	138	409	91	453	989	75	196	176
Lane Group Flow (vph)	642	910	430	148	454	110	581	1626	81	235	176
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA	pt+ov
Protected Phases	1	6		5	2		7	4	3	8	8 1
Permitted Phases			6			2					
Detector Phase	1	6	6	5	2	2	7	4	3	8	8 1
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)	12.5	26.0	26.0	12.5	26.0	26.0	12.0	25.0	12.0	25.0	
Total Split (s)	30.0	50.0	50.0	15.0	35.0	35.0	35.0	50.0	15.0	30.0	
Total Split (%)	23.1%	38.5%	38.5%	11.5%	26.9%	26.9%	26.9%	38.5%	11.5%	23.1%	
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0	4.0	3.5	4.5	3.5	4.5	
All-Red Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.5	2.5	3.5	2.5	
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)	7.5	8.0	8.0	7.5	8.0	8.0	7.0	7.0	7.0	7.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	None	Max	
v/c Ratio	0.78	0.78	0.36	0.76	0.40	0.20	0.85	0.96	0.74	0.38	0.14
Control Delay	59.8	45.4	3.7	83.8	45.0	0.8	62.4	54.6	95.9	46.9	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.8	45.4	3.7	83.8	45.0	0.8	62.4	54.6	95.9	46.9	5.0
Queue Length 50th (ft)	183	364	0	64	122	0	242	472	68	99	4
Queue Length 95th (ft)	228	446	35	#117	159	0	256	487	#153	147	30
Internal Link Dist (ft)		610			246			250		395	
Turn Bay Length (ft)	455		425	400		100			215		300
Base Capacity (vph)	880	1166	1200	196	1129	564	754	1697	111	625	1276
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.78	0.36	0.76	0.40	0.20	0.77	0.96	0.73	0.38	0.14

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 115 (88%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Cumberland Pkwy & Paces Ferry Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	578	819	378	138	409	91	453	989	332	75	196	176
Future Volume (vph)	578	819	378	138	409	91	453	989	332	75	196	176
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.5	8.0	8.0	7.5	8.0	8.0	7.0	7.0		7.0	7.0	7.0
Lane Util. Factor	0.94	0.95	0.88	0.97	0.91	1.00	0.97	0.91		1.00	0.86	0.86
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	0.99	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	5090	3610	2814	3400	5136	1583	3502	4958		1805	3168	2778
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	5090	3610	2814	3400	5136	1583	3502	4958		1805	3168	2778
Peak-hour factor, PHF	0.90	0.90	0.88	0.93	0.90	0.83	0.78	0.84	0.74	0.93	0.91	0.90
Adj. Flow (vph)	642	910	430	148	454	110	581	1177	449	81	215	196
RTOR Reduction (vph)	0	0	291	0	0	86	0	53	0	0	5	94
Lane Group Flow (vph)	642	910	139	148	454	24	581	1573	0	81	230	82
Heavy Vehicles (%)	0%	0%	1%	3%	1%	2%	0%	0%	1%	0%	2%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	pt+ov
Protected Phases	1	6		5	2		7	4		3	8	8 1
Permitted Phases			6			2						
Actuated Green, G (s)	20.9	42.0	42.0	7.5	28.6	28.6	25.5	43.1		7.9	25.5	53.4
Effective Green, g (s)	20.9	42.0	42.0	7.5	28.6	28.6	25.5	43.1		7.9	25.5	53.4
Actuated g/C Ratio	0.16	0.32	0.32	0.06	0.22	0.22	0.20	0.33		0.06	0.20	0.41
Clearance Time (s)	7.5	8.0	8.0	7.5	8.0	8.0	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	818	1166	909	196	1129	348	686	1643		109	621	1141
v/s Ratio Prot	c0.13	c0.25		0.04	0.09		c0.17	c0.32		0.04	0.07	0.03
v/s Ratio Perm			0.05			0.02						
v/c Ratio	0.78	0.78	0.15	0.76	0.40	0.07	0.85	0.96		0.74	0.37	0.07
Uniform Delay, d1	52.4	39.8	31.3	60.3	43.4	40.2	50.4	42.6		60.1	45.3	23.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	5.0	5.2	0.4	15.2	1.1	0.4	9.5	14.2		23.6	1.7	0.0
Delay (s)	57.4	45.0	31.7	75.5	44.5	40.5	59.9	56.7		83.7	47.0	23.3
Level of Service	E	D	C	E	D	D	E	E		F	D	C
Approach Delay (s)		46.1			50.3			57.6			44.6	
Approach LOS		D			D			E			D	

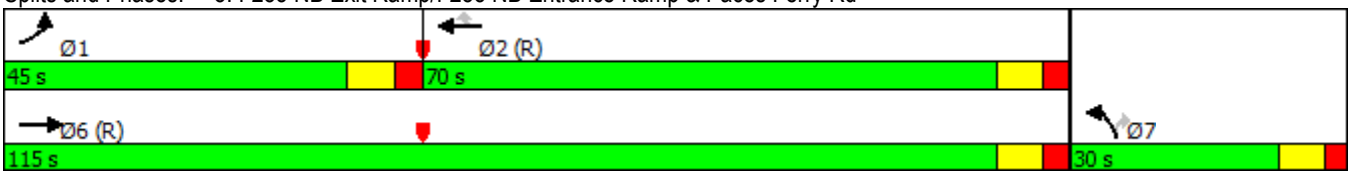
Intersection Summary			
HCM 2000 Control Delay	51.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	29.5
Intersection Capacity Utilization	82.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

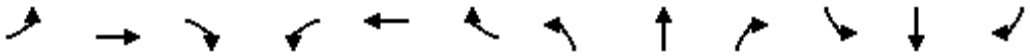
Lane Group	EBL	EBT	WBT	WBR	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	673	1603	630	400	250	265
Future Volume (vph)	673	1603	630	400	250	265
Lane Group Flow (vph)	716	1742	733	519	313	305
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	1	6	2		7	
Permitted Phases				2		7
Detector Phase	1	6	2	2	7	7
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	13.0	26.0	26.0	26.0	12.5	12.5
Total Split (s)	45.0	115.0	70.0	70.0	30.0	30.0
Total Split (%)	31.0%	79.3%	48.3%	48.3%	20.7%	20.7%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	3.0	3.0	3.0	3.0	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	8.0	8.0	8.0	8.0	7.5	7.5
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	None	None
v/c Ratio	0.88	0.44	0.20	0.32	0.72	0.69
Control Delay	65.9	6.5	22.8	2.5	70.4	49.2
Queue Delay	0.0	0.3	0.0	0.0	0.0	0.0
Total Delay	65.9	6.8	22.8	2.5	70.4	49.2
Queue Length 50th (ft)	336	185	98	0	148	107
Queue Length 95th (ft)	404	239	121	7	170	152
Internal Link Dist (ft)		660	610			
Turn Bay Length (ft)	520			320		
Base Capacity (vph)	898	3980	3682	1630	537	519
Starvation Cap Reductn	0	1291	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.65	0.20	0.32	0.58	0.59

Intersection Summary

Cycle Length: 145
Actuated Cycle Length: 145
Offset: 110 (76%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 8: I-285 NB Exit Ramp/I-285 NB Entrance Ramp & Paces Ferry Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	673	1603	0	0	630	400	250	0	265	0	0	0
Future Volume (vph)	673	1603	0	0	630	400	250	0	265	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0			8.0	8.0	7.5		7.5			
Lane Util. Factor	0.97	0.91			0.81	0.88	0.97		0.88			
Frt	1.00	1.00			1.00	0.85	1.00		0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)	3502	5187			7695	2842	3467		2814			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	3502	5187			7695	2842	3467		2814			
Peak-hour factor, PHF	0.94	0.92	0.25	0.25	0.86	0.77	0.80	0.25	0.87	0.25	0.25	0.25
Adj. Flow (vph)	716	1742	0	0	733	519	312	0	305	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	271	0	0	86	0	0	0
Lane Group Flow (vph)	716	1742	0	0	733	248	313	0	219	0	0	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	0%	1%	0%	0%	0%
Turn Type	Prot	NA			NA	Perm	Prot		Perm			
Protected Phases	1	6			2		7					
Permitted Phases						2			7			
Actuated Green, G (s)	33.9	111.3			69.4	69.4	18.2		18.2			
Effective Green, g (s)	33.9	111.3			69.4	69.4	18.2		18.2			
Actuated g/C Ratio	0.23	0.77			0.48	0.48	0.13		0.13			
Clearance Time (s)	8.0	8.0			8.0	8.0	7.5		7.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0		3.0			
Lane Grp Cap (vph)	818	3981			3682	1360	435		353			
v/s Ratio Prot	c0.20	c0.34			0.10		c0.09					
v/s Ratio Perm						0.09			0.08			
v/c Ratio	0.88	0.44			0.20	0.18	0.72		0.62			
Uniform Delay, d1	53.5	5.9			21.8	21.6	60.9		60.1			
Progression Factor	1.00	1.00			1.00	1.00	1.00		1.00			
Incremental Delay, d2	10.3	0.4			0.1	0.3	5.6		3.4			
Delay (s)	63.8	6.2			21.9	21.9	66.6		63.5			
Level of Service	E	A			C	C	E		E			
Approach Delay (s)		23.0			21.9			65.1			0.0	
Approach LOS		C			C			E			A	

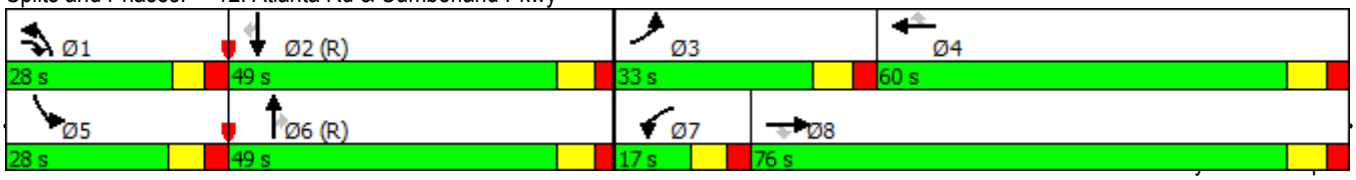
Intersection Summary			
HCM 2000 Control Delay	28.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	23.5
Intersection Capacity Utilization	71.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

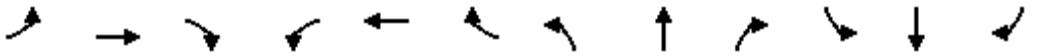
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	565	1247	1230	142	205	126	502	447	63	143	684	173
Future Volume (vph)	565	1247	1230	142	205	126	502	447	63	143	684	173
Lane Group Flow (vph)	673	1450	1268	182	241	166	570	552	88	196	705	199
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	8	1	7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Detector Phase	3	8	1	7	4	4	1	6	6	5	2	2
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)	13.0	26.0	12.5	12.5	26.0	26.0	12.5	26.0	26.0	13.0	26.0	26.0
Total Split (s)	33.0	76.0	28.0	17.0	60.0	60.0	28.0	49.0	49.0	28.0	49.0	49.0
Total Split (%)	19.4%	44.7%	16.5%	10.0%	35.3%	35.3%	16.5%	28.8%	28.8%	16.5%	28.8%	28.8%
Yellow Time (s)	5.0	5.0	4.0	4.5	5.0	5.0	4.0	5.0	5.0	4.5	5.0	5.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.5	2.5	3.0	2.5	2.5
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)	8.0	8.0	7.0	7.5	8.0	8.0	7.0	7.5	7.5	7.5	7.5	7.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
v/c Ratio	1.34	1.00	0.77	0.93	0.22	0.27	0.92	0.63	0.17	0.92	0.81	0.38
Control Delay	215.9	74.7	30.2	126.8	44.5	5.5	93.5	60.9	0.7	116.7	68.9	11.1
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	215.9	74.7	30.2	126.8	44.5	5.5	93.5	60.9	0.7	116.7	68.9	11.1
Queue Length 50th (ft)	~500	~856	570	106	105	0	226	292	0	219	393	16
Queue Length 95th (ft)	#567	#938	676	#147	136	20	#286	316	0	#253	473	79
Internal Link Dist (ft)		536			1195			492			397	
Turn Bay Length (ft)	265		300	290		260	325		140	360		170
Base Capacity (vph)	504	1444	1638	195	1104	616	622	880	529	217	872	522
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.34	1.00	0.77	0.93	0.22	0.27	0.92	0.63	0.17	0.90	0.81	0.38

Intersection Summary

Cycle Length: 170
Actuated Cycle Length: 170
Offset: 91 (54%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 130
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 12: Atlanta Rd & Cumberland Pkwy





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	565	1247	1230	142	205	126	502	447	63	143	684	173
Future Volume (vph)	565	1247	1230	142	205	126	502	447	63	143	684	173
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0	7.0	7.5	8.0	8.0	7.0	7.5	7.5	7.5	7.5	7.5
Lane Util. Factor	0.97	0.95	0.88	0.97	0.95	1.00	0.94	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3610	2814	3502	3610	1615	5040	3574	1599	1805	3574	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3610	2814	3502	3610	1615	5040	3574	1599	1805	3574	1583
Peak-hour factor, PHF	0.84	0.86	0.97	0.78	0.85	0.76	0.88	0.81	0.72	0.73	0.97	0.87
Adj. Flow (vph)	673	1450	1268	182	241	166	570	552	88	196	705	199
RTOR Reduction (vph)	0	0	37	0	0	115	0	0	66	0	0	136
Lane Group Flow (vph)	673	1450	1231	182	241	51	570	552	22	196	705	63
Heavy Vehicles (%)	2%	0%	1%	0%	0%	0%	1%	1%	1%	0%	1%	2%
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	8	1	7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	25.0	68.0	89.0	9.5	52.0	52.0	21.0	41.9	41.9	20.1	41.5	41.5
Effective Green, g (s)	25.0	68.0	89.0	9.5	52.0	52.0	21.0	41.9	41.9	20.1	41.5	41.5
Actuated g/C Ratio	0.15	0.40	0.52	0.06	0.31	0.31	0.12	0.25	0.25	0.12	0.24	0.24
Clearance Time (s)	8.0	8.0	7.0	7.5	8.0	8.0	7.0	7.5	7.5	7.5	7.5	7.5
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
Lane Grp Cap (vph)	504	1444	1473	195	1104	494	622	880	394	213	872	386
v/s Ratio Prot	c0.20	c0.40	0.10	0.05	0.07		c0.11	0.15		0.11	c0.20	
v/s Ratio Perm			0.33			0.03			0.01			0.04
v/c Ratio	1.34	1.00	0.84	0.93	0.22	0.10	0.92	0.63	0.06	0.92	0.81	0.16
Uniform Delay, d1	72.5	51.0	34.3	79.9	43.9	42.3	73.6	57.1	48.9	74.2	60.5	50.6
Progression 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
Incremental Delay, d2	164.0	24.7	4.3	45.6	0.1	0.1	18.3	3.4	0.3	40.1	8.0	0.9
Delay (s)	236.5	75.7	38.6	125.5	44.0	42.4	91.9	60.5	49.2	114.3	68.5	51.5
Level of Service	F	E	D	F	D	D	F	E	D	F	E	D
Approach Delay (s)		93.7			68.7			74.5			73.6	
Approach LOS		F			E			E			E	

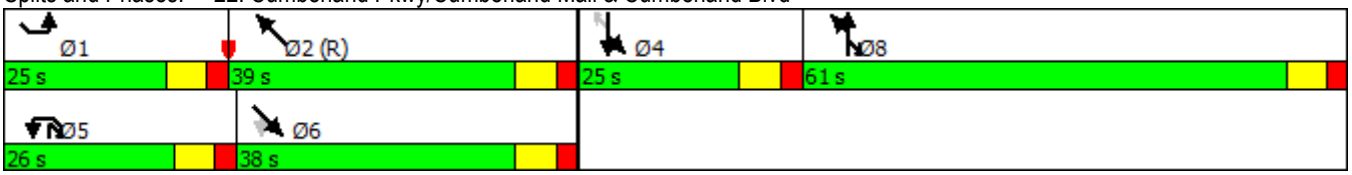
Intersection Summary			
HCM 2000 Control Delay	84.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	31.0
Intersection Capacity Utilization	92.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT
Lane Configurations											
Traffic Volume (vph)	339	93	1303	2	25	13	50	497	285	277	95
Future Volume (vph)	339	93	1303	2	25	13	50	497	285	277	95
Lane Group Flow (vph)	242	248	1498	4	44	19	70	552	324	315	125
Turn Type	Split	NA	pt+ov	Split	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	8	8	8 5	4	4		1	6		5	2
Permitted Phases						4			6		
Detector Phase	8	8	8 5	4	4	4	1	6	6	5	2
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)	25.0	25.0		25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Total Split (s)	61.0	61.0		25.0	25.0	25.0	25.0	38.0	38.0	26.0	39.0
Total Split (%)	40.7%	40.7%		16.7%	16.7%	16.7%	16.7%	25.3%	25.3%	17.3%	26.0%
Yellow Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.5	2.5		2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
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)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	Max	Max	Max	Max	C-Max
v/c Ratio	0.39	0.40	0.74	0.05	0.27	0.10	0.19	0.74	0.55	0.42	0.17
Control Delay	36.3	36.3	12.4	68.0	72.3	1.0	58.0	62.6	8.6	57.1	46.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.3	36.3	12.4	68.0	72.3	1.0	58.0	62.6	8.6	57.1	46.9
Queue Length 50th (ft)	170	174	316	4	22	0	62	268	0	151	51
Queue Length 95th (ft)	242	189	385	9	27	0	90	337	76	203	73
Internal Link Dist (ft)		1280			195			880			560
Turn Bay Length (ft)	255		245				220		320	440	
Base Capacity (vph)	676	692	2026	216	401	288	378	746	590	758	751
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.36	0.74	0.02	0.11	0.07	0.19	0.74	0.55	0.42	0.17

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 17 (11%), Referenced to phase 2:NWT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 22: Cumberland Pkwy/Cumberland Mall & Cumberland Blvd



Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	339	93	1303	2	25	13	50	497	285	277	95	7
Future Volume (vph)	339	93	1303	2	25	13	50	497	285	277	95	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Lane Util. Factor	0.95	0.95	0.88	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1715	1754	2842	1805	3343	1442	1805	3610	1615	3502	3506	
Flt Permitted	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1715	1754	2842	1805	3343	1442	1805	3610	1615	3502	3506	
Peak-hour factor, PHF	0.94	0.72	0.87	0.50	0.57	0.69	0.71	0.90	0.88	0.88	0.82	0.75
Adj. Flow (vph)	361	129	1498	4	44	19	70	552	324	315	116	9
RTOR Reduction (vph)	0	0	268	0	0	18	0	0	260	0	4	0
Lane Group Flow (vph)	242	248	1230	4	44	1	70	552	64	315	121	0
Heavy Vehicles (%)	0%	1%	0%	0%	8%	12%	0%	0%	0%	0%	2%	0%
Turn Type	Split	NA	pt+ov	Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	8	8	8 5	4	4		1	6		5	2	
Permitted Phases						4			6			
Actuated Green, G (s)	53.7	53.7	93.2	6.3	6.3	6.3	31.5	29.5	29.5	32.5	30.5	
Effective Green, g (s)	53.7	53.7	93.2	6.3	6.3	6.3	31.5	29.5	29.5	32.5	30.5	
Actuated g/C Ratio	0.36	0.36	0.62	0.04	0.04	0.04	0.21	0.20	0.20	0.22	0.20	
Clearance Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	613	627	1765	75	140	60	379	709	317	758	712	
v/s Ratio Prot	0.14	0.14	c0.43	0.00	c0.01		0.04	c0.15		0.09	0.03	
v/s Ratio Perm						0.00			0.04			
v/c Ratio	0.39	0.40	0.70	0.05	0.31	0.01	0.18	0.78	0.20	0.42	0.17	
Uniform Delay, d1	36.0	36.0	19.0	69.0	69.8	68.9	48.7	57.2	50.4	50.6	49.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.4	0.4	1.2	0.3	1.3	0.1	1.1	8.2	1.4	1.7	0.5	
Delay (s)	36.4	36.4	20.2	69.3	71.0	69.0	49.8	65.4	51.8	52.3	49.8	
Level of Service	D	D	C	E	E	E	D	E	D	D	D	
Approach Delay (s)		24.2			70.3			59.6			51.6	
Approach LOS		C			E			E			D	

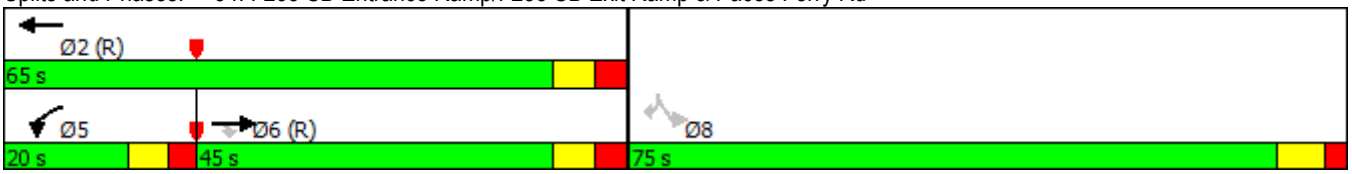
Intersection Summary			
HCM 2000 Control Delay	38.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	28.0
Intersection Capacity Utilization	81.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

