MEMORANDUM

TO:	Devin Doyle, NDOT
FROM:	Brandon Taylor, KCI Technologies, Inc.
DATE:	September 1, 2022
SUBJECT:	Houston Street - One-Way Traffic Analysis KCI Job Order No. 892006365

The purpose of this memo is to evaluate the traffic and safety impacts associated with a proposed modification of traffic operations on Houston Street in the Wedgewood-Houston area of Nashville, Tennessee. Specifically, the proposed project would convert Houston Street from two-way traffic to one-way traffic in the eastbound direction between Martin Street and 4th Avenue South. This memo will include capacity analysis to evaluate traffic operations, along with a geometric and safety evaluation with respect to all modes of traffic.

Capacity / Level of Service Analysis

In order to provide data for the analysis, projected traffic volumes were obtained from recent traffic impact studies associated with proposed developments in the area. The following intersections were analyzed:

1. Martin Street and Houston Street (unsignalized)
2. Houston Street and Brown Street (unsignalized)
3. Houston Street and Pillow Street (unsignalized)
4. 4th Avenue South and Houston Street (unsignalized)
5. Martin Street and Humphreys Avenue (unsignalized)
6. Houston Street and Brown Street (unsignalized)
7. Houston Street and Pillow Street (unsignalized)
8. 4th Avenue South and Houston Street (unsignalized)

To determine the projected operation of the study intersections, capacity analyses were performed for the AM and PM peak hours. The capacity calculations were performed according to the methods outlined in the *Highway Capacity Manual*, 6th Edition. The capacity analyses result in the determination of a Level of Service (LOS) for an intersection. The LOS is a concept used to describe how well an intersection or roadway operates. LOS A is the best, while LOS F is the worst. LOS D is typically considered as the minimum acceptable LOS for an intersection in an urbanized area. For

stop-controlled intersections, a LOS is presented for each critical turning movement. For signalized intersections, a LOS is presented for the overall intersection. Table 1 presents the descriptions of LOS for unsignalized intersections.

TABLE 1. DESCRIPTIONS OF LEVEL OF SERVICE

LEVEL OF SERVICE	DESCRIPTION	UNSIGNALIZED CONTROL DELAY (sec/veh)
A	Little or no delay	≤ 10.0
B	Short traffic delay	>10 and ≤ 15
C	Average traffic delay	>15 and ≤ 25
D	Long traffic delay	>25 and ≤ 35
E	Very long traffic delay	>35 and ≤ 50
F	Extreme traffic delay	> 50.0

Source: *Highway Capacity Manual*, 6th Edition

Two separate scenarios were analyzed utilizing the projected traffic volumes. Scenario #1 includes the existing two-way traffic configuration on Houston Street, and Scenario #2 includes one-way eastbound traffic exclusively on Houston Street between Martin Street to 4th Avenue South. The projected traffic volumes are presented in the attached figures at the end of the memo. Figure 1 shows the projected traffic volumes under Scenario #1. Figure 2 shows the re-assignment of traffic volumes resulting from the conversion to one-way traffic operations. Figure 3 shows the projected traffic volumes under Scenario #2.

The results of the capacity analyses at the study area intersections under both scenarios are presented in Tables 2A and 2B. As shown, under Scenario #2 conditions the results of the capacity analyses indicate that all critical movements at the study intersection will operate at LOS D or better or continue to operate at the same levels of service as Scenario #1 conditions with the following exception:

Martin Street and Humphreys Street

- The westbound approach is expected to deteriorate from LOS C to LOS E during the PM peak hour after the conversion from two-way to one-way traffic operations.

Capacity analyses worksheets are attached at the end of the memo.

TABLE 2A. PROJECTED AM PEAK HOUR LEVELS OF SERVICE

INTERSECTION	TURNING MOVEMENT	LEVEL OF SERVICE (Average Delay in sec/veh)	
		SCENARIO #1 (TWO-WAY)	SCENARIO #2 (ONE-WAY)
Martin Street and Houston Street	Southbound Left-Turn	A (7.7)	A (7.9)
	Westbound Approach	B (10.1)	--
Houston Street and Brown Street	Northbound Approach	A (9.1)	A (8.8)
	Southbound Approach	A (9.0)	A (9.4)
	Eastbound Left-Turn	A (0.0)	--
	Westbound Left-Turn	A (7.3)	--
Houston Street and Pillow Street	Northbound Approach	A (8.7)	A (8.5)
	Westbound Left-Turn	A (7.3)	--
4th Avenue South and Houston Street	Eastbound Approach	C (19.9)	C (20.1)
Martin Street and Humphreys Street	Northbound Approach	A (9.9)	B (10.3)
	Southbound Approach	A (9.6)	A (9.9)
	Eastbound Approach	A (9.2)	A (9.4)
	Westbound Approach	A (9.4)	B (10.2)

INTERSECTION	TURNING MOVEMENT	LEVEL OF SERVICE (Average Delay in sec/veh)	
		SCENARIO #1 (TWO-WAY)	SCENARIO #2 (ONE-WAY)
Humphreys Street and Brown Street	Northbound Approach	B (11.3)	B (11.4)
	Southbound Approach	B (13.9)	B (13.1)
	Eastbound Left-Turn	A (7.6)	A (7.7)
	Westbound Left-Turn	A (7.8)	A (7.8)
Humphreys Street and Pillow Street	Northbound Approach	B (12.5)	B (12.4)
	Southbound Approach	B (10.1)	A (9.3)
	Eastbound Left-Turn	A (7.7)	A (7.7)
	Westbound Left-Turn	A (7.8)	A (7.8)
4th Avenue South and Humphreys Street	Eastbound Approach	C (18.1)	C (18.3)

TABLE 2B. PROJECTED PM PEAK HOUR LEVELS OF SERVICE

INTERSECTION	TURNING MOVEMENT	LEVEL OF SERVICE (Average Delay in sec/veh)	
		SCENARIO #1 (TWO-WAY)	SCENARIO #2 (ONE-WAY)
Martin Street and Houston Street	Southbound Left-Turn	A (8.7)	A (9.3)
	Westbound Approach	C