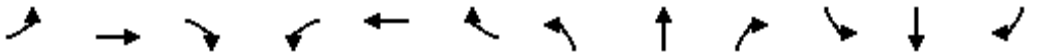
Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1619	378	232	642	678	1315
Future Volume (vph)	1619	378	232	642	678	1315
Lane Group Flow (vph)	1861	434	258	705	721	1445
Turn Type	NA	Perm	Prot	NA	Perm	Perm
Protected Phases	6		5	2		
Permitted Phases		6			8	8
Detector Phase	6	6	5	2	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	26.0	26.0	12.0	26.0	20.0	20.0
Total Split (s)	45.0	45.0	20.0	65.0	75.0	75.0
Total Split (%)	32.1%	32.1%	14.3%	46.4%	53.6%	53.6%
Yellow Time (s)	4.5	4.5	4.0	4.5	5.0	5.0
All-Red Time (s)	3.5	3.5	3.0	3.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	8.0	8.0	7.0	8.0	7.5	7.5
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	None	C-Max	None	None
v/c Ratio	0.91	0.61	0.82	0.33	0.29	0.98
Control Delay	57.4	9.8	83.6	29.0	22.3	50.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.4	9.8	83.6	29.0	22.3	50.7
Queue Length 50th (ft)	408	26	120	160	137	659
Queue Length 95th (ft)	429	110	#188	194	167	#859
Internal Link Dist (ft)	560			660		
Turn Bay Length (ft)		275				
Base Capacity (vph)	2044	715	318	2111	2454	1470
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.61	0.81	0.33	0.29	0.98

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 48 (34%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 34: I-285 SB Entrance Ramp/I-285 SB Exit Ramp & Paces Ferry Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1619	378	232	642	0	0	0	0	678	0	1315
Future Volume (vph)	0	1619	378	232	642	0	0	0	0	678	0	1315
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.0	8.0	7.0	8.0					7.5		7.5
Lane Util. Factor		0.81	1.00	0.97	0.91					0.94		0.88
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		7695	1599	3433	5187					5090		2842
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		7695	1599	3433	5187					5090		2842
Peak-hour factor, PHF	0.25	0.87	0.87	0.90	0.91	0.25	0.25	0.25	0.25	0.94	0.25	0.91
Adj. Flow (vph)	0	1861	434	258	705	0	0	0	0	721	0	1445
RTOR Reduction (vph)	0	0	291	0	0	0	0	0	0	0	0	100
Lane Group Flow (vph)	0	1861	143	258	705	0	0	0	0	721	0	1345
Heavy Vehicles (%)	0%	0%	1%	2%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type		NA	Perm	Prot	NA					Perm		Perm
Protected Phases		6		5	2							
Permitted Phases			6							8		8
Actuated Green, G (s)		37.2	37.2	12.8	57.0					67.5		67.5
Effective Green, g (s)		37.2	37.2	12.8	57.0					67.5		67.5
Actuated g/C Ratio		0.27	0.27	0.09	0.41					0.48		0.48
Clearance Time (s)		8.0	8.0	7.0	8.0					7.5		7.5
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0		3.0
Lane Grp Cap (vph)		2044	424	313	2111					2454		1370
v/s Ratio Prot		c0.24		c0.08	0.14							
v/s Ratio Perm			0.09							0.14		c0.47
v/c Ratio		0.91	0.34	0.82	0.33					0.29		0.98
Uniform Delay, d1		49.8	41.5	62.5	28.5					21.9		35.6
Progression Factor		1.00	1.00	1.00	1.00					1.00		1.00
Incremental Delay, d2		7.5	2.1	16.0	0.4					0.1		19.9
Delay (s)		57.3	43.6	78.5	28.9					21.9		55.5
Level of Service		E	D	E	C					C		E
Approach Delay (s)		54.7			42.2			0.0			44.3	
Approach LOS		D			D			A			D	

Intersection Summary			
HCM 2000 Control Delay	48.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	71.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	2	0	5	16	0	58	0	657	7	178	1602	5
Future Volume (Veh/h)	2	0	5	16	0	58	0	657	7	178	1602	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.50	0.25	0.31	0.47	0.25	0.76	0.25	0.93	0.44	0.78	0.97	0.62
Hourly flow rate (vph)	4	0	16	34	0	76	0	706	16	228	1652	8
Pedestrians								3			3	
Lane Width (ft)								12.0			12.0	
Walking Speed (ft/s)								3.5			3.5	
Percent Blockage								0			0	
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)											1045	
pX, platoon unblocked	0.48	0.48	0.48	0.48	0.48		0.48					
vC, conflicting volume	2540	2830	829	2015	2830	364	1660			722		
vC1, stage 1 conf vol	2108	2108		714	714							
vC2, stage 2 conf vol	432	722		1301	2116							
vCu, unblocked vol	2037	2644	0	939	2644	364	196			722		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)	6.5	5.5		6.5	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	95	100	97	87	100	88	100			74		
cM capacity (veh/h)	73	86	520	268	92	637	664			889		

Direction, Lane #	EB 1	WB 1	NE 1	NE 2	NE 3	SW 1	SW 2	SW 3	SW 4
Volume Total	20	110	0	471	251	228	826	826	8
Volume Left	4	34	0	0	0	228	0	0	0
Volume Right	16	76	0	0	16	0	0	0	8
cSH	234	447	1700	1700	1700	889	1700	1700	1700
Volume to Capacity	0.09	0.25	0.00	0.28	0.15	0.26	0.49	0.49	0.00
Queue Length 95th (ft)	7	24	0	0	0	26	0	0	0
Control Delay (s)	21.8	15.7	0.0	0.0	0.0	10.4	0.0	0.0	0.0
Lane LOS	C	C				B			
Approach Delay (s)	21.8	15.7	0.0			1.3			
Approach LOS	C	C							

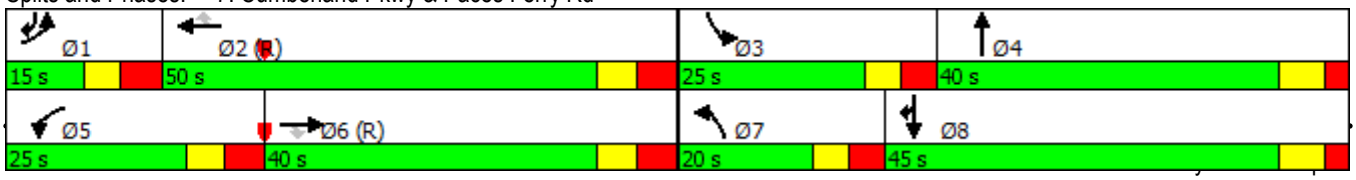
Intersection Summary				
Average Delay	1.7			
Intersection Capacity Utilization	63.1%	ICU Level of Service		B
Analysis Period (min)	15			

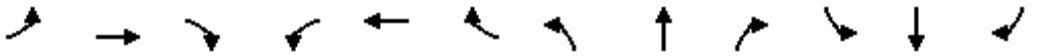
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	224	493	549	475	956	92	333	406	110	845	414
Future Volume (vph)	224	493	549	475	956	92	333	406	110	845	414
Lane Group Flow (vph)	264	519	638	516	1166	110	411	693	126	1017	510
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA	pt+ov
Protected Phases	1	6		5	2		7	4	3	8	8 1
Permitted Phases			6			2					
Detector Phase	1	6	6	5	2	2	7	4	3	8	8 1
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)	12.5	26.0	26.0	12.5	26.0	26.0	12.0	25.0	12.0	25.0	
Total Split (s)	15.0	40.0	40.0	25.0	50.0	50.0	20.0	40.0	25.0	45.0	
Total Split (%)	11.5%	30.8%	30.8%	19.2%	38.5%	38.5%	15.4%	30.8%	19.2%	34.6%	
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0	4.0	3.5	4.5	3.5	4.5	
All-Red Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.5	2.5	3.5	2.5	
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)	7.5	8.0	8.0	7.5	8.0	8.0	7.0	7.0	7.0	7.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	None	Max	
v/c Ratio	0.91	0.58	0.61	1.10	0.70	0.18	1.17	0.47	0.65	1.07	0.41
Control Delay	94.8	46.3	14.3	121.4	41.1	2.0	154.3	34.7	70.8	93.6	19.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	94.8	46.3	14.3	121.4	41.1	2.0	154.3	34.7	70.8	93.6	19.1
Queue Length 50th (ft)	79	203	69	~253	313	0	~212	153	103	~551	116
Queue Length 95th (ft)	#123	263	121	#366	325	8	#270	196	160	#676	118
Internal Link Dist (ft)		610			246			250		395	
Turn Bay Length (ft)	455		425	400		100			215		300
Base Capacity (vph)	290	888	1039	471	1675	626	350	1469	249	950	1229
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.58	0.61	1.10	0.70	0.18	1.17	0.47	0.51	1.07	0.41

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 13 (10%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Cumberland Pkwy & Paces Ferry Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	224	493	549	475	956	92	333	406	183	110	845	414
Future Volume (vph)	224	493	549	475	956	92	333	406	183	110	845	414
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.5	8.0	8.0	7.5	8.0	8.0	7.0	7.0		7.0	7.0	7.0
Lane Util. Factor	0.94	0.95	0.88	0.97	0.91	1.00	0.97	0.91		1.00	0.86	0.86
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95		1.00	0.99	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	5040	3610	2814	3502	5187	1615	3502	4927		1805	3241	2778
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	5040	3610	2814	3502	5187	1615	3502	4927		1805	3241	2778
Peak-hour factor, PHF	0.85	0.95	0.86	0.92	0.82	0.84	0.81	0.88	0.79	0.87	0.88	0.73
Adj. Flow (vph)	264	519	638	516	1166	110	411	461	232	126	960	567
RTOR Reduction (vph)	0	0	347	0	0	74	0	67	0	0	3	98
Lane Group Flow (vph)	264	519	291	516	1166	36	411	626	0	126	1014	412
Heavy Vehicles (%)	1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	pt+ov
Protected Phases	1	6		5	2		7	4		3	8	8 1
Permitted Phases			6			2						
Actuated Green, G (s)	7.5	32.0	32.0	17.5	42.0	42.0	13.0	37.0		14.0	38.0	52.5
Effective Green, g (s)	7.5	32.0	32.0	17.5	42.0	42.0	13.0	37.0		14.0	38.0	52.5
Actuated g/C Ratio	0.06	0.25	0.25	0.13	0.32	0.32	0.10	0.28		0.11	0.29	0.40
Clearance Time (s)	7.5	8.0	8.0	7.5	8.0	8.0	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	290	888	692	471	1675	521	350	1402		194	947	1121
v/s Ratio Prot	0.05	0.14		c0.15	c0.22		c0.12	0.13		0.07	c0.31	0.15
v/s Ratio Perm			0.10			0.02						
v/c Ratio	0.91	0.58	0.42	1.10	0.70	0.07	1.17	0.45		0.65	1.07	0.37
Uniform Delay, d1	60.9	43.1	41.2	56.2	38.4	30.5	58.5	38.1		55.6	46.0	27.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	30.7	2.8	1.9	69.9	2.4	0.3	104.4	1.0		7.3	50.2	0.2
Delay (s)	91.6	46.0	43.1	126.2	40.8	30.7	162.9	39.1		62.9	96.2	27.3
Level of Service	F	D	D	F	D	C	F	D		E	F	C
Approach Delay (s)		53.1			64.8			85.2			72.4	
Approach LOS		D			E			F			E	

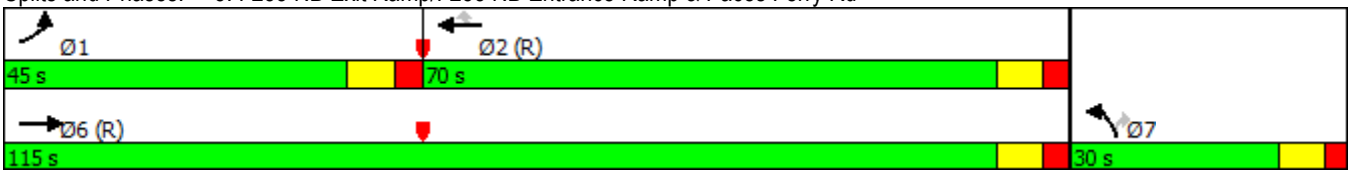
Intersection Summary			
HCM 2000 Control Delay	67.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	29.5
Intersection Capacity Utilization	87.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

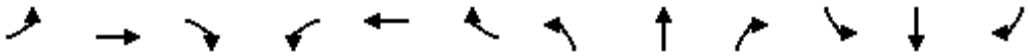
Lane Group	EBL	EBT	WBT	WBR	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	830	937	1022	605	260	280
Future Volume (vph)	830	937	1022	605	260	280
Lane Group Flow (vph)	976	1018	1188	720	329	359
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	1	6	2		7	
Permitted Phases				2		7
Detector Phase	1	6	2	2	7	7
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	13.0	26.0	26.0	26.0	12.5	12.5
Total Split (s)	45.0	115.0	70.0	70.0	30.0	30.0
Total Split (%)	31.0%	79.3%	48.3%	48.3%	20.7%	20.7%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	3.0	3.0	3.0	3.0	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	8.0	8.0	8.0	8.0	7.5	7.5
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	None	None
v/c Ratio	0.99	0.26	0.36	0.44	0.73	0.56
Control Delay	78.5	5.4	28.5	2.6	70.0	13.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.5	5.4	28.5	2.6	70.0	13.0
Queue Length 50th (ft)	475	91	185	0	156	21
Queue Length 95th (ft)	#606	120	200	21	176	41
Internal Link Dist (ft)		660	610			
Turn Bay Length (ft)	520			320		
Base Capacity (vph)	983	3960	3290	1627	543	701
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.99	0.26	0.36	0.44	0.61	0.51

Intersection Summary

Cycle Length: 145
Actuated Cycle Length: 145
Offset: 23 (16%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 8: I-285 NB Exit Ramp/I-285 NB Entrance Ramp & Paces Ferry Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	830	937	0	0	1022	605	260	0	280	0	0	0
Future Volume (vph)	830	937	0	0	1022	605	260	0	280	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0			8.0	8.0	7.5		7.5			
Lane Util. Factor	0.97	0.91			0.81	0.88	0.97		0.88			
Frt	1.00	1.00			1.00	0.85	1.00		0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)	3502	5187			7695	2842	3502		2814			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	3502	5187			7695	2842	3502		2814			
Peak-hour factor, PHF	0.85	0.92	0.25	0.25	0.86	0.84	0.79	0.25	0.78	0.25	0.25	0.25
Adj. Flow (vph)	976	1018	0	0	1188	720	329	0	359	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	412	0	0	273	0	0	0
Lane Group Flow (vph)	976	1018	0	0	1188	308	329	0	86	0	0	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%
Turn Type	Prot	NA			NA	Perm	Prot		Perm			
Protected Phases	1	6			2		7					
Permitted Phases						2			7			
Actuated Green, G (s)	40.7	110.7			62.0	62.0	18.8		18.8			
Effective Green, g (s)	40.7	110.7			62.0	62.0	18.8		18.8			
Actuated g/C Ratio	0.28	0.76			0.43	0.43	0.13		0.13			
Clearance Time (s)	8.0	8.0			8.0	8.0	7.5		7.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0		3.0			
Lane Grp Cap (vph)	982	3960			3290	1215	454		364			
v/s Ratio Prot	c0.28	0.20			c0.15		c0.09					
v/s Ratio Perm						0.11			0.03			
v/c Ratio	0.99	0.26			0.36	0.25	0.72		0.24			
Uniform Delay, d1	52.0	5.0			28.1	26.6	60.6		56.6			
Progression Factor	1.00	1.00			1.00	1.00	1.00		1.00			
Incremental Delay, d2	27.1	0.2			0.3	0.5	5.7		0.3			
Delay (s)	79.1	5.2			28.4	27.1	66.3		57.0			
Level of Service	E	A			C	C	E		E			
Approach Delay (s)		41.4			27.9			61.4			0.0	
Approach LOS		D			C			E			A	

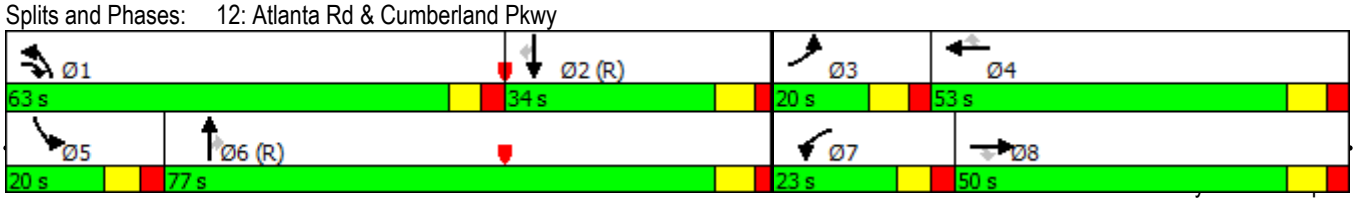
Intersection Summary			
HCM 2000 Control Delay	38.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	23.5
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

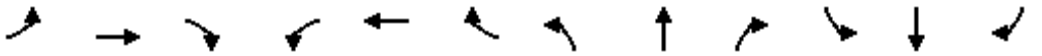
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	218	373	497	260	1053	125	1120	959	91	77	676	318
Future Volume (vph)	218	373	497	260	1053	125	1120	959	91	77	676	318
Lane Group Flow (vph)	237	414	565	289	1132	181	1191	1009	106	93	751	361
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	8	1	7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Detector Phase	3	8	1	7	4	4	1	6	6	5	2	2
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)	13.0	26.0	12.5	12.5	26.0	26.0	12.5	26.0	26.0	13.0	26.0	26.0
Total Split (s)	20.0	50.0	63.0	23.0	53.0	53.0	63.0	77.0	77.0	20.0	34.0	34.0
Total Split (%)	11.8%	29.4%	37.1%	13.5%	31.2%	31.2%	37.1%	45.3%	45.3%	11.8%	20.0%	20.0%
Yellow Time (s)	5.0	5.0	4.0	4.5	5.0	5.0	4.0	5.0	5.0	4.5	5.0	5.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.5	2.5	3.0	2.5	2.5
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)	8.0	8.0	7.0	7.5	8.0	8.0	7.0	7.5	7.5	7.5	7.5	7.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
v/c Ratio	0.98	0.46	0.34	0.91	1.19	0.33	0.82	0.68	0.14	0.74	1.07	0.80
Control Delay	129.4	56.5	15.7	106.7	146.4	8.8	61.2	43.9	2.4	109.7	115.9	47.0
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	129.4	56.5	15.7	106.7	146.4	8.8	61.2	43.9	2.4	109.7	115.9	47.0
Queue Length 50th (ft)	138	208	152	167	~794	7	440	485	0	103	~489	209
Queue Length 95th (ft)	#235	265	169	#257	#934	18	469	566	17	#165	#708	#394
Internal Link Dist (ft)		536			1195			492			397	
Turn Bay Length (ft)	265		300	290		260	325		140	360		170
Base Capacity (vph)	242	891	1784	319	955	554	1660	1475	737	132	701	452
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.98	0.46	0.32	0.91	1.19	0.33	0.72	0.68	0.14	0.70	1.07	0.80

Intersection Summary

Cycle Length: 170
Actuated Cycle Length: 170
Offset: 87 (51%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 12: Atlanta Rd & Cumberland Pkwy





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	218	373	497	260	1053	125	1120	959	91	77	676	318
Future Volume (vph)	218	373	497	260	1053	125	1120	959	91	77	676	318
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0	7.0	7.5	8.0	8.0	7.0	7.5	7.5	7.5	7.5	7.5
Lane Util. Factor	0.97	0.95	0.88	0.97	0.95	1.00	0.94	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3610	2814	3502	3610	1615	5040	3574	1599	1805	3574	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3610	2814	3502	3610	1615	5040	3574	1599	1805	3574	1583
Peak-hour factor, PHF	0.92	0.90	0.88	0.90	0.93	0.69	0.94	0.95	0.86	0.83	0.90	0.88
Adj. Flow (vph)	237	414	565	289	1132	181	1191	1009	106	93	751	361
RTOR Reduction (vph)	0	0	37	0	0	127	0	0	62	0	0	141
Lane Group Flow (vph)	237	414	528	289	1132	54	1191	1009	44	93	751	220
Heavy Vehicles (%)	2%	0%	1%	0%	0%	0%	1%	1%	1%	0%	1%	2%
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	8	1	7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	12.0	42.0	91.1	15.5	45.0	45.0	49.1	70.2	70.2	11.8	33.4	33.4
Effective Green, g (s)	12.0	42.0	91.1	15.5	45.0	45.0	49.1	70.2	70.2	11.8	33.4	33.4
Actuated g/C Ratio	0.07	0.25	0.54	0.09	0.26	0.26	0.29	0.41	0.41	0.07	0.20	0.20
Clearance Time (s)	8.0	8.0	7.0	7.5	8.0	8.0	7.0	7.5	7.5	7.5	7.5	7.5
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
Lane Grp Cap (vph)	242	891	1507	319	955	427	1455	1475	660	125	702	311
v/s Ratio Prot	0.07	0.11	0.10	c0.08	c0.31		c0.24	0.28		0.05	c0.21	
v/s Ratio Perm			0.09			0.03			0.03			0.14
v/c Ratio	0.98	0.46	0.35	0.91	1.19	0.13	0.82	0.68	0.07	0.74	1.07	0.71
Uniform Delay, d1	78.9	54.4	22.5	76.5	62.5	47.5	56.3	40.8	30.1	77.6	68.3	63.7
Progression 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
Incremental Delay, d2	51.4	0.4	0.1	27.6	94.1	0.1	3.7	2.6	0.2	21.1	54.2	12.7
Delay (s)	130.3	54.8	22.7	104.2	156.6	47.7	60.0	43.4	30.3	98.7	122.5	76.4
Level of Service	F	D	C	F	F	D	E	D	C	F	F	E
Approach Delay (s)		54.6			134.8			51.4			106.8	
Approach LOS		D			F			D			F	

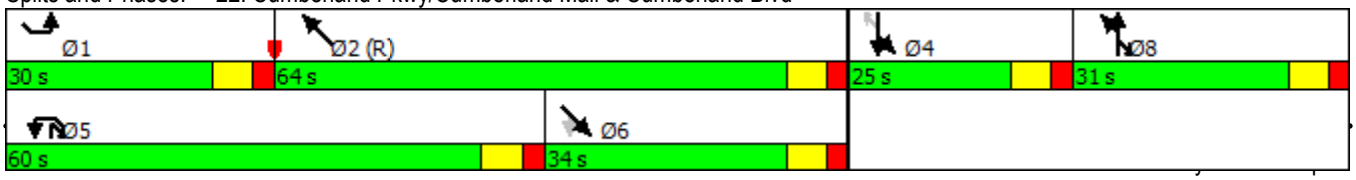
Intersection Summary			
HCM 2000 Control Delay	83.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	31.0
Intersection Capacity Utilization	100.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT
Lane Configurations											
Traffic Volume (vph)	324	128	602	31	322	147	130	193	425	1141	555
Future Volume (vph)	324	128	602	31	322	147	130	193	425	1141	555
Lane Group Flow (vph)	267	274	684	31	339	155	169	272	545	1214	685
Turn Type	Split	NA	pt+ov	Split	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	8	8	8 5	4	4		1	6		5	2
Permitted Phases						4			6		
Detector Phase	8	8	8 5	4	4	4	1	6	6	5	2
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)	25.0	25.0		25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Total Split (s)	31.0	31.0		25.0	25.0	25.0	30.0	34.0	34.0	60.0	64.0
Total Split (%)	20.7%	20.7%		16.7%	16.7%	16.7%	20.0%	22.7%	22.7%	40.0%	42.7%
Yellow Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.5	2.5		2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
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)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	Max	Max	Max	Max	C-Max
v/c Ratio	0.95	0.94	0.36	0.19	0.82	0.45	0.61	0.44	1.01	0.98	0.50
Control Delay	103.3	101.3	1.6	62.8	81.4	8.6	69.8	57.3	66.2	69.2	36.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	103.3	101.3	1.6	62.8	81.4	8.6	69.8	57.3	66.2	69.2	36.9
Queue Length 50th (ft)	277	284	0	28	172	0	157	126	~277	605	267
Queue Length 95th (ft)	#430	#393	25	63	#238	43	201	134	#349	#760	310
Internal Link Dist (ft)		1280			195			880			560
Turn Bay Length (ft)	255		245				220		320	440	
Base Capacity (vph)	281	291	1902	166	428	350	276	624	542	1237	1362
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.94	0.36	0.19	0.79	0.44	0.61	0.44	1.01	0.98	0.50

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 29 (19%), Referenced to phase 2:NWT, Start of Green
Natural Cycle: 130
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 22: Cumberland Pkwy/Cumberland Mall & Cumberland Blvd



Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	324	128	602	31	322	147	130	193	425	1141	555	19
Future Volume (vph)	324	128	602	31	322	147	130	193	425	1141	555	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Lane Util. Factor	0.95	0.95	0.88	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1715	1768	2842	1388	3574	1583	1805	3471	1615	3502	3578	
Flt Permitted	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1715	1768	2842	1388	3574	1583	1805	3471	1615	3502	3578	
Peak-hour factor, PHF	0.85	0.80	0.88	1.00	0.95	0.95	0.77	0.71	0.78	0.94	0.86	0.48
Adj. Flow (vph)	381	160	684	31	339	155	169	272	545	1214	645	40
RTOR Reduction (vph)	0	0	298	0	0	137	0	0	252	0	3	0
Lane Group Flow (vph)	267	274	386	31	339	18	169	272	293	1214	682	0
Heavy Vehicles (%)	0%	0%	0%	30%	1%	2%	0%	4%	0%	0%	0%	0%
Turn Type	Split	NA	pt+ov	Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	8	8	8 5	4	4		1	6		5	2	
Permitted Phases						4			6			
Actuated Green, G (s)	24.7	24.7	84.7	17.3	17.3	17.3	23.0	27.0	27.0	53.0	57.0	
Effective Green, g (s)	24.7	24.7	84.7	17.3	17.3	17.3	23.0	27.0	27.0	53.0	57.0	
Actuated g/C Ratio	0.16	0.16	0.56	0.12	0.12	0.12	0.15	0.18	0.18	0.35	0.38	
Clearance Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	282	291	1604	160	412	182	276	624	290	1237	1359	
v/s Ratio Prot	c0.16	0.15	0.14	0.02	c0.09		0.09	0.08		c0.35	0.19	
v/s Ratio Perm						0.01			c0.18			
v/c Ratio	0.95	0.94	0.24	0.19	0.82	0.10	0.61	0.44	1.01	0.98	0.50	
Uniform Delay, d1	62.0	61.9	16.5	60.0	64.9	59.4	59.3	54.7	61.5	48.0	35.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	39.0	37.3	0.1	0.6	12.5	0.2	9.8	2.2	55.7	21.5	1.3	
Delay (s)	101.0	99.2	16.5	60.6	77.3	59.6	69.1	56.9	117.2	69.5	36.9	
Level of Service	F	F	B	E	E	E	E	E	F	E	D	
Approach Delay (s)		53.4			71.1			92.3			57.8	
Approach LOS		D			E			F			E	

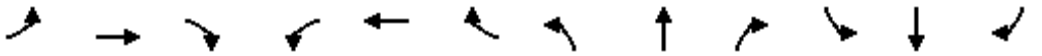
Intersection Summary			
HCM 2000 Control Delay	65.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	28.0
Intersection Capacity Utilization	85.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1366	470	482	1026	390	686
Future Volume (vph)	1366	470	482	1026	390	686
Lane Group Flow (vph)	1607	588	603	1153	424	722
Turn Type	NA	Perm	Prot	NA	Perm	Perm
Protected Phases	6		5	2		
Permitted Phases		6			8	8
Detector Phase	6	6	5	2	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	26.0	26.0	12.0	26.0	20.0	20.0
Total Split (s)	70.0	70.0	45.0	115.0	25.0	25.0
Total Split (%)	50.0%	50.0%	32.1%	82.1%	17.9%	17.9%
Yellow Time (s)	4.5	4.5	4.0	4.5	5.0	5.0
All-Red Time (s)	3.5	3.5	3.0	3.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	8.0	8.0	7.0	8.0	7.5	7.5
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	None	C-Max	None	None
v/c Ratio	0.41	0.59	0.82	0.29	0.67	1.23
Control Delay	22.7	10.9	62.1	5.2	64.2	150.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.7	10.9	62.1	5.2	64.2	150.0
Queue Length 50th (ft)	220	118	273	101	132	~335
Queue Length 95th (ft)	252	174	277	116	171	#475
Internal Link Dist (ft)	560			660		
Turn Bay Length (ft)		275				
Base Capacity (vph)	3874	1002	950	3964	636	586
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.59	0.63	0.29	0.67	1.23

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 23 (16%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 34: I-285 SB Entrance Ramp/I-285 SB Exit Ramp & Paces Ferry Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1366	470	482	1026	0	0	0	0	390	0	686
Future Volume (vph)	0	1366	470	482	1026	0	0	0	0	390	0	686
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.0	8.0	7.0	8.0					7.5		7.5
Lane Util. Factor		0.81	1.00	0.97	0.91					0.94		0.88
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		7695	1615	3502	5187					5090		2842
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		7695	1615	3502	5187					5090		2842
Peak-hour factor, PHF	0.25	0.85	0.80	0.80	0.89	0.25	0.25	0.25	0.25	0.92	0.25	0.95
Adj. Flow (vph)	0	1607	588	602	1153	0	0	0	0	424	0	722
RTOR Reduction (vph)	0	0	190	0	0	0	0	0	0	0	0	231
Lane Group Flow (vph)	0	1607	398	603	1153	0	0	0	0	424	0	491
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type		NA	Perm	Prot	NA					Perm		Perm
Protected Phases		6		5	2							
Permitted Phases			6							8		8
Actuated Green, G (s)		70.5	70.5	29.5	107.0					17.5		17.5
Effective Green, g (s)		70.5	70.5	29.5	107.0					17.5		17.5
Actuated g/C Ratio		0.50	0.50	0.21	0.76					0.12		0.12
Clearance Time (s)		8.0	8.0	7.0	8.0					7.5		7.5
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0		3.0
Lane Grp Cap (vph)		3874	813	737	3964					636		355
v/s Ratio Prot		0.21		c0.17	0.22							
v/s Ratio Perm			c0.25							0.08		c0.17
v/c Ratio		0.41	0.49	0.82	0.29					0.67		1.38
Uniform Delay, d1		21.8	22.9	52.7	5.0					58.5		61.2
Progression Factor		1.00	1.00	1.00	1.00					1.00		1.00
Incremental Delay, d2		0.3	2.1	7.0	0.2					2.6		189.1
Delay (s)		22.1	25.0	59.7	5.2					61.1		250.3
Level of Service		C	C	E	A					E		F
Approach Delay (s)		22.9			23.9			0.0			180.3	
Approach LOS		C			C			A			F	

Intersection Summary			
HCM 2000 Control Delay	58.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	1	0	1	11	0	182	2	1381	1	43	313	2
Future Volume (Veh/h)	1	0	1	11	0	182	2	1381	1	43	313	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.25	0.25	0.50	0.25	0.82	0.50	0.86	0.25	0.68	0.90	0.50
Hourly flow rate (vph)	4	0	4	22	0	222	4	1606	4	63	348	4
Pedestrians								3				
Lane Width (ft)								12.0				
Walking Speed (ft/s)								3.5				
Percent Blockage								0				
Right turn flare (veh)						6						
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)											1045	
pX, platoon unblocked												
vC, conflicting volume	1396	2092	177	1923	2094	805	352			1610		
vC1, stage 1 conf vol	474	474		1616	1616							
vC2, stage 2 conf vol	922	1618		307	478							
vCu, unblocked vol	1396	2092	177	1923	2094	805	352			1610		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)	6.5	5.5		6.5	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	87	100	100	79	100	32	100			85		
cM capacity (veh/h)	31	97	839	106	153	328	1218			411		

Direction, Lane #	EB 1	WB 1	NE 1	NE 2	NE 3	SW 1	SW 2	SW 3	SW 4
Volume Total	8	244	4	1071	539	63	174	174	4
Volume Left	4	22	4	0	0	63	0	0	0
Volume Right	4	222	0	0	4	0	0	0	4
cSH	60	360	1218	1700	1700	411	1700	1700	1700
Volume to Capacity	0.13	0.68	0.00	0.63	0.32	0.15	0.10	0.10	0.00
Queue Length 95th (ft)	11	119	0	0	0	13	0	0	0
Control Delay (s)	74.5	37.3	8.0	0.0	0.0	15.3	0.0	0.0	0.0
Lane LOS	F	E	A			C			
Approach Delay (s)	74.5	37.3	0.0			2.3			
Approach LOS	F	E							

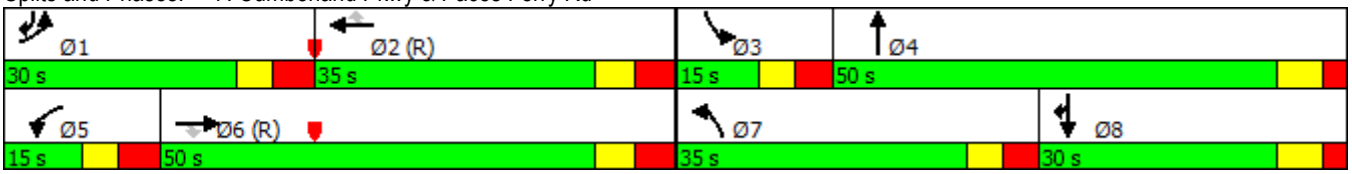
Intersection Summary				
Average Delay	4.7			
Intersection Capacity Utilization	62.8%	ICU Level of Service	B	
Analysis Period (min)	15			

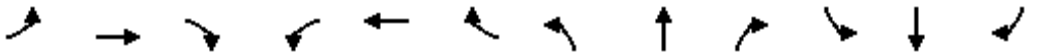
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	578	819	378	138	409	91	453	989	75	196	176
Future Volume (vph)	578	819	378	138	409	91	453	989	75	196	176
Lane Group Flow (vph)	642	910	430	148	454	110	581	1626	81	235	176
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA	pt+ov
Protected Phases	1	6		5	2		7	4	3	8	8 1
Permitted Phases			6			2					
Detector Phase	1	6	6	5	2	2	7	4	3	8	8 1
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)	12.5	26.0	26.0	12.5	26.0	26.0	12.0	25.0	12.0	25.0	
Total Split (s)	30.0	50.0	50.0	15.0	35.0	35.0	35.0	50.0	15.0	30.0	
Total Split (%)	23.1%	38.5%	38.5%	11.5%	26.9%	26.9%	26.9%	38.5%	11.5%	23.1%	
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0	4.0	3.5	4.5	3.5	4.5	
All-Red Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.5	2.5	3.5	2.5	
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)	7.5	8.0	8.0	7.5	8.0	8.0	7.0	7.0	7.0	7.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	None	Max	
v/c Ratio	0.78	0.78	0.36	0.76	0.40	0.20	0.85	0.96	0.74	0.38	0.14
Control Delay	59.8	45.4	3.7	83.8	45.0	0.8	62.4	54.6	95.9	46.9	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.8	45.4	3.7	83.8	45.0	0.8	62.4	54.6	95.9	46.9	5.0
Queue Length 50th (ft)	183	364	0	64	122	0	242	472	68	99	4
Queue Length 95th (ft)	228	446	35	#117	159	0	256	487	#153	147	30
Internal Link Dist (ft)		610			246			250		395	
Turn Bay Length (ft)	455		425	400		100			215		300
Base Capacity (vph)	880	1166	1200	196	1129	564	754	1697	111	625	1276
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.78	0.36	0.76	0.40	0.20	0.77	0.96	0.73	0.38	0.14

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 115 (88%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Cumberland Pkwy & Paces Ferry Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	578	819	378	138	409	91	453	989	332	75	196	176
Future Volume (vph)	578	819	378	138	409	91	453	989	332	75	196	176
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.5	8.0	8.0	7.5	8.0	8.0	7.0	7.0		7.0	7.0	7.0
Lane Util. Factor	0.94	0.95	0.88	0.97	0.91	1.00	0.97	0.91		1.00	0.86	0.86
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	0.99	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	5090	3610	2814	3400	5136	1583	3502	4958		1805	3168	2778
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	5090	3610	2814	3400	5136	1583	3502	4958		1805	3168	2778
Peak-hour factor, PHF	0.90	0.90	0.88	0.93	0.90	0.83	0.78	0.84	0.74	0.93	0.91	0.90
Adj. Flow (vph)	642	910	430	148	454	110	581	1177	449	81	215	196
RTOR Reduction (vph)	0	0	291	0	0	86	0	53	0	0	5	94
Lane Group Flow (vph)	642	910	139	148	454	24	581	1573	0	81	230	82
Heavy Vehicles (%)	0%	0%	1%	3%	1%	2%	0%	0%	1%	0%	2%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	pt+ov
Protected Phases	1	6		5	2		7	4		3	8	8 1
Permitted Phases			6			2						
Actuated Green, G (s)	20.9	42.0	42.0	7.5	28.6	28.6	25.5	43.1		7.9	25.5	53.4
Effective Green, g (s)	20.9	42.0	42.0	7.5	28.6	28.6	25.5	43.1		7.9	25.5	53.4
Actuated g/C Ratio	0.16	0.32	0.32	0.06	0.22	0.22	0.20	0.33		0.06	0.20	0.41
Clearance Time (s)	7.5	8.0	8.0	7.5	8.0	8.0	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	818	1166	909	196	1129	348	686	1643		109	621	1141
v/s Ratio Prot	c0.13	c0.25		0.04	0.09		c0.17	c0.32		0.04	0.07	0.03
v/s Ratio Perm			0.05			0.02						
v/c Ratio	0.78	0.78	0.15	0.76	0.40	0.07	0.85	0.96		0.74	0.37	0.07
Uniform Delay, d1	52.4	39.8	31.3	60.3	43.4	40.2	50.4	42.6		60.1	45.3	23.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	5.0	5.2	0.4	15.2	1.1	0.4	9.5	14.2		23.6	1.7	0.0
Delay (s)	57.4	45.0	31.7	75.5	44.5	40.5	59.9	56.7		83.7	47.0	23.3
Level of Service	E	D	C	E	D	D	E	E		F	D	C
Approach Delay (s)		46.1			50.3			57.6			44.6	
Approach LOS		D			D			E			D	

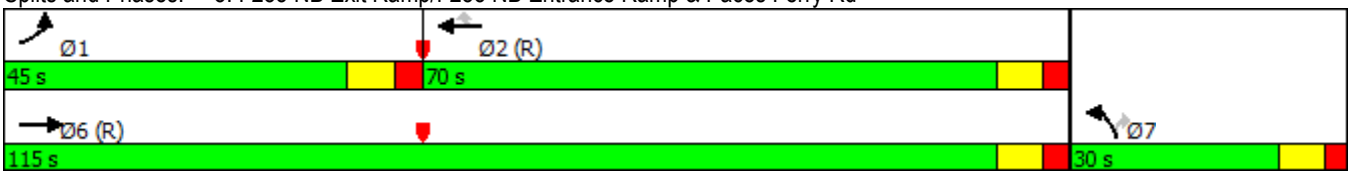
Intersection Summary			
HCM 2000 Control Delay	51.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	29.5
Intersection Capacity Utilization	82.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

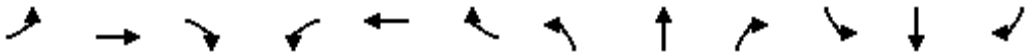
Lane Group	EBL	EBT	WBT	WBR	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	673	1603	630	400	250	265
Future Volume (vph)	673	1603	630	400	250	265
Lane Group Flow (vph)	716	1742	733	519	313	305
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	1	6	2		7	
Permitted Phases				2		7
Detector Phase	1	6	2	2	7	7
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	13.0	26.0	26.0	26.0	12.5	12.5
Total Split (s)	45.0	115.0	70.0	70.0	30.0	30.0
Total Split (%)	31.0%	79.3%	48.3%	48.3%	20.7%	20.7%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	3.0	3.0	3.0	3.0	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	8.0	8.0	8.0	8.0	7.5	7.5
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	None	None
v/c Ratio	0.88	0.44	0.20	0.32	0.72	0.69
Control Delay	65.9	6.5	22.8	2.5	70.4	49.2
Queue Delay	0.0	0.3	0.0	0.0	0.0	0.0
Total Delay	65.9	6.8	22.8	2.5	70.4	49.2
Queue Length 50th (ft)	336	185	98	0	148	107
Queue Length 95th (ft)	404	239	121	7	170	152
Internal Link Dist (ft)		660	610			
Turn Bay Length (ft)	520			320		
Base Capacity (vph)	898	3980	3682	1630	537	519
Starvation Cap Reductn	0	1291	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.65	0.20	0.32	0.58	0.59

Intersection Summary

Cycle Length: 145
Actuated Cycle Length: 145
Offset: 110 (76%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 8: I-285 NB Exit Ramp/I-285 NB Entrance Ramp & Paces Ferry Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	673	1603	0	0	630	400	250	0	265	0	0	0
Future Volume (vph)	673	1603	0	0	630	400	250	0	265	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0			8.0	8.0	7.5		7.5			
Lane Util. Factor	0.97	0.91			0.81	0.88	0.97		0.88			
Frt	1.00	1.00			1.00	0.85	1.00		0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)	3502	5187			7695	2842	3467		2814			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	3502	5187			7695	2842	3467		2814			
Peak-hour factor, PHF	0.94	0.92	0.25	0.25	0.86	0.77	0.80	0.25	0.87	0.25	0.25	0.25
Adj. Flow (vph)	716	1742	0	0	733	519	312	0	305	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	271	0	0	86	0	0	0
Lane Group Flow (vph)	716	1742	0	0	733	248	313	0	219	0	0	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	0%	1%	0%	0%	0%
Turn Type	Prot	NA			NA	Perm	Prot		Perm			
Protected Phases	1	6			2		7					
Permitted Phases						2			7			
Actuated Green, G (s)	33.9	111.3			69.4	69.4	18.2		18.2			
Effective Green, g (s)	33.9	111.3			69.4	69.4	18.2		18.2			
Actuated g/C Ratio	0.23	0.77			0.48	0.48	0.13		0.13			
Clearance Time (s)	8.0	8.0			8.0	8.0	7.5		7.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0		3.0			
Lane Grp Cap (vph)	818	3981			3682	1360	435		353			
v/s Ratio Prot	c0.20	c0.34			0.10		c0.09					
v/s Ratio Perm						0.09			0.08			
v/c Ratio	0.88	0.44			0.20	0.18	0.72		0.62			
Uniform Delay, d1	53.5	5.9			21.8	21.6	60.9		60.1			
Progression Factor	1.00	1.00			1.00	1.00	1.00		1.00			
Incremental Delay, d2	10.3	0.4			0.1	0.3	5.6		3.4			
Delay (s)	63.8	6.2			21.9	21.9	66.6		63.5			
Level of Service	E	A			C	C	E		E			
Approach Delay (s)		23.0			21.9			65.1			0.0	
Approach LOS		C			C			E			A	

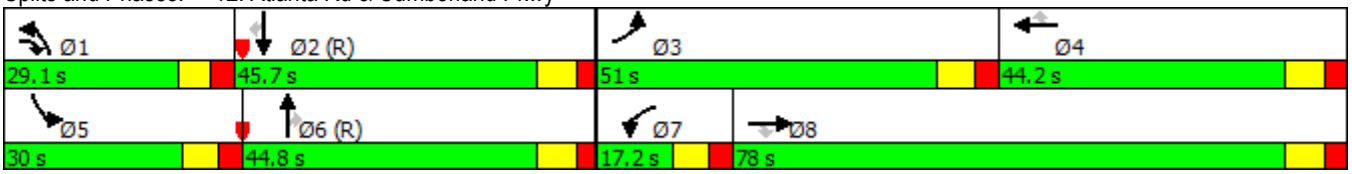
Intersection Summary			
HCM 2000 Control Delay	28.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	23.5
Intersection Capacity Utilization	71.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

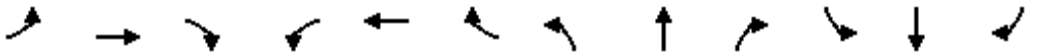
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	565	1247	1230	142	205	126	502	447	63	143	684	173
Future Volume (vph)	565	1247	1230	142	205	126	502	447	63	143	684	173
Lane Group Flow (vph)	673	1450	1268	182	241	166	570	552	88	196	705	199
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	8	1	7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Detector Phase	3	8	1	7	4	4	1	6	6	5	2	2
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)	13.0	26.0	12.5	12.5	26.0	26.0	12.5	26.0	26.0	13.0	26.0	26.0
Total Split (s)	51.0	78.0	29.1	17.2	44.2	44.2	29.1	44.8	44.8	30.0	45.7	45.7
Total Split (%)	30.0%	45.9%	17.1%	10.1%	26.0%	26.0%	17.1%	26.4%	26.4%	17.6%	26.9%	26.9%
Yellow Time (s)	5.0	5.0	4.0	4.5	5.0	5.0	4.0	5.0	5.0	4.5	5.0	5.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.5	2.5	3.0	2.5	2.5
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)	8.0	8.0	7.0	7.5	8.0	8.0	7.0	7.5	7.5	7.5	7.5	7.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
v/c Ratio	0.88	0.98	0.75	0.91	0.28	0.32	0.87	0.68	0.18	0.88	0.88	0.40
Control Delay	76.8	66.9	27.5	122.6	54.4	7.7	87.0	65.3	0.8	106.7	76.7	12.6
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	76.8	66.9	27.5	122.6	54.4	7.7	87.0	65.3	0.8	106.7	76.7	12.6
Queue Length 50th (ft)	375	832	543	106	116	0	224	302	0	216	403	20
Queue Length 95th (ft)	401	#885	644	#145	155	25	#268	327	0	246	#502	86
Internal Link Dist (ft)		536			1195			492			397	
Turn Bay Length (ft)	265		300	290		260	325		140	360		170
Base Capacity (vph)	868	1486	1688	199	873	522	655	811	499	238	803	492
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.98	0.75	0.91	0.28	0.32	0.87	0.68	0.18	0.82	0.88	0.40

Intersection Summary

Cycle Length: 170
Actuated Cycle Length: 170
Offset: 91 (54%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 130
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 12: Atlanta Rd & Cumberland Pkwy





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	565	1247	1230	142	205	126	502	447	63	143	684	173
Future Volume (vph)	565	1247	1230	142	205	126	502	447	63	143	684	173
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0	7.0	7.5	8.0	8.0	7.0	7.5	7.5	7.5	7.5	7.5
Lane Util. Factor	0.97	0.95	0.88	0.97	0.95	1.00	0.94	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3610	2814	3502	3610	1615	5040	3574	1599	1805	3574	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3610	2814	3502	3610	1615	5040	3574	1599	1805	3574	1583
Peak-hour factor, PHF	0.84	0.86	0.97	0.78	0.85	0.76	0.88	0.81	0.72	0.73	0.97	0.87
Adj. Flow (vph)	673	1450	1268	182	241	166	570	552	88	196	705	199
RTOR Reduction (vph)	0	0	35	0	0	126	0	0	68	0	0	136
Lane Group Flow (vph)	673	1450	1233	182	241	40	570	552	20	196	705	63
Heavy Vehicles (%)	2%	0%	1%	0%	0%	0%	1%	1%	1%	0%	1%	2%
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	8	1	7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	38.0	70.0	92.1	9.7	41.2	41.2	22.1	38.6	38.6	21.2	38.2	38.2
Effective Green, g (s)	38.0	70.0	92.1	9.7	41.2	41.2	22.1	38.6	38.6	21.2	38.2	38.2
Actuated g/C Ratio	0.22	0.41	0.54	0.06	0.24	0.24	0.13	0.23	0.23	0.12	0.22	0.22
Clearance Time (s)	8.0	8.0	7.0	7.5	8.0	8.0	7.0	7.5	7.5	7.5	7.5	7.5
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
Lane Grp Cap (vph)	767	1486	1524	199	874	391	655	811	363	225	803	355
v/s Ratio Prot	c0.20	c0.40	0.11	0.05	0.07		c0.11	0.15		0.11	c0.20	
v/s Ratio Perm			0.33			0.02			0.01			0.04
v/c Ratio	0.88	0.98	0.81	0.91	0.28	0.10	0.87	0.68	0.06	0.87	0.88	0.18
Uniform Delay, d1	63.8	49.2	31.8	79.7	52.3	50.0	72.5	60.1	51.4	73.1	63.6	53.2
Progression 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
Incremental Delay, d2	11.1	17.7	3.3	40.4	0.2	0.1	12.1	4.6	0.3	28.7	13.0	1.1
Delay (s)	74.8	66.9	35.0	120.1	52.5	50.2	84.6	64.6	51.7	101.7	76.7	54.3
Level of Service	E	E	D	F	D	D	F	E	D	F	E	D
Approach Delay (s)		56.5			72.7			73.1			77.1	
Approach LOS		E			E			E			E	

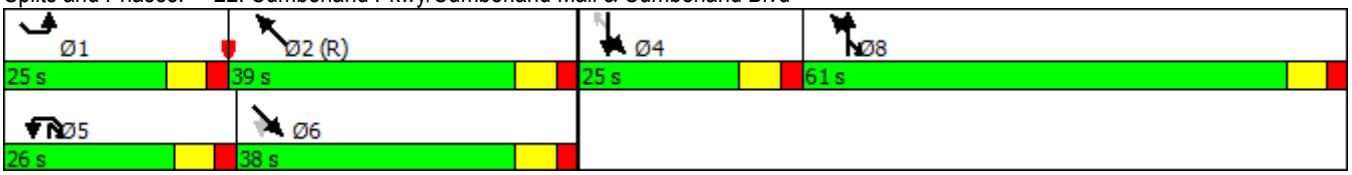
Intersection Summary			
HCM 2000 Control Delay	64.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	31.0
Intersection Capacity Utilization	92.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT
Lane Configurations											
Traffic Volume (vph)	339	93	1303	2	25	13	50	497	285	277	95
Future Volume (vph)	339	93	1303	2	25	13	50	497	285	277	95
Lane Group Flow (vph)	242	248	1498	4	44	19	70	552	324	315	125
Turn Type	Split	NA	pt+ov	Split	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	8	8	8 5	4	4		1	6		5	2
Permitted Phases						4			6		
Detector Phase	8	8	8 5	4	4	4	1	6	6	5	2
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)	25.0	25.0		25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Total Split (s)	61.0	61.0		25.0	25.0	25.0	25.0	38.0	38.0	26.0	39.0
Total Split (%)	40.7%	40.7%		16.7%	16.7%	16.7%	16.7%	25.3%	25.3%	17.3%	26.0%
Yellow Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.5	2.5		2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
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)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	Max	Max	Max	Max	C-Max
v/c Ratio	0.39	0.40	0.74	0.05	0.27	0.10	0.19	0.74	0.55	0.42	0.17
Control Delay	36.3	36.3	12.4	68.0	72.3	1.0	58.0	62.6	8.6	57.1	46.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.3	36.3	12.4	68.0	72.3	1.0	58.0	62.6	8.6	57.1	46.9
Queue Length 50th (ft)	170	174	316	4	22	0	62	268	0	151	51
Queue Length 95th (ft)	242	189	385	9	27	0	90	337	76	203	73
Internal Link Dist (ft)		1280			195			880			560
Turn Bay Length (ft)	255		245				220		320	440	
Base Capacity (vph)	676	692	2026	216	401	288	378	746	590	758	751
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.36	0.74	0.02	0.11	0.07	0.19	0.74	0.55	0.42	0.17

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 17 (11%), Referenced to phase 2:NWT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 22: Cumberland Pkwy/Cumberland Mall & Cumberland Blvd



Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	339	93	1303	2	25	13	50	497	285	277	95	7
Future Volume (vph)	339	93	1303	2	25	13	50	497	285	277	95	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Lane Util. Factor	0.95	0.95	0.88	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1715	1754	2842	1805	3343	1442	1805	3610	1615	3502	3506	
Flt Permitted	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1715	1754	2842	1805	3343	1442	1805	3610	1615	3502	3506	
Peak-hour factor, PHF	0.94	0.72	0.87	0.50	0.57	0.69	0.71	0.90	0.88	0.88	0.82	0.75
Adj. Flow (vph)	361	129	1498	4	44	19	70	552	324	315	116	9
RTOR Reduction (vph)	0	0	268	0	0	18	0	0	260	0	4	0
Lane Group Flow (vph)	242	248	1230	4	44	1	70	552	64	315	121	0
Heavy Vehicles (%)	0%	1%	0%	0%	8%	12%	0%	0%	0%	0%	2%	0%
Turn Type	Split	NA	pt+ov	Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	8	8	8 5	4	4		1	6		5	2	
Permitted Phases						4			6			
Actuated Green, G (s)	53.7	53.7	93.2	6.3	6.3	6.3	31.5	29.5	29.5	32.5	30.5	
Effective Green, g (s)	53.7	53.7	93.2	6.3	6.3	6.3	31.5	29.5	29.5	32.5	30.5	
Actuated g/C Ratio	0.36	0.36	0.62	0.04	0.04	0.04	0.21	0.20	0.20	0.22	0.20	
Clearance Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	613	627	1765	75	140	60	379	709	317	758	712	
v/s Ratio Prot	0.14	0.14	c0.43	0.00	c0.01		0.04	c0.15		0.09	0.03	
v/s Ratio Perm						0.00			0.04			
v/c Ratio	0.39	0.40	0.70	0.05	0.31	0.01	0.18	0.78	0.20	0.42	0.17	
Uniform Delay, d1	36.0	36.0	19.0	69.0	69.8	68.9	48.7	57.2	50.4	50.6	49.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.4	0.4	1.2	0.3	1.3	0.1	1.1	8.2	1.4	1.7	0.5	
Delay (s)	36.4	36.4	20.2	69.3	71.0	69.0	49.8	65.4	51.8	52.3	49.8	
Level of Service	D	D	C	E	E	E	D	E	D	D	D	
Approach Delay (s)		24.2			70.3			59.6			51.6	
Approach LOS		C			E			E			D	

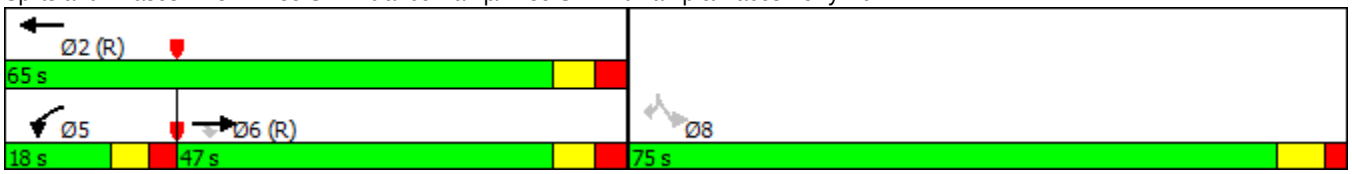
Intersection Summary			
HCM 2000 Control Delay	38.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	28.0
Intersection Capacity Utilization	81.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

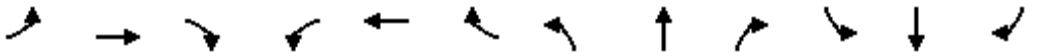
Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1619	378	232	642	678	1315
Future Volume (vph)	1619	378	232	642	678	1315
Lane Group Flow (vph)	1861	434	258	705	721	1445
Turn Type	NA	Perm	Prot	NA	Perm	Perm
Protected Phases	6		5	2		
Permitted Phases		6			8	8
Detector Phase	6	6	5	2	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	26.0	26.0	12.0	26.0	20.0	20.0
Total Split (s)	47.0	47.0	18.0	65.0	75.0	75.0
Total Split (%)	33.6%	33.6%	12.9%	46.4%	53.6%	53.6%
Yellow Time (s)	4.5	4.5	4.0	4.5	5.0	5.0
All-Red Time (s)	3.5	3.5	3.0	3.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	8.0	8.0	7.0	8.0	7.5	7.5
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	None	C-Max	None	None
v/c Ratio	0.87	0.59	0.96	0.33	0.29	0.98
Control Delay	53.4	8.7	108.9	29.0	22.3	50.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.4	8.7	108.9	29.0	22.3	50.7
Queue Length 50th (ft)	400	20	122	160	137	659
Queue Length 95th (ft)	420	98	#212	194	167	#859
Internal Link Dist (ft)	560			660		
Turn Bay Length (ft)		275				
Base Capacity (vph)	2143	736	269	2111	2454	1470
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.59	0.96	0.33	0.29	0.98

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 48 (34%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 34: I-285 SB Entrance Ramp/I-285 SB Exit Ramp & Paces Ferry Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1619	378	232	642	0	0	0	0	678	0	1315
Future Volume (vph)	0	1619	378	232	642	0	0	0	0	678	0	1315
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.0	8.0	7.0	8.0					7.5		7.5
Lane Util. Factor		0.81	1.00	0.97	0.91					0.94		0.88
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		7695	1599	3433	5187					5090		2842
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		7695	1599	3433	5187					5090		2842
Peak-hour factor, PHF	0.25	0.87	0.87	0.90	0.91	0.25	0.25	0.25	0.25	0.94	0.25	0.91
Adj. Flow (vph)	0	1861	434	258	705	0	0	0	0	721	0	1445
RTOR Reduction (vph)	0	0	291	0	0	0	0	0	0	0	0	100
Lane Group Flow (vph)	0	1861	143	258	705	0	0	0	0	721	0	1345
Heavy Vehicles (%)	0%	0%	1%	2%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type		NA	Perm	Prot	NA					Perm		Perm
Protected Phases		6		5	2							
Permitted Phases			6							8		8
Actuated Green, G (s)		39.0	39.0	11.0	57.0					67.5		67.5
Effective Green, g (s)		39.0	39.0	11.0	57.0					67.5		67.5
Actuated g/C Ratio		0.28	0.28	0.08	0.41					0.48		0.48
Clearance Time (s)		8.0	8.0	7.0	8.0					7.5		7.5
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0		3.0
Lane Grp Cap (vph)		2143	445	269	2111					2454		1370
v/s Ratio Prot		c0.24		c0.08	0.14							
v/s Ratio Perm			0.09							0.14		c0.47
v/c Ratio		0.87	0.32	0.96	0.33					0.29		0.98
Uniform Delay, d1		48.1	40.0	64.3	28.5					21.9		35.6
Progression Factor		1.00	1.00	1.00	1.00					1.00		1.00
Incremental Delay, d2		5.1	1.9	43.2	0.4					0.1		19.9
Delay (s)		53.2	41.9	107.4	28.9					21.9		55.5
Level of Service		D	D	F	C					C		E
Approach Delay (s)		51.0			49.9			0.0			44.3	
Approach LOS		D			D			A			D	

Intersection Summary			
HCM 2000 Control Delay	48.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	71.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	2	0	5	16	0	58	0	657	7	178	1602	5
Future Volume (Veh/h)	2	0	5	16	0	58	0	657	7	178	1602	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.50	0.25	0.31	0.47	0.25	0.76	0.25	0.93	0.44	0.78	0.97	0.62
Hourly flow rate (vph)	4	0	16	34	0	76	0	706	16	228	1652	8
Pedestrians								3			3	
Lane Width (ft)								12.0			12.0	
Walking Speed (ft/s)								3.5			3.5	
Percent Blockage								0			0	
Right turn flare (veh)						6						
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)											1045	
pX, platoon unblocked	0.48	0.48	0.48	0.48	0.48		0.48					
vC, conflicting volume	2502	2830	829	2015	2830	364	1660			722		
vC1, stage 1 conf vol	2108	2108		714	714							
vC2, stage 2 conf vol	394	722		1301	2116							
vCu, unblocked vol	1958	2644	0	939	2644	364	196			722		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)	6.5	5.5		6.5	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	95	100	97	87	100	88	100			74		
cM capacity (veh/h)	74	86	520	268	92	637	664			889		

Direction, Lane #	EB 1	WB 1	NE 1	NE 2	NE 3	SW 1	SW 2	SW 3	SW 4
Volume Total	20	110	0	471	251	228	826	826	8
Volume Left	4	34	0	0	0	228	0	0	0
Volume Right	16	76	0	0	16	0	0	0	8
cSH	235	868	1700	1700	1700	889	1700	1700	1700
Volume to Capacity	0.09	0.13	0.00	0.28	0.15	0.26	0.49	0.49	0.00
Queue Length 95th (ft)	7	11	0	0	0	26	0	0	0
Control Delay (s)	21.7	14.2	0.0	0.0	0.0	10.4	0.0	0.0	0.0
Lane LOS	C	B				B			
Approach Delay (s)	21.7	14.2	0.0			1.3			
Approach LOS	C	B							

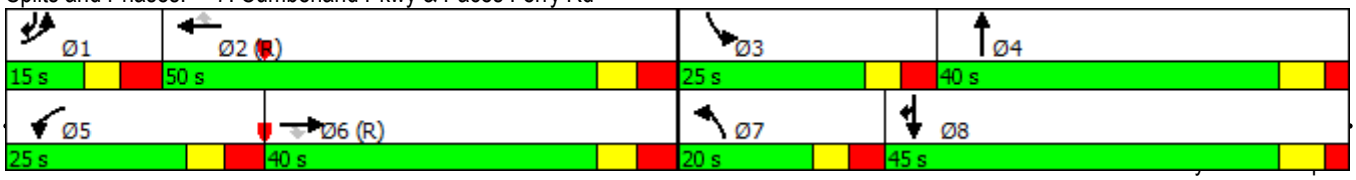
Intersection Summary				
Average Delay	1.6			
Intersection Capacity Utilization	61.0%	ICU Level of Service		B
Analysis Period (min)	15			

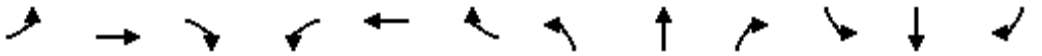
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	224	493	549	475	956	92	333	406	110	845	414
Future Volume (vph)	224	493	549	475	956	92	333	406	110	845	414
Lane Group Flow (vph)	264	519	638	516	1166	110	411	693	126	1017	510
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA	pt+ov
Protected Phases	1	6		5	2		7	4	3	8	8 1
Permitted Phases			6			2					
Detector Phase	1	6	6	5	2	2	7	4	3	8	8 1
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)	12.5	26.0	26.0	12.5	26.0	26.0	12.0	25.0	12.0	25.0	
Total Split (s)	15.0	40.0	40.0	25.0	50.0	50.0	20.0	40.0	25.0	45.0	
Total Split (%)	11.5%	30.8%	30.8%	19.2%	38.5%	38.5%	15.4%	30.8%	19.2%	34.6%	
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0	4.0	3.5	4.5	3.5	4.5	
All-Red Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.5	2.5	3.5	2.5	
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)	7.5	8.0	8.0	7.5	8.0	8.0	7.0	7.0	7.0	7.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	None	Max	
v/c Ratio	0.91	0.58	0.61	1.10	0.70	0.18	1.17	0.47	0.65	1.07	0.41
Control Delay	94.8	46.3	14.3	121.4	41.1	2.0	154.3	34.7	70.8	93.6	19.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	94.8	46.3	14.3	121.4	41.1	2.0	154.3	34.7	70.8	93.6	19.1
Queue Length 50th (ft)	79	203	69	~253	313	0	~212	153	103	~551	116
Queue Length 95th (ft)	#123	263	121	#366	325	8	#270	196	160	#676	118
Internal Link Dist (ft)		610			246			250		395	
Turn Bay Length (ft)	455		425	400		100			215		300
Base Capacity (vph)	290	888	1039	471	1675	626	350	1469	249	950	1229
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.58	0.61	1.10	0.70	0.18	1.17	0.47	0.51	1.07	0.41

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 13 (10%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Cumberland Pkwy & Paces Ferry Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	224	493	549	475	956	92	333	406	183	110	845	414
Future Volume (vph)	224	493	549	475	956	92	333	406	183	110	845	414
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.5	8.0	8.0	7.5	8.0	8.0	7.0	7.0		7.0	7.0	7.0
Lane Util. Factor	0.94	0.95	0.88	0.97	0.91	1.00	0.97	0.91		1.00	0.86	0.86
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95		1.00	0.99	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	5040	3610	2814	3502	5187	1615	3502	4927		1805	3241	2778
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	5040	3610	2814	3502	5187	1615	3502	4927		1805	3241	2778
Peak-hour factor, PHF	0.85	0.95	0.86	0.92	0.82	0.84	0.81	0.88	0.79	0.87	0.88	0.73
Adj. Flow (vph)	264	519	638	516	1166	110	411	461	232	126	960	567
RTOR Reduction (vph)	0	0	347	0	0	74	0	67	0	0	3	98
Lane Group Flow (vph)	264	519	291	516	1166	36	411	626	0	126	1014	412
Heavy Vehicles (%)	1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	pt+ov
Protected Phases	1	6		5	2		7	4		3	8	8 1
Permitted Phases			6			2						
Actuated Green, G (s)	7.5	32.0	32.0	17.5	42.0	42.0	13.0	37.0		14.0	38.0	52.5
Effective Green, g (s)	7.5	32.0	32.0	17.5	42.0	42.0	13.0	37.0		14.0	38.0	52.5
Actuated g/C Ratio	0.06	0.25	0.25	0.13	0.32	0.32	0.10	0.28		0.11	0.29	0.40
Clearance Time (s)	7.5	8.0	8.0	7.5	8.0	8.0	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	290	888	692	471	1675	521	350	1402		194	947	1121
v/s Ratio Prot	0.05	0.14		c0.15	c0.22		c0.12	0.13		0.07	c0.31	0.15
v/s Ratio Perm			0.10			0.02						
v/c Ratio	0.91	0.58	0.42	1.10	0.70	0.07	1.17	0.45		0.65	1.07	0.37
Uniform Delay, d1	60.9	43.1	41.2	56.2	38.4	30.5	58.5	38.1		55.6	46.0	27.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	30.7	2.8	1.9	69.9	2.4	0.3	104.4	1.0		7.3	50.2	0.2
Delay (s)	91.6	46.0	43.1	126.2	40.8	30.7	162.9	39.1		62.9	96.2	27.3
Level of Service	F	D	D	F	D	C	F	D		E	F	C
Approach Delay (s)		53.1			64.8			85.2			72.4	
Approach LOS		D			E			F			E	

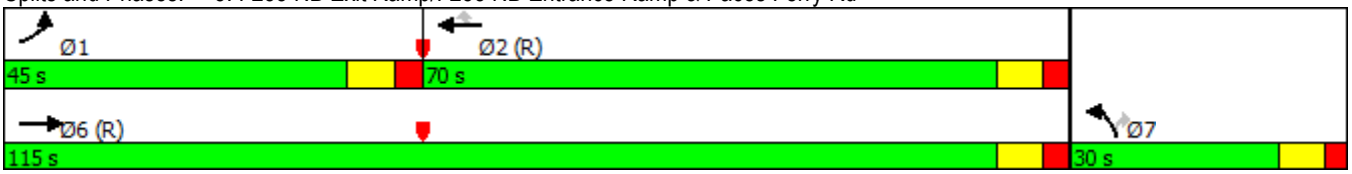
Intersection Summary			
HCM 2000 Control Delay	67.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	29.5
Intersection Capacity Utilization	87.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

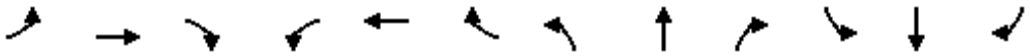
Lane Group	EBL	EBT	WBT	WBR	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	830	937	1022	605	260	280
Future Volume (vph)	830	937	1022	605	260	280
Lane Group Flow (vph)	976	1018	1188	720	329	359
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	1	6	2		7	
Permitted Phases				2		7
Detector Phase	1	6	2	2	7	7
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	13.0	26.0	26.0	26.0	12.5	12.5
Total Split (s)	45.0	115.0	70.0	70.0	30.0	30.0
Total Split (%)	31.0%	79.3%	48.3%	48.3%	20.7%	20.7%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	3.0	3.0	3.0	3.0	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	8.0	8.0	8.0	8.0	7.5	7.5
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	None	None
v/c Ratio	0.99	0.26	0.36	0.44	0.73	0.56
Control Delay	78.5	5.4	28.5	2.6	70.0	13.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.5	5.4	28.5	2.6	70.0	13.0
Queue Length 50th (ft)	475	91	185	0	156	21
Queue Length 95th (ft)	#606	120	200	21	176	41
Internal Link Dist (ft)		660	610			
Turn Bay Length (ft)	520			320		
Base Capacity (vph)	983	3960	3290	1627	543	701
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.99	0.26	0.36	0.44	0.61	0.51

Intersection Summary

Cycle Length: 145
Actuated Cycle Length: 145
Offset: 23 (16%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 8: I-285 NB Exit Ramp/I-285 NB Entrance Ramp & Paces Ferry Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	830	937	0	0	1022	605	260	0	280	0	0	0
Future Volume (vph)	830	937	0	0	1022	605	260	0	280	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0			8.0	8.0	7.5		7.5			
Lane Util. Factor	0.97	0.91			0.81	0.88	0.97		0.88			
Frt	1.00	1.00			1.00	0.85	1.00		0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)	3502	5187			7695	2842	3502		2814			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	3502	5187			7695	2842	3502		2814			
Peak-hour factor, PHF	0.85	0.92	0.25	0.25	0.86	0.84	0.79	0.25	0.78	0.25	0.25	0.25
Adj. Flow (vph)	976	1018	0	0	1188	720	329	0	359	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	412	0	0	273	0	0	0
Lane Group Flow (vph)	976	1018	0	0	1188	308	329	0	86	0	0	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%
Turn Type	Prot	NA			NA	Perm	Prot		Perm			
Protected Phases	1	6			2		7					
Permitted Phases						2			7			
Actuated Green, G (s)	40.7	110.7			62.0	62.0	18.8		18.8			
Effective Green, g (s)	40.7	110.7			62.0	62.0	18.8		18.8			
Actuated g/C Ratio	0.28	0.76			0.43	0.43	0.13		0.13			
Clearance Time (s)	8.0	8.0			8.0	8.0	7.5		7.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0		3.0			
Lane Grp Cap (vph)	982	3960			3290	1215	454		364			
v/s Ratio Prot	c0.28	0.20			c0.15		c0.09					
v/s Ratio Perm						0.11			0.03			
v/c Ratio	0.99	0.26			0.36	0.25	0.72		0.24			
Uniform Delay, d1	52.0	5.0			28.1	26.6	60.6		56.6			
Progression Factor	1.00	1.00			1.00	1.00	1.00		1.00			
Incremental Delay, d2	27.1	0.2			0.3	0.5	5.7		0.3			
Delay (s)	79.1	5.2			28.4	27.1	66.3		57.0			
Level of Service	E	A			C	C	E		E			
Approach Delay (s)		41.4			27.9			61.4			0.0	
Approach LOS		D			C			E			A	

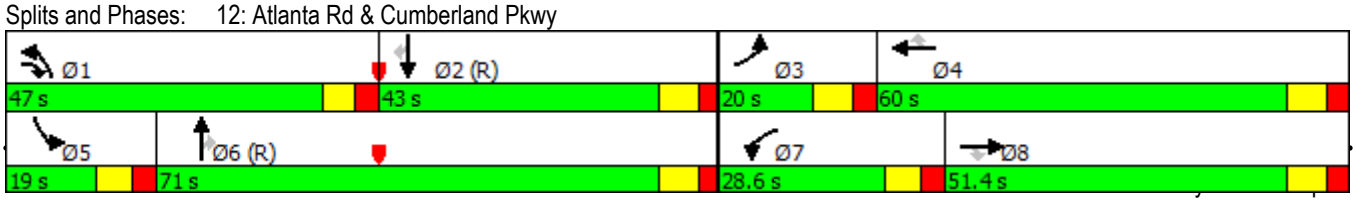
Intersection Summary			
HCM 2000 Control Delay	38.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	23.5
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

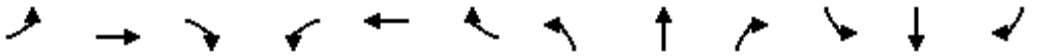
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	218	373	497	260	1053	125	1120	959	91	77	676	318
Future Volume (vph)	218	373	497	260	1053	125	1120	959	91	77	676	318
Lane Group Flow (vph)	237	414	565	289	1132	181	1191	1009	106	93	751	361
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	8	1	7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Detector Phase	3	8	1	7	4	4	1	6	6	5	2	2
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)	13.0	26.0	12.5	12.5	26.0	26.0	12.5	26.0	26.0	13.0	26.0	26.0
Total Split (s)	20.0	51.4	47.0	28.6	60.0	60.0	47.0	71.0	71.0	19.0	43.0	43.0
Total Split (%)	11.8%	30.2%	27.6%	16.8%	35.3%	35.3%	27.6%	41.8%	41.8%	11.2%	25.3%	25.3%
Yellow Time (s)	5.0	5.0	4.0	4.5	5.0	5.0	4.0	5.0	5.0	4.5	5.0	5.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.5	2.5	3.0	2.5	2.5
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)	8.0	8.0	7.0	7.5	8.0	8.0	7.0	7.5	7.5	7.5	7.5	7.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
v/c Ratio	0.98	0.43	0.35	0.75	1.03	0.29	1.01	0.75	0.15	0.79	1.01	0.71
Control Delay	129.4	53.3	16.8	86.1	90.5	7.7	91.0	50.5	0.4	117.7	100.1	31.3
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	129.4	53.3	16.8	86.1	90.5	7.7	91.0	50.5	0.4	117.7	100.1	31.3
Queue Length 50th (ft)	138	202	148	163	~703	6	~479	516	0	104	~450	145
Queue Length 95th (ft)	#235	262	193	215	#844	17	#584	602	0	#178	#593	259
Internal Link Dist (ft)		536			1195			492			397	
Turn Bay Length (ft)	265		300	290		260	325		140	360		170
Base Capacity (vph)	242	973	1611	434	1104	614	1185	1343	713	122	746	508
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.98	0.43	0.35	0.67	1.03	0.29	1.01	0.75	0.15	0.76	1.01	0.71

Intersection Summary

Cycle Length: 170
Actuated Cycle Length: 170
Offset: 87 (51%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 12: Atlanta Rd & Cumberland Pkwy





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	218	373	497	260	1053	125	1120	959	91	77	676	318
Future Volume (vph)	218	373	497	260	1053	125	1120	959	91	77	676	318
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0	7.0	7.5	8.0	8.0	7.0	7.5	7.5	7.5	7.5	7.5
Lane Util. Factor	0.97	0.95	0.88	0.97	0.95	1.00	0.94	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3610	2814	3502	3610	1615	5040	3574	1599	1805	3574	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3610	2814	3502	3610	1615	5040	3574	1599	1805	3574	1583
Peak-hour factor, PHF	0.92	0.90	0.88	0.90	0.93	0.69	0.94	0.95	0.86	0.83	0.90	0.88
Adj. Flow (vph)	237	414	565	289	1132	181	1191	1009	106	93	751	361
RTOR Reduction (vph)	0	0	63	0	0	120	0	0	66	0	0	178
Lane Group Flow (vph)	237	414	502	289	1132	61	1191	1009	40	93	751	183
Heavy Vehicles (%)	2%	0%	1%	0%	0%	0%	1%	1%	1%	0%	1%	2%
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	8	1	7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	12.0	45.9	85.9	18.6	52.0	52.0	40.0	63.9	63.9	11.1	35.5	35.5
Effective Green, g (s)	12.0	45.9	85.9	18.6	52.0	52.0	40.0	63.9	63.9	11.1	35.5	35.5
Actuated g/C Ratio	0.07	0.27	0.51	0.11	0.31	0.31	0.24	0.38	0.38	0.07	0.21	0.21
Clearance Time (s)	8.0	8.0	7.0	7.5	8.0	8.0	7.0	7.5	7.5	7.5	7.5	7.5
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
Lane Grp Cap (vph)	242	974	1421	383	1104	494	1185	1343	601	117	746	330
v/s Ratio Prot	0.07	0.11	0.08	c0.08	c0.31		c0.24	0.28		0.05	c0.21	
v/s Ratio Perm			0.10			0.04			0.02			0.12
v/c Ratio	0.98	0.43	0.35	0.75	1.03	0.12	1.01	0.75	0.07	0.79	1.01	0.55
Uniform Delay, d1	78.9	51.2	25.3	73.5	59.0	42.6	65.0	46.1	34.0	78.3	67.2	60.2
Progression 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
Incremental Delay, d2	51.4	0.3	0.2	8.2	33.7	0.1	27.4	3.9	0.2	30.0	34.6	6.6
Delay (s)	130.3	51.5	25.5	81.7	92.7	42.7	92.4	50.1	34.2	108.3	101.9	66.7
Level of Service	F	D	C	F	F	D	F	D	C	F	F	E
Approach Delay (s)		54.8			85.1			71.2			91.8	
Approach LOS		D			F			E			F	

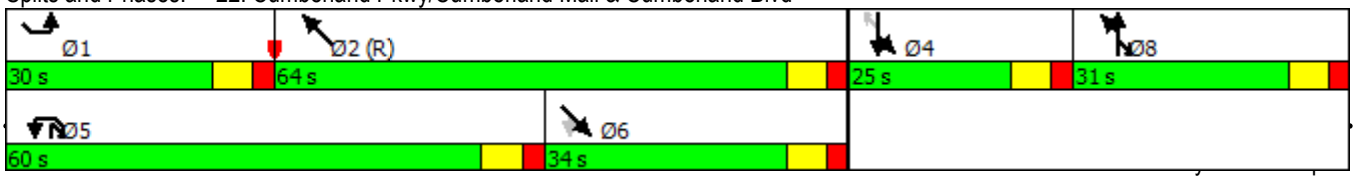
Intersection Summary			
HCM 2000 Control Delay	75.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	31.0
Intersection Capacity Utilization	100.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT
Lane Configurations											
Traffic Volume (vph)	324	128	602	31	322	147	130	193	425	1141	555
Future Volume (vph)	324	128	602	31	322	147	130	193	425	1141	555
Lane Group Flow (vph)	267	274	684	31	339	155	169	272	545	1214	685
Turn Type	Split	NA	pt+ov	Split	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	8	8	8 5	4	4		1	6		5	2
Permitted Phases						4			6		
Detector Phase	8	8	8 5	4	4	4	1	6	6	5	2
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)	25.0	25.0		25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Total Split (s)	31.0	31.0		25.0	25.0	25.0	30.0	34.0	34.0	60.0	64.0
Total Split (%)	20.7%	20.7%		16.7%	16.7%	16.7%	20.0%	22.7%	22.7%	40.0%	42.7%
Yellow Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.5	2.5		2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
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)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	Max	Max	Max	Max	C-Max
v/c Ratio	0.95	0.94	0.36	0.19	0.82	0.45	0.61	0.44	1.01	0.98	0.50
Control Delay	103.3	101.3	1.6	62.8	81.4	8.6	69.8	57.3	66.2	69.2	36.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	103.3	101.3	1.6	62.8	81.4	8.6	69.8	57.3	66.2	69.2	36.9
Queue Length 50th (ft)	277	284	0	28	172	0	157	126	~277	605	267
Queue Length 95th (ft)	#430	#393	25	63	#238	43	201	134	#349	#760	310
Internal Link Dist (ft)		1280			195			880			560
Turn Bay Length (ft)	255		245				220		320	440	
Base Capacity (vph)	281	291	1902	166	428	350	276	624	542	1237	1362
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.94	0.36	0.19	0.79	0.44	0.61	0.44	1.01	0.98	0.50

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 29 (19%), Referenced to phase 2:NWT, Start of Green
Natural Cycle: 130
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 22: Cumberland Pkwy/Cumberland Mall & Cumberland Blvd



Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	324	128	602	31	322	147	130	193	425	1141	555	19
Future Volume (vph)	324	128	602	31	322	147	130	193	425	1141	555	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Lane Util. Factor	0.95	0.95	0.88	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1715	1768	2842	1388	3574	1583	1805	3471	1615	3502	3578	
Flt Permitted	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1715	1768	2842	1388	3574	1583	1805	3471	1615	3502	3578	
Peak-hour factor, PHF	0.85	0.80	0.88	1.00	0.95	0.95	0.77	0.71	0.78	0.94	0.86	0.48
Adj. Flow (vph)	381	160	684	31	339	155	169	272	545	1214	645	40
RTOR Reduction (vph)	0	0	298	0	0	137	0	0	252	0	3	0
Lane Group Flow (vph)	267	274	386	31	339	18	169	272	293	1214	682	0
Heavy Vehicles (%)	0%	0%	0%	30%	1%	2%	0%	4%	0%	0%	0%	0%
Turn Type	Split	NA	pt+ov	Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	8	8	8 5	4	4		1	6		5	2	
Permitted Phases						4			6			
Actuated Green, G (s)	24.7	24.7	84.7	17.3	17.3	17.3	23.0	27.0	27.0	53.0	57.0	
Effective Green, g (s)	24.7	24.7	84.7	17.3	17.3	17.3	23.0	27.0	27.0	53.0	57.0	
Actuated g/C Ratio	0.16	0.16	0.56	0.12	0.12	0.12	0.15	0.18	0.18	0.35	0.38	
Clearance Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	282	291	1604	160	412	182	276	624	290	1237	1359	
v/s Ratio Prot	c0.16	0.15	0.14	0.02	c0.09		0.09	0.08		c0.35	0.19	
v/s Ratio Perm						0.01			c0.18			
v/c Ratio	0.95	0.94	0.24	0.19	0.82	0.10	0.61	0.44	1.01	0.98	0.50	
Uniform Delay, d1	62.0	61.9	16.5	60.0	64.9	59.4	59.3	54.7	61.5	48.0	35.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	39.0	37.3	0.1	0.6	12.5	0.2	9.8	2.2	55.7	21.5	1.3	
Delay (s)	101.0	99.2	16.5	60.6	77.3	59.6	69.1	56.9	117.2	69.5	36.9	
Level of Service	F	F	B	E	E	E	E	E	F	E	D	
Approach Delay (s)		53.4			71.1			92.3			57.8	
Approach LOS		D			E			F			E	

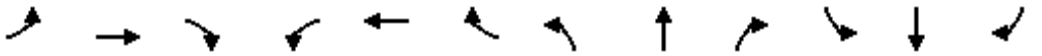
Intersection Summary			
HCM 2000 Control Delay	65.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	28.0
Intersection Capacity Utilization	85.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1366	470	482	1026	390	686
Future Volume (vph)	1366	470	482	1026	390	686
Lane Group Flow (vph)	1607	588	603	1153	424	722
Turn Type	NA	Perm	Prot	NA	Perm	Perm
Protected Phases	6		5	2		
Permitted Phases		6			8	8
Detector Phase	6	6	5	2	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	26.0	26.0	12.0	26.0	20.0	20.0
Total Split (s)	52.0	52.0	40.0	92.0	48.0	48.0
Total Split (%)	37.1%	37.1%	28.6%	65.7%	34.3%	34.3%
Yellow Time (s)	4.5	4.5	4.0	4.5	5.0	5.0
All-Red Time (s)	3.5	3.5	3.0	3.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	8.0	8.0	7.0	8.0	7.5	7.5
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	None	C-Max	None	None
v/c Ratio	0.55	0.60	0.84	0.35	0.33	0.87
Control Delay	35.8	5.5	64.5	12.7	42.8	51.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.8	5.5	64.5	12.7	42.8	51.6
Queue Length 50th (ft)	286	0	273	173	110	290
Queue Length 95th (ft)	324	28	286	216	137	364
Internal Link Dist (ft)	560			660		
Turn Bay Length (ft)		275				
Base Capacity (vph)	2943	980	825	3307	1472	928
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.60	0.73	0.35	0.29	0.78

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 23 (16%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 34: I-285 SB Entrance Ramp/I-285 SB Exit Ramp & Paces Ferry Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1366	470	482	1026	0	0	0	0	390	0	686
Future Volume (vph)	0	1366	470	482	1026	0	0	0	0	390	0	686
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.0	8.0	7.0	8.0					7.5		7.5
Lane Util. Factor		0.81	1.00	0.97	0.91					0.94		0.88
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		7695	1615	3502	5187					5090		2842
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		7695	1615	3502	5187					5090		2842
Peak-hour factor, PHF	0.25	0.85	0.80	0.80	0.89	0.25	0.25	0.25	0.25	0.92	0.25	0.95
Adj. Flow (vph)	0	1607	588	602	1153	0	0	0	0	424	0	722
RTOR Reduction (vph)	0	0	363	0	0	0	0	0	0	0	0	112
Lane Group Flow (vph)	0	1607	225	603	1153	0	0	0	0	424	0	610
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type		NA	Perm	Prot	NA					Perm		Perm
Protected Phases		6		5	2							
Permitted Phases			6							8		8
Actuated Green, G (s)		53.6	53.6	28.7	89.3					35.2		35.2
Effective Green, g (s)		53.6	53.6	28.7	89.3					35.2		35.2
Actuated g/C Ratio		0.38	0.38	0.20	0.64					0.25		0.25
Clearance Time (s)		8.0	8.0	7.0	8.0					7.5		7.5
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0		3.0
Lane Grp Cap (vph)		2946	618	717	3308					1279		714
v/s Ratio Prot		c0.21		c0.17	0.22							
v/s Ratio Perm			0.14							0.08		c0.21
v/c Ratio		0.55	0.36	0.84	0.35					0.33		0.85
Uniform Delay, d1		33.7	31.0	53.5	11.8					42.8		50.0
Progression Factor		1.00	1.00	1.00	1.00					1.00		1.00
Incremental Delay, d2		0.7	1.7	8.8	0.3					0.2		9.8
Delay (s)		34.4	32.6	62.3	12.1					42.9		59.8
Level of Service		C	C	E	B					D		E
Approach Delay (s)		33.9			29.3			0.0			53.6	
Approach LOS		C			C			A			D	

Intersection Summary			
HCM 2000 Control Delay	36.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	1	0	1	11	0	195	2	1617	1	60	605	2
Future Volume (Veh/h)	1	0	1	11	0	195	2	1617	1	60	605	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.25	0.25	0.50	0.25	0.82	0.50	0.86	0.25	0.68	0.90	0.50
Hourly flow rate (vph)	4	0	4	22	0	238	4	1880	4	88	672	4
Pedestrians								3				
Lane Width (ft)								12.0				
Walking Speed (ft/s)								3.5				
Percent Blockage								0				
Right turn flare (veh)						6						
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)								820			1045	
pX, platoon unblocked	0.64	0.64		0.64	0.64	0.64				0.64		
vC, conflicting volume	1915	2740	339	2409	2742	942	676			1884		
vC1, stage 1 conf vol	848	848		1890	1890							
vC2, stage 2 conf vol	1067	1892		519	852							
vCu, unblocked vol	1293	2591	339	2070	2594	0	676			1244		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)	6.5	5.5		6.5	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	99	80	100	66	100			76		
cM capacity (veh/h)	197	64	661	109	130	691	925			360		

Direction, Lane #	EB 1	WB 1	NE 1	NE 2	NE 3	SW 1	SW 2	SW 3	SW 4
Volume Total	8	260	4	1253	631	88	336	336	4
Volume Left	4	22	4	0	0	88	0	0	0
Volume Right	4	238	0	0	4	0	0	0	4
cSH	303	755	925	1700	1700	360	1700	1700	1700
Volume to Capacity	0.03	0.34	0.00	0.74	0.37	0.24	0.20	0.20	0.00
Queue Length 95th (ft)	2	38	0	0	0	24	0	0	0
Control Delay (s)	17.2	15.7	8.9	0.0	0.0	18.2	0.0	0.0	0.0
Lane LOS	C	C	A			C			
Approach Delay (s)	17.2	15.7	0.0			2.1			
Approach LOS	C	C							

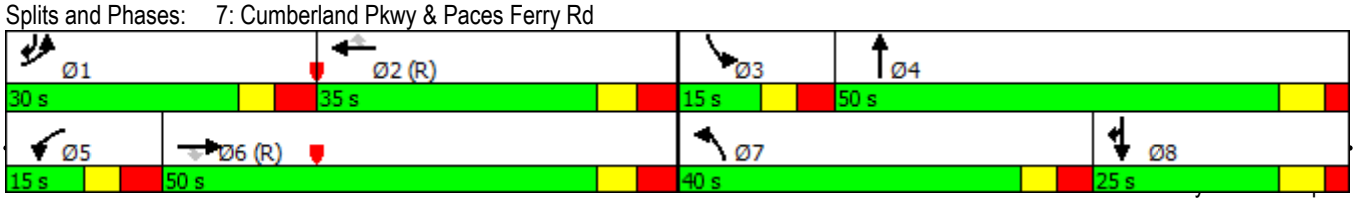
Intersection Summary				
Average Delay	2.0			
Intersection Capacity Utilization	70.1%	ICU Level of Service		C
Analysis Period (min)	15			

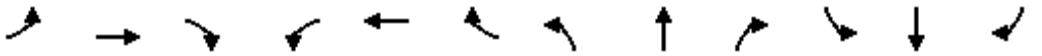
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	578	819	584	154	409	91	618	1059	75	283	176
Future Volume (vph)	578	819	584	154	409	91	618	1059	75	283	176
Lane Group Flow (vph)	642	910	664	166	454	110	792	1727	81	331	176
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA	pt+ov
Protected Phases	1	6		5	2		7	4	3	8	8 1
Permitted Phases			6			2					
Detector Phase	1	6	6	5	2	2	7	4	3	8	8 1
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)	12.5	26.0	26.0	12.5	26.0	26.0	12.0	25.0	12.0	25.0	
Total Split (s)	30.0	50.0	50.0	15.0	35.0	35.0	40.0	50.0	15.0	25.0	
Total Split (%)	23.1%	38.5%	38.5%	11.5%	26.9%	26.9%	30.8%	38.5%	11.5%	19.2%	
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0	4.0	3.5	4.5	3.5	4.5	
All-Red Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.5	2.5	3.5	2.5	
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)	7.5	8.0	8.0	7.5	8.0	8.0	7.0	7.0	7.0	7.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	None	Max	
v/c Ratio	0.78	0.78	0.49	0.85	0.40	0.20	0.92	1.02	0.74	0.71	0.16
Control Delay	59.8	45.4	3.6	94.6	45.0	0.8	64.5	67.3	95.9	61.6	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.8	45.4	3.6	94.6	45.0	0.8	64.5	67.3	95.9	61.6	5.7
Queue Length 50th (ft)	183	364	0	72	122	0	333	~547	68	155	5
Queue Length 95th (ft)	228	446	39	#137	159	0	342	#564	#153	215	33
Internal Link Dist (ft)		610			246			250		395	
Turn Bay Length (ft)	455		425	400		100			215		300
Base Capacity (vph)	880	1166	1358	196	1129	564	888	1698	111	469	1147
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.78	0.49	0.85	0.40	0.20	0.89	1.02	0.73	0.71	0.15

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 115 (88%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Cumberland Pkwy & Paces Ferry Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	578	819	584	154	409	91	618	1059	345	75	283	176
Future Volume (vph)	578	819	584	154	409	91	618	1059	345	75	283	176
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.5	8.0	8.0	7.5	8.0	8.0	7.0	7.0		7.0	7.0	7.0
Lane Util. Factor	0.94	0.95	0.88	0.97	0.91	1.00	0.97	0.91		1.00	0.86	0.86
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	0.99	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	5090	3610	2814	3400	5136	1583	3502	4964		1805	3179	2778
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	5090	3610	2814	3400	5136	1583	3502	4964		1805	3179	2778
Peak-hour factor, PHF	0.90	0.90	0.88	0.93	0.90	0.83	0.78	0.84	0.74	0.93	0.91	0.90
Adj. Flow (vph)	642	910	664	166	454	110	792	1261	466	81	311	196
RTOR Reduction (vph)	0	0	449	0	0	86	0	51	0	0	3	102
Lane Group Flow (vph)	642	910	215	166	454	24	792	1676	0	81	328	74
Heavy Vehicles (%)	0%	0%	1%	3%	1%	2%	0%	0%	1%	0%	2%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	pt+ov
Protected Phases	1	6		5	2		7	4		3	8	8 1
Permitted Phases			6			2						
Actuated Green, G (s)	20.9	42.0	42.0	7.5	28.6	28.6	31.9	43.1		7.9	19.1	47.0
Effective Green, g (s)	20.9	42.0	42.0	7.5	28.6	28.6	31.9	43.1		7.9	19.1	47.0
Actuated g/C Ratio	0.16	0.32	0.32	0.06	0.22	0.22	0.25	0.33		0.06	0.15	0.36
Clearance Time (s)	7.5	8.0	8.0	7.5	8.0	8.0	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	818	1166	909	196	1129	348	859	1645		109	467	1004
v/s Ratio Prot	c0.13	c0.25		0.05	0.09		c0.23	c0.34		0.04	0.10	0.03
v/s Ratio Perm			0.08			0.02						
v/c Ratio	0.78	0.78	0.24	0.85	0.40	0.07	0.92	1.02		0.74	0.70	0.07
Uniform Delay, d1	52.4	39.8	32.2	60.7	43.4	40.2	47.8	43.5		60.1	52.7	27.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	5.0	5.2	0.6	27.1	1.1	0.4	15.1	27.0		23.6	8.5	0.0
Delay (s)	57.4	45.0	32.9	87.8	44.5	40.5	62.9	70.4		83.7	61.3	27.3
Level of Service	E	D	C	F	D	D	E	E		F	E	C
Approach Delay (s)		45.0			53.7			68.1			54.2	
Approach LOS		D			D			E			D	

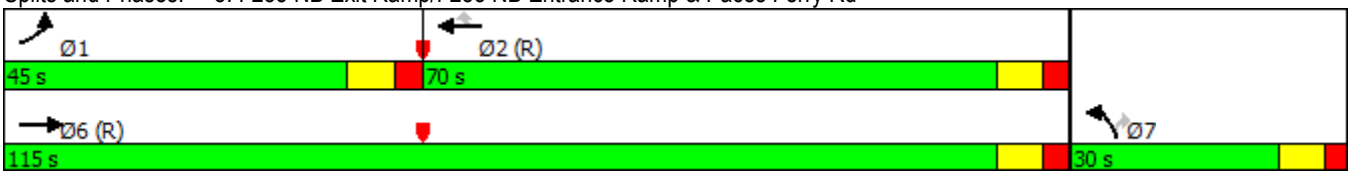
Intersection Summary			
HCM 2000 Control Delay	56.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	29.5
Intersection Capacity Utilization	83.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

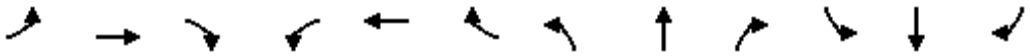
Lane Group	EBL	EBT	WBT	WBR	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	673	1808	630	565	250	265
Future Volume (vph)	673	1808	630	565	250	265
Lane Group Flow (vph)	716	1965	733	734	313	305
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	1	6	2		7	
Permitted Phases				2		7
Detector Phase	1	6	2	2	7	7
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	13.0	26.0	26.0	26.0	12.5	12.5
Total Split (s)	45.0	115.0	70.0	70.0	30.0	30.0
Total Split (%)	31.0%	79.3%	48.3%	48.3%	20.7%	20.7%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	3.0	3.0	3.0	3.0	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	8.0	8.0	8.0	8.0	7.5	7.5
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	None	None
v/c Ratio	0.88	0.49	0.20	0.42	0.72	0.69
Control Delay	65.9	7.0	22.8	2.4	70.4	49.2
Queue Delay	0.0	0.3	0.0	0.0	0.0	0.0
Total Delay	65.9	7.4	22.8	2.4	70.4	49.2
Queue Length 50th (ft)	336	224	98	0	148	107
Queue Length 95th (ft)	404	286	121	0	170	152
Internal Link Dist (ft)		660	610			
Turn Bay Length (ft)	520			320		
Base Capacity (vph)	898	3980	3682	1742	537	519
Starvation Cap Reductn	0	1203	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.71	0.20	0.42	0.58	0.59

Intersection Summary

Cycle Length: 145
Actuated Cycle Length: 145
Offset: 110 (76%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 8: I-285 NB Exit Ramp/I-285 NB Entrance Ramp & Paces Ferry Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	673	1808	0	0	630	565	250	0	265	0	0	0
Future Volume (vph)	673	1808	0	0	630	565	250	0	265	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0			8.0	8.0	7.5		7.5			
Lane Util. Factor	0.97	0.91			0.81	0.88	0.97		0.88			
Frt	1.00	1.00			1.00	0.85	1.00		0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)	3502	5187			7695	2842	3467		2814			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	3502	5187			7695	2842	3467		2814			
Peak-hour factor, PHF	0.94	0.92	0.25	0.25	0.86	0.77	0.80	0.25	0.87	0.25	0.25	0.25
Adj. Flow (vph)	716	1965	0	0	733	734	312	0	305	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	383	0	0	86	0	0	0
Lane Group Flow (vph)	716	1965	0	0	733	351	313	0	219	0	0	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	0%	1%	0%	0%	0%
Turn Type	Prot	NA			NA	Perm	Prot		Perm			
Protected Phases	1	6			2		7					
Permitted Phases						2			7			
Actuated Green, G (s)	33.9	111.3			69.4	69.4	18.2		18.2			
Effective Green, g (s)	33.9	111.3			69.4	69.4	18.2		18.2			
Actuated g/C Ratio	0.23	0.77			0.48	0.48	0.13		0.13			
Clearance Time (s)	8.0	8.0			8.0	8.0	7.5		7.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0		3.0			
Lane Grp Cap (vph)	818	3981			3682	1360	435		353			
v/s Ratio Prot	c0.20	c0.38			0.10		c0.09					
v/s Ratio Perm						0.12			0.08			
v/c Ratio	0.88	0.49			0.20	0.26	0.72		0.62			
Uniform Delay, d1	53.5	6.3			21.8	22.5	60.9		60.1			
Progression Factor	1.00	1.00			1.00	1.00	1.00		1.00			
Incremental Delay, d2	10.3	0.4			0.1	0.5	5.6		3.4			
Delay (s)	63.8	6.7			21.9	22.9	66.6		63.5			
Level of Service	E	A			C	C	E		E			
Approach Delay (s)		22.0			22.4			65.1			0.0	
Approach LOS		C			C			E			A	

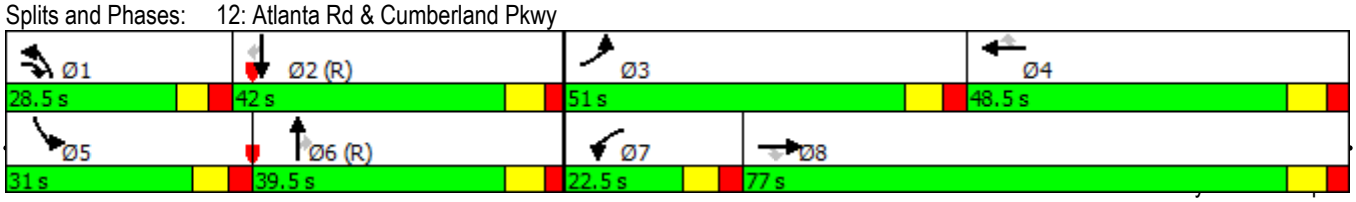
Intersection Summary			
HCM 2000 Control Delay	27.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	23.5
Intersection Capacity Utilization	71.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

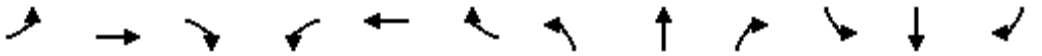
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	565	1284	1230	229	235	152	502	447	171	176	684	173
Future Volume (vph)	565	1284	1230	229	235	152	502	447	171	176	684	173
Lane Group Flow (vph)	673	1493	1268	294	276	200	570	552	238	241	705	199
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	8	1	7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Detector Phase	3	8	1	7	4	4	1	6	6	5	2	2
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)	13.0	26.0	12.5	12.5	26.0	26.0	12.5	26.0	26.0	13.0	26.0	26.0
Total Split (s)	51.0	77.0	28.5	22.5	48.5	48.5	28.5	39.5	39.5	31.0	42.0	42.0
Total Split (%)	30.0%	45.3%	16.8%	13.2%	28.5%	28.5%	16.8%	23.2%	23.2%	18.2%	24.7%	24.7%
Yellow Time (s)	5.0	5.0	4.0	4.5	5.0	5.0	4.0	5.0	5.0	4.5	5.0	5.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.5	2.5	3.0	2.5	2.5
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)	8.0	8.0	7.0	7.5	8.0	8.0	7.0	7.5	7.5	7.5	7.5	7.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
v/c Ratio	0.88	1.02	0.76	0.95	0.29	0.35	0.89	0.82	0.54	0.97	0.97	0.43
Control Delay	76.8	77.5	28.9	115.7	51.3	7.7	90.3	77.3	21.9	120.3	93.6	13.6
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	76.8	77.5	28.9	115.7	51.3	7.7	90.3	77.3	21.9	120.3	93.6	13.6
Queue Length 50th (ft)	375	~923	557	171	130	0	225	315	59	271	415	21
Queue Length 95th (ft)	401	#974	661	#209	170	29	#279	341	79	#317	#548	88
Internal Link Dist (ft)		536			1195			492			397	
Turn Bay Length (ft)	265		300	290		260	325		140	360		170
Base Capacity (vph)	868	1465	1662	309	965	578	637	672	443	249	725	461
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	1.02	0.76	0.95	0.29	0.35	0.89	0.82	0.54	0.97	0.97	0.43

Intersection Summary

Cycle Length: 170
Actuated Cycle Length: 170
Offset: 91 (54%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 12: Atlanta Rd & Cumberland Pkwy





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	565	1284	1230	229	235	152	502	447	171	176	684	173
Future Volume (vph)	565	1284	1230	229	235	152	502	447	171	176	684	173
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0	7.0	7.5	8.0	8.0	7.0	7.5	7.5	7.5	7.5	7.5
Lane Util. Factor	0.97	0.95	0.88	0.97	0.95	1.00	0.94	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3610	2814	3502	3610	1615	5040	3574	1599	1805	3574	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3610	2814	3502	3610	1615	5040	3574	1599	1805	3574	1583
Peak-hour factor, PHF	0.84	0.86	0.97	0.78	0.85	0.76	0.88	0.81	0.72	0.73	0.97	0.87
Adj. Flow (vph)	673	1493	1268	294	276	200	570	552	238	241	705	199
RTOR Reduction (vph)	0	0	36	0	0	146	0	0	143	0	0	140
Lane Group Flow (vph)	673	1493	1232	294	276	54	570	552	95	241	705	59
Heavy Vehicles (%)	2%	0%	1%	0%	0%	0%	1%	1%	1%	0%	1%	2%
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	8	1	7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	38.0	69.0	90.5	15.0	45.5	45.5	21.5	32.0	32.0	23.5	34.5	34.5
Effective Green, g (s)	38.0	69.0	90.5	15.0	45.5	45.5	21.5	32.0	32.0	23.5	34.5	34.5
Actuated g/C Ratio	0.22	0.41	0.53	0.09	0.27	0.27	0.13	0.19	0.19	0.14	0.20	0.20
Clearance Time (s)	8.0	8.0	7.0	7.5	8.0	8.0	7.0	7.5	7.5	7.5	7.5	7.5
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
Lane Grp Cap (vph)	767	1465	1498	309	966	432	637	672	300	249	725	321
v/s Ratio Prot	c0.20	c0.41	0.10	0.08	0.08		0.11	0.15		c0.13	c0.20	
v/s Ratio Perm			0.33			0.03			0.06			0.04
v/c Ratio	0.88	1.02	0.82	0.95	0.29	0.12	0.89	0.82	0.32	0.97	0.97	0.18
Uniform Delay, d1	63.8	50.5	33.1	77.1	49.4	47.2	73.1	66.3	59.6	72.9	67.3	56.1
Progression 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
Incremental Delay, d2	11.1	28.4	3.8	38.2	0.2	0.1	15.0	10.9	2.8	47.5	27.3	1.3
Delay (s)	74.8	78.9	36.8	115.3	49.5	47.3	88.2	77.1	62.3	120.4	94.6	57.3
Level of Service	E	E	D	F	D	D	F	E	E	F	F	E
Approach Delay (s)		62.6			74.1			79.2			93.6	
Approach LOS		E			E			E			F	

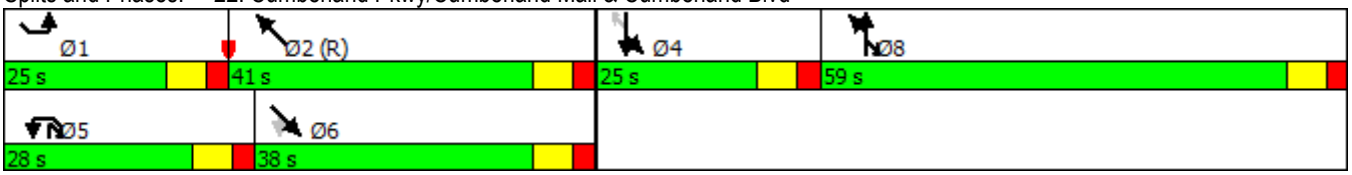
Intersection Summary			
HCM 2000 Control Delay	72.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	31.0
Intersection Capacity Utilization	95.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

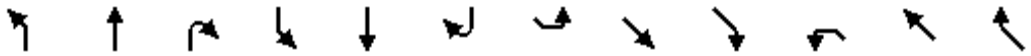
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT
Lane Configurations											
Traffic Volume (vph)	374	93	1338	2	25	13	50	497	328	320	95
Future Volume (vph)	374	93	1338	2	25	13	50	497	328	320	95
Lane Group Flow (vph)	259	268	1538	4	44	19	70	552	373	364	125
Turn Type	Split	NA	pt+ov	Split	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	8	8	8 5	4	4		1	6		5	2
Permitted Phases						4			6		
Detector Phase	8	8	8 5	4	4	4	1	6	6	5	2
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)	25.0	25.0		25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Total Split (s)	59.0	59.0		25.0	25.0	25.0	25.0	38.0	38.0	28.0	41.0
Total Split (%)	39.3%	39.3%		16.7%	16.7%	16.7%	16.7%	25.3%	25.3%	18.7%	27.3%
Yellow Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.5	2.5		2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
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)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	Max	Max	Max	Max	C-Max
v/c Ratio	0.41	0.42	0.76	0.05	0.27	0.10	0.20	0.74	0.59	0.50	0.16
Control Delay	36.5	36.6	13.2	68.0	72.3	1.0	59.7	62.6	8.8	58.8	45.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.5	36.6	13.2	68.0	72.3	1.0	59.7	62.6	8.8	58.8	45.2
Queue Length 50th (ft)	182	188	344	4	22	0	64	268	0	178	50
Queue Length 95th (ft)	267	209	417	9	27	0	90	337	81	230	72
Internal Link Dist (ft)		1280			195			880			560
Turn Bay Length (ft)	255		245				220		320	440	
Base Capacity (vph)	665	679	2033	216	401	288	342	746	629	734	798
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.39	0.76	0.02	0.11	0.07	0.20	0.74	0.59	0.50	0.16

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 17 (11%), Referenced to phase 2:NWT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 22: Cumberland Pkwy/Cumberland Mall & Cumberland Blvd





Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	374	93	1338	2	25	13	50	497	328	320	95	7
Future Volume (vph)	374	93	1338	2	25	13	50	497	328	320	95	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Lane Util. Factor	0.95	0.95	0.88	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1715	1751	2842	1805	3343	1442	1805	3610	1615	3502	3506	
Flt Permitted	0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1715	1751	2842	1805	3343	1442	1805	3610	1615	3502	3506	
Peak-hour factor, PHF	0.94	0.72	0.87	0.50	0.57	0.69	0.71	0.90	0.88	0.88	0.82	0.75
Adj. Flow (vph)	398	129	1538	4	44	19	70	552	373	364	116	9
RTOR Reduction (vph)	0	0	269	0	0	18	0	0	299	0	4	0
Lane Group Flow (vph)	259	268	1269	4	44	1	70	552	74	364	121	0
Heavy Vehicles (%)	0%	1%	0%	0%	8%	12%	0%	0%	0%	0%	2%	0%
Turn Type	Split	NA	pt+ov	Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	8	8	8 5	4	4		1	6		5	2	
Permitted Phases						4			6			
Actuated Green, G (s)	54.7	54.7	93.1	6.3	6.3	6.3	28.4	29.6	29.6	31.4	32.6	
Effective Green, g (s)	54.7	54.7	93.1	6.3	6.3	6.3	28.4	29.6	29.6	31.4	32.6	
Actuated g/C Ratio	0.36	0.36	0.62	0.04	0.04	0.04	0.19	0.20	0.20	0.21	0.22	
Clearance Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	625	638	1763	75	140	60	341	712	318	733	761	
v/s Ratio Prot	0.15	0.15	c0.45	0.00	c0.01		0.04	c0.15		0.10	c0.03	
v/s Ratio Perm						0.00			0.05			
v/c Ratio	0.41	0.42	0.72	0.05	0.31	0.01	0.21	0.78	0.23	0.50	0.16	
Uniform Delay, d1	35.7	35.7	19.5	69.0	69.8	68.9	51.3	57.0	50.6	52.3	47.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.4	0.4	1.4	0.3	1.3	0.1	1.4	8.1	1.7	2.4	0.4	
Delay (s)	36.1	36.2	20.9	69.3	71.0	69.0	52.6	65.1	52.3	54.7	48.0	
Level of Service	D	D	C	E	E	E	D	E	D	D	D	
Approach Delay (s)		24.8			70.3			59.5			53.0	
Approach LOS		C			E			E			D	

Intersection Summary			
HCM 2000 Control Delay	39.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	28.0
Intersection Capacity Utilization	82.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	187	231	1351	222	292	361
Future Volume (vph)	187	231	1351	222	292	361
Lane Group Flow (vph)	203	251	1468	241	317	392
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	4		2		1	6
Permitted Phases		4		2	6	
Detector Phase	4	4	2	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	9.5	22.5
Total Split (s)	27.0	27.0	71.0	71.0	32.0	103.0
Total Split (%)	20.8%	20.8%	54.6%	54.6%	24.6%	79.2%
Yellow Time (s)	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
Lost Time Adjust (s)	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
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	Min	Min	None	Min
v/c Ratio	0.70	0.54	0.81	0.26	0.78	0.15
Control Delay	59.7	10.3	27.0	2.8	42.9	4.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.7	10.3	27.0	2.8	42.9	4.1
Queue Length 50th (ft)	144	0	447	0	166	35
Queue Length 95th (ft)	248	75	628	41	292	55
Internal Link Dist (ft)	257		390			740
Turn Bay Length (ft)				400	250	
Base Capacity (vph)	390	545	2310	1117	537	3092
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.46	0.64	0.22	0.59	0.13

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 107.8
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 23: Cumberland Pkwy & Vinings ATL Dwy #1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	187	231	1351	222	292	361
Future Volume (vph)	187	231	1351	222	292	361
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	3539	1583	1770	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.07	1.00
Satd. Flow (perm)	1770	1583	3539	1583	124	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	203	251	1468	241	317	392
RTOR Reduction (vph)	0	210	0	116	0	0
Lane Group Flow (vph)	203	41	1468	125	317	392
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	4		2		1	6
Permitted Phases		4		2	6	
Actuated Green, G (s)	17.7	17.7	55.5	55.5	80.6	80.6
Effective Green, g (s)	17.7	17.7	55.5	55.5	80.6	80.6
Actuated g/C Ratio	0.16	0.16	0.52	0.52	0.75	0.75
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	291	261	1830	818	409	2658
v/s Ratio Prot	c0.11		0.41		c0.15	0.11
v/s Ratio Perm		0.03		0.08	c0.43	
v/c Ratio	0.70	0.16	0.80	0.15	0.78	0.15
Uniform Delay, d1	42.3	38.4	21.4	13.6	30.9	3.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.1	0.3	2.6	0.1	8.9	0.0
Delay (s)	49.4	38.7	24.0	13.7	39.8	3.8
Level of Service	D	D	C	B	D	A
Approach Delay (s)	43.5		22.5			19.9
Approach LOS	D		C			B

Intersection Summary			
HCM 2000 Control Delay	25.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	107.3	Sum of lost time (s)	13.5
Intersection Capacity Utilization	75.1%	ICU Level of Service	D
Analysis Period (min)	15		

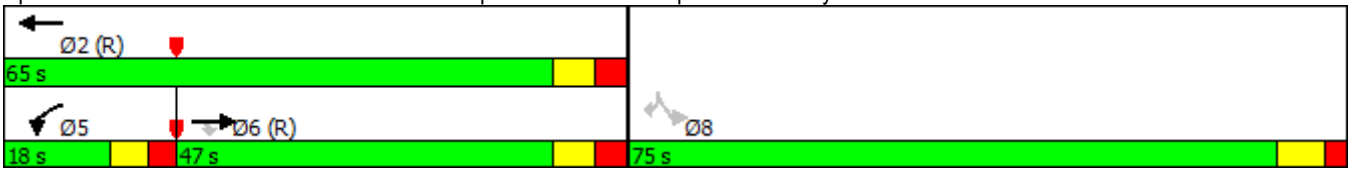
c Critical Lane Group

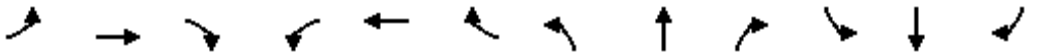
Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1619	378	232	642	884	1315
Future Volume (vph)	1619	378	232	642	884	1315
Lane Group Flow (vph)	1861	434	258	705	940	1445
Turn Type	NA	Perm	Prot	NA	Perm	Perm
Protected Phases	6		5	2		
Permitted Phases		6			8	8
Detector Phase	6	6	5	2	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	26.0	26.0	12.0	26.0	20.0	20.0
Total Split (s)	47.0	47.0	18.0	65.0	75.0	75.0
Total Split (%)	33.6%	33.6%	12.9%	46.4%	53.6%	53.6%
Yellow Time (s)	4.5	4.5	4.0	4.5	5.0	5.0
All-Red Time (s)	3.5	3.5	3.0	3.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	8.0	8.0	7.0	8.0	7.5	7.5
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	None	C-Max	None	None
v/c Ratio	0.87	0.59	0.96	0.33	0.38	0.98
Control Delay	53.4	8.7	108.9	29.0	23.6	50.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.4	8.7	108.9	29.0	23.6	50.7
Queue Length 50th (ft)	400	20	122	160	189	659
Queue Length 95th (ft)	420	98	#212	194	223	#859
Internal Link Dist (ft)	560			660		
Turn Bay Length (ft)		275				
Base Capacity (vph)	2143	736	269	2111	2454	1470
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.59	0.96	0.33	0.38	0.98

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 48 (34%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 34: I-285 SB Entrance Ramp/I-285 SB Exit Ramp & Paces Ferry Rd





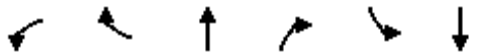
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1619	378	232	642	0	0	0	0	884	0	1315
Future Volume (vph)	0	1619	378	232	642	0	0	0	0	884	0	1315
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.0	8.0	7.0	8.0					7.5		7.5
Lane Util. Factor		0.81	1.00	0.97	0.91					0.94		0.88
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		7695	1599	3433	5187					5090		2842
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		7695	1599	3433	5187					5090		2842
Peak-hour factor, PHF	0.25	0.87	0.87	0.90	0.91	0.25	0.25	0.25	0.25	0.94	0.25	0.91
Adj. Flow (vph)	0	1861	434	258	705	0	0	0	0	940	0	1445
RTOR Reduction (vph)	0	0	291	0	0	0	0	0	0	0	0	100
Lane Group Flow (vph)	0	1861	143	258	705	0	0	0	0	940	0	1345
Heavy Vehicles (%)	0%	0%	1%	2%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type		NA	Perm	Prot	NA					Perm		Perm
Protected Phases		6		5	2							
Permitted Phases			6							8		8
Actuated Green, G (s)		39.0	39.0	11.0	57.0					67.5		67.5
Effective Green, g (s)		39.0	39.0	11.0	57.0					67.5		67.5
Actuated g/C Ratio		0.28	0.28	0.08	0.41					0.48		0.48
Clearance Time (s)		8.0	8.0	7.0	8.0					7.5		7.5
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0		3.0
Lane Grp Cap (vph)		2143	445	269	2111					2454		1370
v/s Ratio Prot		c0.24		c0.08	0.14							
v/s Ratio Perm			0.09							0.18		c0.47
v/c Ratio		0.87	0.32	0.96	0.33					0.38		0.98
Uniform Delay, d1		48.1	40.0	64.3	28.5					23.0		35.6
Progression Factor		1.00	1.00	1.00	1.00					1.00		1.00
Incremental Delay, d2		5.1	1.9	43.2	0.4					0.1		19.9
Delay (s)		53.2	41.9	107.4	28.9					23.1		55.5
Level of Service		D	D	F	C					C		E
Approach Delay (s)		51.0			49.9			0.0			42.8	
Approach LOS		D			D			A			D	

Intersection Summary			
HCM 2000 Control Delay	47.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	71.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	45	16	0	193	13	0
Future Volume (Veh/h)	45	16	0	193	13	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	49	17	0	210	14	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			66		268	58
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			66		268	58
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		98	100
cM capacity (veh/h)			1536		722	1009

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	66	210	14
Volume Left	0	0	14
Volume Right	17	0	0
cSH	1700	1536	722
Volume to Capacity	0.04	0.00	0.02
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.0	10.1
Lane LOS			B
Approach Delay (s)	0.0	0.0	10.1
Approach LOS			B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	20.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	4	1568	11	0	549
Future Volume (Veh/h)	0	4	1568	11	0	549
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	4	1704	12	0	597
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (ft)						470
pX, platoon unblocked	0.98					
vC, conflicting volume	2008	858			1716	
vC1, stage 1 conf vol	1710					
vC2, stage 2 conf vol	298					
vCu, unblocked vol	1993	858			1716	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	99			100	
cM capacity (veh/h)	127	300			365	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	4	1136	580	298	298
Volume Left	0	0	0	0	0
Volume Right	4	0	12	0	0
cSH	300	1700	1700	1700	1700
Volume to Capacity	0.01	0.67	0.34	0.18	0.18
Queue Length 95th (ft)	1	0	0	0	0
Control Delay (s)	17.2	0.0	0.0	0.0	0.0
Lane LOS	C				
Approach Delay (s)	17.2	0.0		0.0	
Approach LOS	C				

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	53.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	2	0	5	16	0	71	0	889	7	189	1806	5
Future Volume (Veh/h)	2	0	5	16	0	71	0	889	7	189	1806	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.50	0.25	0.31	0.47	0.25	0.76	0.25	0.93	0.44	0.78	0.97	0.62
Hourly flow rate (vph)	4	0	16	34	0	93	0	956	16	242	1862	8
Pedestrians								3			3	
Lane Width (ft)								12.0			12.0	
Walking Speed (ft/s)								3.5			3.5	
Percent Blockage								0			0	
Right turn flare (veh)						6						
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)								820			1045	
pX, platoon unblocked	0.53	0.53	0.47	0.53	0.53	0.88	0.47			0.88		
vC, conflicting volume	2874	3318	934	2398	3318	489	1870			972		
vC1, stage 1 conf vol	2346	2346		964	964							
vC2, stage 2 conf vol	528	972		1434	2354							
vCu, unblocked vol	1748	2580	0	858	2580	145	616			694		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)	6.5	5.5		6.5	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	89	100	97	87	100	88	100			70		
cM capacity (veh/h)	35	50	516	256	51	774	461			801		

Direction, Lane #	EB 1	WB 1	NE 1	NE 2	NE 3	SW 1	SW 2	SW 3	SW 4
Volume Total	20	127	0	637	335	242	931	931	8
Volume Left	4	34	0	0	0	242	0	0	0
Volume Right	16	93	0	0	16	0	0	0	8
cSH	139	956	1700	1700	1700	801	1700	1700	1700
Volume to Capacity	0.14	0.13	0.00	0.37	0.20	0.30	0.55	0.55	0.00
Queue Length 95th (ft)	12	11	0	0	0	32	0	0	0
Control Delay (s)	35.3	13.2	0.0	0.0	0.0	11.4	0.0	0.0	0.0
Lane LOS	E	B				B			
Approach Delay (s)	35.3	13.2	0.0			1.3			
Approach LOS	E	B							

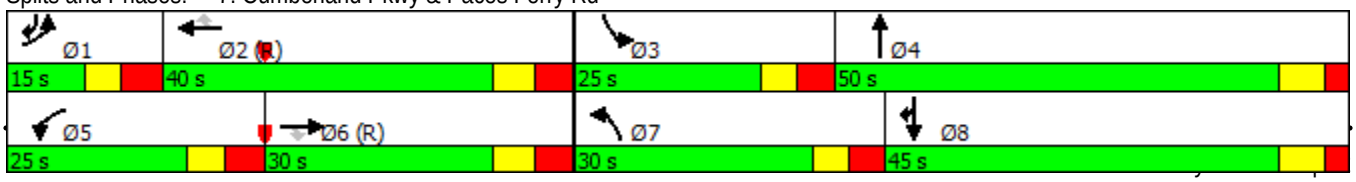
Intersection Summary				
Average Delay	1.6			
Intersection Capacity Utilization	66.6%	ICU Level of Service	C	
Analysis Period (min)	15			

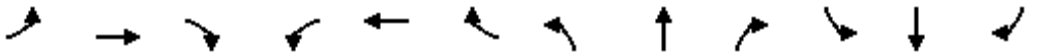
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	224	493	693	486	956	92	496	475	110	905	414
Future Volume (vph)	224	493	693	486	956	92	496	475	110	905	414
Lane Group Flow (vph)	264	519	806	528	1166	110	612	788	126	1085	510
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Prot	NA	pt+ov
Protected Phases	1	6		5	2		7	4	3	8	8 1
Permitted Phases			6			2					
Detector Phase	1	6	6	5	2	2	7	4	3	8	8 1
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)	12.5	26.0	26.0	12.5	26.0	26.0	12.0	25.0	12.0	25.0	
Total Split (s)	15.0	30.0	30.0	25.0	40.0	40.0	30.0	50.0	25.0	45.0	
Total Split (%)	11.5%	23.1%	23.1%	19.2%	30.8%	30.8%	23.1%	38.5%	19.2%	34.6%	
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0	4.0	3.5	4.5	3.5	4.5	
All-Red Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.5	2.5	3.5	2.5	
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)	7.5	8.0	8.0	7.5	8.0	8.0	7.0	7.0	7.0	7.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Max	None	Max	
v/c Ratio	0.91	0.85	0.88	1.12	0.91	0.21	0.99	0.43	0.65	1.14	0.41
Control Delay	94.8	66.6	29.2	129.3	59.3	2.7	86.7	28.6	70.8	118.2	19.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	94.8	66.6	29.2	129.3	59.3	2.7	86.7	28.6	70.8	118.2	19.1
Queue Length 50th (ft)	79	225	135	~263	352	0	268	160	103	~621	116
Queue Length 95th (ft)	#123	#312	201	#377	364	9	#324	203	160	#746	118
Internal Link Dist (ft)		610			246			250		395	
Turn Bay Length (ft)	455		425	400		100			215		300
Base Capacity (vph)	290	610	919	471	1276	514	619	1847	249	950	1229
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.85	0.88	1.12	0.91	0.21	0.99	0.43	0.51	1.14	0.41

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 13 (10%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 130
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Cumberland Pkwy & Paces Ferry Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	224	493	693	486	956	92	496	475	196	110	905	414
Future Volume (vph)	224	493	693	486	956	92	496	475	196	110	905	414
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.5	8.0	8.0	7.5	8.0	8.0	7.0	7.0		7.0	7.0	7.0
Lane Util. Factor	0.94	0.95	0.88	0.97	0.91	1.00	0.97	0.91		1.00	0.86	0.86
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95		1.00	0.99	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	5040	3610	2814	3502	5187	1615	3502	4942		1805	3242	2778
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	5040	3610	2814	3502	5187	1615	3502	4942		1805	3242	2778
Peak-hour factor, PHF	0.85	0.95	0.86	0.92	0.82	0.84	0.81	0.88	0.79	0.87	0.88	0.73
Adj. Flow (vph)	264	519	806	528	1166	110	612	540	248	126	1028	567
RTOR Reduction (vph)	0	0	444	0	0	83	0	61	0	0	3	98
Lane Group Flow (vph)	264	519	362	528	1166	27	612	727	0	126	1082	412
Heavy Vehicles (%)	1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	pt+ov
Protected Phases	1	6		5	2		7	4		3	8	8 1
Permitted Phases			6			2						
Actuated Green, G (s)	7.5	22.0	22.0	17.5	32.0	32.0	23.0	47.0		14.0	38.0	52.5
Effective Green, g (s)	7.5	22.0	22.0	17.5	32.0	32.0	23.0	47.0		14.0	38.0	52.5
Actuated g/C Ratio	0.06	0.17	0.17	0.13	0.25	0.25	0.18	0.36		0.11	0.29	0.40
Clearance Time (s)	7.5	8.0	8.0	7.5	8.0	8.0	7.0	7.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	290	610	476	471	1276	397	619	1786		194	947	1121
v/s Ratio Prot	0.05	0.14		c0.15	c0.22		c0.17	0.15		0.07	c0.33	0.15
v/s Ratio Perm			0.13			0.02						
v/c Ratio	0.91	0.85	0.76	1.12	0.91	0.07	0.99	0.41		0.65	1.14	0.37
Uniform Delay, d1	60.9	52.4	51.5	56.2	47.7	37.6	53.4	31.1		55.6	46.0	27.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	30.7	13.9	10.9	78.9	11.5	0.3	32.9	0.7		7.3	76.9	0.2
Delay (s)	91.6	66.3	62.4	135.1	59.2	37.9	86.3	31.8		62.9	122.9	27.3
Level of Service	F	E	E	F	E	D	F	C		E	F	C
Approach Delay (s)		68.6			80.1			55.6			90.2	
Approach LOS		E			F			E			F	

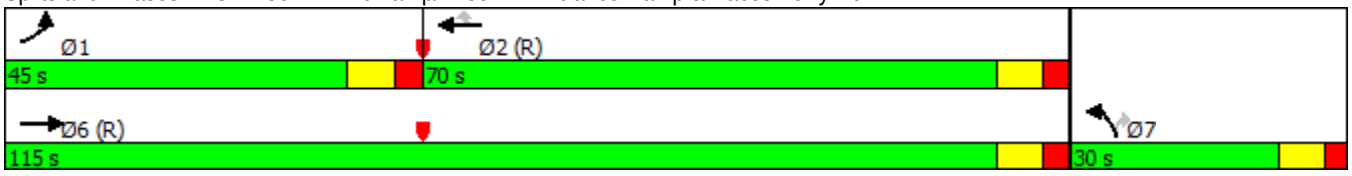
Intersection Summary			
HCM 2000 Control Delay	74.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	29.5
Intersection Capacity Utilization	93.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

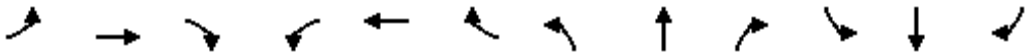
Lane Group	EBL	EBT	WBT	WBR	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	830	1081	1022	769	260	280
Future Volume (vph)	830	1081	1022	769	260	280
Lane Group Flow (vph)	976	1175	1188	915	329	359
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	1	6	2		7	
Permitted Phases				2		7
Detector Phase	1	6	2	2	7	7
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	13.0	26.0	26.0	26.0	12.5	12.5
Total Split (s)	45.0	115.0	70.0	70.0	30.0	30.0
Total Split (%)	31.0%	79.3%	48.3%	48.3%	20.7%	20.7%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	3.0	3.0	3.0	3.0	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	8.0	8.0	8.0	8.0	7.5	7.5
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	None	None
v/c Ratio	0.99	0.30	0.36	0.56	0.73	0.63
Control Delay	78.5	5.6	28.5	6.9	70.0	25.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.5	5.6	28.5	6.9	70.0	25.0
Queue Length 50th (ft)	475	109	185	59	156	61
Queue Length 95th (ft)	#606	142	200	87	176	82
Internal Link Dist (ft)		660	610			
Turn Bay Length (ft)	520			320		
Base Capacity (vph)	983	3960	3290	1634	543	635
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.99	0.30	0.36	0.56	0.61	0.57

Intersection Summary

Cycle Length: 145
Actuated Cycle Length: 145
Offset: 23 (16%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 8: I-285 NB Exit Ramp/I-285 NB Entrance Ramp & Paces Ferry Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	830	1081	0	0	1022	769	260	0	280	0	0	0
Future Volume (vph)	830	1081	0	0	1022	769	260	0	280	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0			8.0	8.0	7.5		7.5			
Lane Util. Factor	0.97	0.91			0.81	0.88	0.97		0.88			
Frt	1.00	1.00			1.00	0.85	1.00		0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)	3502	5187			7695	2842	3502		2814			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	3502	5187			7695	2842	3502		2814			
Peak-hour factor, PHF	0.85	0.92	0.25	0.25	0.86	0.84	0.79	0.25	0.78	0.25	0.25	0.25
Adj. Flow (vph)	976	1175	0	0	1188	915	329	0	359	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	419	0	0	205	0	0	0
Lane Group Flow (vph)	976	1175	0	0	1188	496	329	0	154	0	0	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%
Turn Type	Prot	NA			NA	Perm	Prot		Perm			
Protected Phases	1	6			2		7					
Permitted Phases						2			7			
Actuated Green, G (s)	40.7	110.7			62.0	62.0	18.8		18.8			
Effective Green, g (s)	40.7	110.7			62.0	62.0	18.8		18.8			
Actuated g/C Ratio	0.28	0.76			0.43	0.43	0.13		0.13			
Clearance Time (s)	8.0	8.0			8.0	8.0	7.5		7.5			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0		3.0			
Lane Grp Cap (vph)	982	3960			3290	1215	454		364			
v/s Ratio Prot	c0.28	0.23			0.15		c0.09					
v/s Ratio Perm						c0.17			0.05			
v/c Ratio	0.99	0.30			0.36	0.41	0.72		0.42			
Uniform Delay, d1	52.0	5.2			28.1	28.8	60.6		58.1			
Progression Factor	1.00	1.00			1.00	1.00	1.00		1.00			
Incremental Delay, d2	27.1	0.2			0.3	1.0	5.7		0.8			
Delay (s)	79.1	5.4			28.4	29.8	66.3		58.9			
Level of Service	E	A			C	C	E		E			
Approach Delay (s)		38.9			29.0			62.4			0.0	
Approach LOS		D			C			E			A	

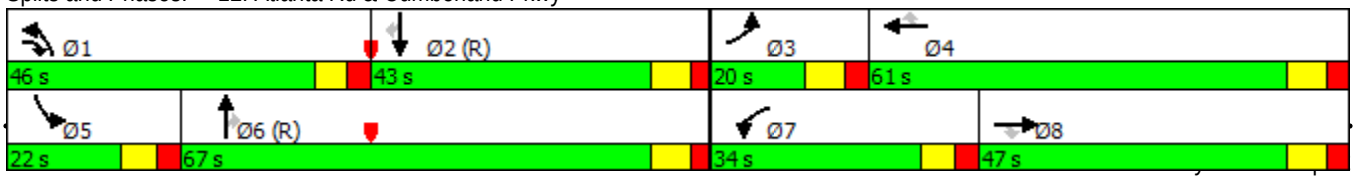
Intersection Summary			
HCM 2000 Control Delay	37.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	23.5
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

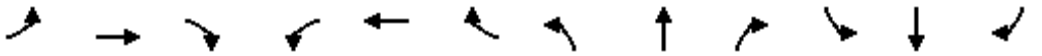
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	218	400	497	346	1083	151	1120	959	167	100	676	318
Future Volume (vph)	218	400	497	346	1083	151	1120	959	167	100	676	318
Lane Group Flow (vph)	237	444	565	384	1165	219	1191	1009	194	120	751	361
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	8	1	7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Detector Phase	3	8	1	7	4	4	1	6	6	5	2	2
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)	13.0	26.0	12.5	12.5	26.0	26.0	12.5	26.0	26.0	13.0	26.0	26.0
Total Split (s)	20.0	47.0	46.0	34.0	61.0	61.0	46.0	67.0	67.0	22.0	43.0	43.0
Total Split (%)	11.8%	27.6%	27.1%	20.0%	35.9%	35.9%	27.1%	39.4%	39.4%	12.9%	25.3%	25.3%
Yellow Time (s)	5.0	5.0	4.0	4.5	5.0	5.0	4.0	5.0	5.0	4.5	5.0	5.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.5	2.5	3.0	2.5	2.5
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)	8.0	8.0	7.0	7.5	8.0	8.0	7.0	7.5	7.5	7.5	7.5	7.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
v/c Ratio	0.98	0.49	0.37	0.80	1.04	0.35	1.03	0.80	0.28	0.82	1.01	0.71
Control Delay	129.4	57.5	18.9	84.3	92.3	12.3	97.1	55.4	7.2	114.1	100.1	31.3
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	129.4	57.5	18.9	84.3	92.3	12.3	97.1	55.4	7.2	114.1	100.1	31.3
Queue Length 50th (ft)	138	226	158	216	~731	37	~501	537	10	133	~450	145
Queue Length 95th (ft)	#235	292	207	273	#872	44	#596	626	59	#210	#593	259
Internal Link Dist (ft)		536			1195			492			397	
Turn Bay Length (ft)	265		300	290		260	325		140	360		170
Base Capacity (vph)	242	897	1538	545	1125	622	1156	1264	681	153	746	508
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.98	0.49	0.37	0.70	1.04	0.35	1.03	0.80	0.28	0.78	1.01	0.71

Intersection Summary

Cycle Length: 170
Actuated Cycle Length: 170
Offset: 87 (51%), Referenced to phase 2:SBT and 6:NBT, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 12: Atlanta Rd & Cumberland Pkwy





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	218	400	497	346	1083	151	1120	959	167	100	676	318
Future Volume (vph)	218	400	497	346	1083	151	1120	959	167	100	676	318
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	8.0	7.0	7.5	8.0	8.0	7.0	7.5	7.5	7.5	7.5	7.5
Lane Util. Factor	0.97	0.95	0.88	0.97	0.95	1.00	0.94	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3610	2814	3502	3610	1615	5040	3574	1599	1805	3574	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3610	2814	3502	3610	1615	5040	3574	1599	1805	3574	1583
Peak-hour factor, PHF	0.92	0.90	0.88	0.90	0.93	0.69	0.94	0.95	0.86	0.83	0.90	0.88
Adj. Flow (vph)	237	444	565	384	1165	219	1191	1009	194	120	751	361
RTOR Reduction (vph)	0	0	67	0	0	119	0	0	116	0	0	178
Lane Group Flow (vph)	237	444	498	384	1165	100	1191	1009	78	120	751	183
Heavy Vehicles (%)	2%	0%	1%	0%	0%	0%	1%	1%	1%	0%	1%	2%
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	8	1	7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	12.0	42.3	81.3	23.2	53.0	53.0	39.0	60.1	60.1	13.9	35.5	35.5
Effective Green, g (s)	12.0	42.3	81.3	23.2	53.0	53.0	39.0	60.1	60.1	13.9	35.5	35.5
Actuated g/C Ratio	0.07	0.25	0.48	0.14	0.31	0.31	0.23	0.35	0.35	0.08	0.21	0.21
Clearance Time (s)	8.0	8.0	7.0	7.5	8.0	8.0	7.0	7.5	7.5	7.5	7.5	7.5
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
Lane Grp Cap (vph)	242	898	1345	477	1125	503	1156	1263	565	147	746	330
v/s Ratio Prot	0.07	0.12	0.08	c0.11	c0.32		c0.24	0.28		0.07	c0.21	
v/s Ratio Perm			0.09			0.06			0.05			0.12
v/c Ratio	0.98	0.49	0.37	0.81	1.04	0.20	1.03	0.80	0.14	0.82	1.01	0.55
Uniform Delay, d1	78.9	54.7	28.1	71.2	58.5	42.9	65.5	49.5	37.3	76.8	67.2	60.2
Progression 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
Incremental Delay, d2	51.4	0.4	0.2	9.6	36.5	0.2	34.5	5.3	0.5	28.2	34.6	6.6
Delay (s)	130.3	55.1	28.3	80.8	95.0	43.1	100.0	54.9	37.8	105.0	101.9	66.7
Level of Service	F	E	C	F	F	D	F	D	D	F	F	E
Approach Delay (s)		57.3			85.4			75.9			91.9	
Approach LOS		E			F			E			F	

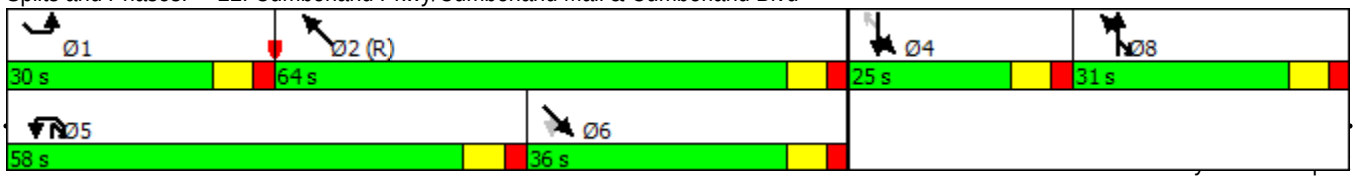
Intersection Summary			
HCM 2000 Control Delay	77.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	31.0
Intersection Capacity Utilization	101.6%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

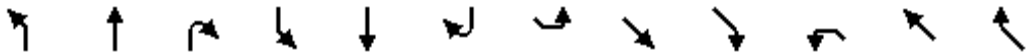
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT
Lane Configurations											
Traffic Volume (vph)	359	128	636	31	322	147	130	193	455	1171	555
Future Volume (vph)	359	128	636	31	322	147	130	193	455	1171	555
Lane Group Flow (vph)	287	295	723	31	339	155	169	272	583	1246	685
Turn Type	Split	NA	pt+ov	Split	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	8	8	8 5	4	4		1	6		5	2
Permitted Phases						4			6		
Detector Phase	8	8	8 5	4	4	4	1	6	6	5	2
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)	25.0	25.0		25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Total Split (s)	31.0	31.0		25.0	25.0	25.0	30.0	36.0	36.0	58.0	64.0
Total Split (%)	20.7%	20.7%		16.7%	16.7%	16.7%	20.0%	24.0%	24.0%	38.7%	42.7%
Yellow Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.5	2.5		2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
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)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None	None	Max	Max	Max	Max	C-Max
v/c Ratio	1.02	1.02	0.38	0.19	0.82	0.45	0.61	0.41	1.03	1.05	0.50
Control Delay	119.1	118.1	1.9	62.8	81.4	8.6	69.8	55.1	73.5	86.7	36.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	119.1	118.1	1.9	62.8	81.4	8.6	69.8	55.1	73.5	86.7	36.9
Queue Length 50th (ft)	~320	~328	4	28	172	0	157	124	~347	~680	267
Queue Length 95th (ft)	#475	#436	31	63	#238	43	201	132	#397	#817	310
Internal Link Dist (ft)		1280			195			880			560
Turn Bay Length (ft)	255		245				220		320	440	
Base Capacity (vph)	281	290	1882	166	428	350	276	671	564	1190	1362
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.02	1.02	0.38	0.19	0.79	0.44	0.61	0.41	1.03	1.05	0.50

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 29 (19%), Referenced to phase 2:NWT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 22: Cumberland Pkwy/Cumberland Mall & Cumberland Blvd





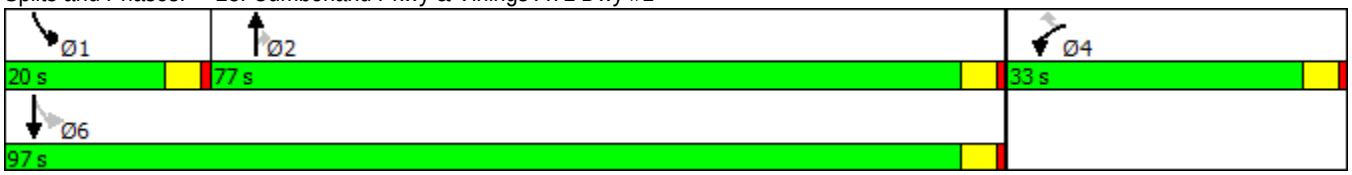
Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	359	128	636	31	322	147	130	193	455	1171	555	19
Future Volume (vph)	359	128	636	31	322	147	130	193	455	1171	555	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Lane Util. Factor	0.95	0.95	0.88	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1715	1765	2842	1388	3574	1583	1805	3471	1615	3502	3578	
Flt Permitted	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1715	1765	2842	1388	3574	1583	1805	3471	1615	3502	3578	
Peak-hour factor, PHF	0.85	0.80	0.88	1.00	0.95	0.95	0.77	0.71	0.78	0.94	0.86	0.48
Adj. Flow (vph)	422	160	723	31	339	155	169	272	583	1246	645	40
RTOR Reduction (vph)	0	0	316	0	0	137	0	0	252	0	3	0
Lane Group Flow (vph)	287	295	407	31	339	18	169	272	331	1246	682	0
Heavy Vehicles (%)	0%	0%	0%	30%	1%	2%	0%	4%	0%	0%	0%	0%
Turn Type	Split	NA	pt+ov	Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	8	8	8 5	4	4		1	6		5	2	
Permitted Phases						4			6			
Actuated Green, G (s)	24.7	24.7	82.7	17.3	17.3	17.3	23.0	29.0	29.0	51.0	57.0	
Effective Green, g (s)	24.7	24.7	82.7	17.3	17.3	17.3	23.0	29.0	29.0	51.0	57.0	
Actuated g/C Ratio	0.16	0.16	0.55	0.12	0.12	0.12	0.15	0.19	0.19	0.34	0.38	
Clearance Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	282	290	1566	160	412	182	276	671	312	1190	1359	
v/s Ratio Prot	c0.17	0.17	0.14	0.02	c0.09		0.09	0.08		c0.36	0.19	
v/s Ratio Perm						0.01			c0.20			
v/c Ratio	1.02	1.02	0.26	0.19	0.82	0.10	0.61	0.41	1.06	1.05	0.50	
Uniform Delay, d1	62.6	62.6	17.6	60.0	64.9	59.4	59.3	53.0	60.5	49.5	35.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	58.2	57.3	0.1	0.6	12.5	0.2	9.8	1.8	67.5	39.3	1.3	
Delay (s)	120.9	120.0	17.7	60.6	77.3	59.6	69.1	54.8	128.0	88.8	36.9	
Level of Service	F	F	B	E	E	E	E	D	F	F	D	
Approach Delay (s)		63.5			71.1			98.8			70.4	
Approach LOS		E			E			F			E	

Intersection Summary			
HCM 2000 Control Delay	74.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	28.0
Intersection Capacity Utilization	88.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	185	228	670	155	204	1589
Future Volume (vph)	185	228	670	155	204	1589
Lane Group Flow (vph)	201	248	728	168	222	1727
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	4		2		1	6
Permitted Phases		4		2	6	
Detector Phase	4	4	2	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	9.5	22.5
Total Split (s)	33.0	33.0	77.0	77.0	20.0	97.0
Total Split (%)	25.4%	25.4%	59.2%	59.2%	15.4%	74.6%
Yellow Time (s)	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
Lost Time Adjust (s)	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
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	Min	Min	None	Min
v/c Ratio	0.57	0.48	0.43	0.20	0.43	0.73
Control Delay	37.4	8.1	13.8	2.7	7.5	10.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.4	8.1	13.8	2.7	7.5	10.1
Queue Length 50th (ft)	81	0	104	0	31	213
Queue Length 95th (ft)	200	64	192	31	74	404
Internal Link Dist (ft)	257		390			740
Turn Bay Length (ft)				400	250	
Base Capacity (vph)	725	794	3197	1446	627	3433
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.31	0.23	0.12	0.35	0.50

Intersection Summary
Cycle Length: 130
Actuated Cycle Length: 75
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 23: Cumberland Pkwy & Vinings ATL Dwy #1



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	185	228	670	155	204	1589
Future Volume (vph)	185	228	670	155	204	1589
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1583	3539	1583	1770	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.28	1.00
Satd. Flow (perm)	1770	1583	3539	1583	519	3539
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	201	248	728	168	222	1727
RTOR Reduction (vph)	0	198	0	87	0	0
Lane Group Flow (vph)	201	50	728	81	222	1727
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	4		2		1	6
Permitted Phases		4		2	6	
Actuated Green, G (s)	15.0	15.0	36.0	36.0	50.4	50.4
Effective Green, g (s)	15.0	15.0	36.0	36.0	50.4	50.4
Actuated g/C Ratio	0.20	0.20	0.48	0.48	0.68	0.68
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	356	319	1712	765	518	2397
v/s Ratio Prot	c0.11		0.21		0.06	c0.49
v/s Ratio Perm		0.03		0.05	0.23	
v/c Ratio	0.56	0.16	0.43	0.11	0.43	0.72
Uniform Delay, d1	26.8	24.5	12.5	10.4	5.5	7.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.1	0.2	0.2	0.1	0.6	1.1
Delay (s)	28.8	24.7	12.6	10.5	6.1	8.7
Level of Service	C	C	B	B	A	A
Approach Delay (s)	26.5		12.2			8.4
Approach LOS	C		B			A

Intersection Summary			
HCM 2000 Control Delay	11.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	74.4	Sum of lost time (s)	13.5
Intersection Capacity Utilization	61.7%	ICU Level of Service	B
Analysis Period (min)	15		

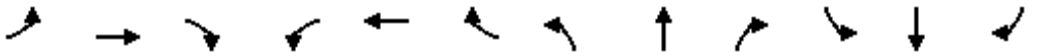
c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1366	470	482	1026	534	686
Future Volume (vph)	1366	470	482	1026	534	686
Lane Group Flow (vph)	1607	588	603	1153	580	722
Turn Type	NA	Perm	Prot	NA	Perm	Perm
Protected Phases	6		5	2		
Permitted Phases		6			8	8
Detector Phase	6	6	5	2	8	8
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	26.0	26.0	12.0	26.0	20.0	20.0
Total Split (s)	50.0	50.0	40.0	90.0	50.0	50.0
Total Split (%)	35.7%	35.7%	28.6%	64.3%	35.7%	35.7%
Yellow Time (s)	4.5	4.5	4.0	4.5	5.0	5.0
All-Red Time (s)	3.5	3.5	3.0	3.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	8.0	8.0	7.0	8.0	7.5	7.5
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	None	C-Max	None	None
v/c Ratio	0.56	0.60	0.84	0.35	0.44	0.86
Control Delay	36.8	5.7	64.5	13.3	43.8	50.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.8	5.7	64.5	13.3	43.8	50.2
Queue Length 50th (ft)	288	0	273	175	156	294
Queue Length 95th (ft)	331	29	286	224	183	361
Internal Link Dist (ft)	560			660		
Turn Bay Length (ft)		275				
Base Capacity (vph)	2884	973	825	3267	1545	960
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.60	0.73	0.35	0.38	0.75

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 23 (16%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 34: I-285 SB Entrance Ramp/I-285 SB Exit Ramp & Paces Ferry Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1366	470	482	1026	0	0	0	0	534	0	686
Future Volume (vph)	0	1366	470	482	1026	0	0	0	0	534	0	686
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.0	8.0	7.0	8.0					7.5		7.5
Lane Util. Factor		0.81	1.00	0.97	0.91					0.94		0.88
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		7695	1615	3502	5187					5090		2842
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		7695	1615	3502	5187					5090		2842
Peak-hour factor, PHF	0.25	0.85	0.80	0.80	0.89	0.25	0.25	0.25	0.25	0.92	0.25	0.95
Adj. Flow (vph)	0	1607	588	602	1153	0	0	0	0	580	0	722
RTOR Reduction (vph)	0	0	368	0	0	0	0	0	0	0	0	104
Lane Group Flow (vph)	0	1607	221	603	1153	0	0	0	0	580	0	618
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type		NA	Perm	Prot	NA					Perm		Perm
Protected Phases		6		5	2							
Permitted Phases			6							8		8
Actuated Green, G (s)		52.5	52.5	28.7	88.2					36.3		36.3
Effective Green, g (s)		52.5	52.5	28.7	88.2					36.3		36.3
Actuated g/C Ratio		0.38	0.38	0.20	0.63					0.26		0.26
Clearance Time (s)		8.0	8.0	7.0	8.0					7.5		7.5
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0		3.0
Lane Grp Cap (vph)		2885	605	717	3267					1319		736
v/s Ratio Prot		c0.21		c0.17	0.22							
v/s Ratio Perm			0.14							0.11		c0.22
v/c Ratio		0.56	0.36	0.84	0.35					0.44		0.84
Uniform Delay, d1		34.6	31.7	53.5	12.3					43.3		49.1
Progression Factor		1.00	1.00	1.00	1.00					1.00		1.00
Incremental Delay, d2		0.8	1.7	8.8	0.3					0.2		8.5
Delay (s)		35.3	33.4	62.3	12.6					43.6		57.6
Level of Service		D	C	E	B					D		E
Approach Delay (s)		34.8			29.7			0.0			51.4	
Approach LOS		C			C			A			D	

Intersection Summary			
HCM 2000 Control Delay	37.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	186	11	0	74	13	0
Future Volume (Veh/h)	186	11	0	74	13	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	202	12	0	80	14	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			214		288	208
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			214		288	208
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		98	100
cM capacity (veh/h)			1356		702	832

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	214	80	14
Volume Left	0	0	14
Volume Right	12	0	0
cSH	1700	1356	702
Volume to Capacity	0.13	0.00	0.02
Queue Length 95th (ft)	0	0	2
Control Delay (s)	0.0	0.0	10.2
Lane LOS			B
Approach Delay (s)	0.0	0.0	10.2
Approach LOS			B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	20.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	4	821	8	0	1774
Future Volume (Veh/h)	0	4	821	8	0	1774
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	4	892	9	0	1928
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (ft)						470
pX, platoon unblocked	0.65					
vC, conflicting volume	1860	450			901	
vC1, stage 1 conf vol	896					
vC2, stage 2 conf vol	964					
vCu, unblocked vol	1252	450			901	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	99			100	
cM capacity (veh/h)	320	556			750	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	4	595	306	964	964
Volume Left	0	0	0	0	0
Volume Right	4	0	9	0	0
cSH	556	1700	1700	1700	1700
Volume to Capacity	0.01	0.35	0.18	0.57	0.57
Queue Length 95th (ft)	1	0	0	0	0
Control Delay (s)	11.5	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	11.5	0.0		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	52.4%	ICU Level of Service	A
Analysis Period (min)	15		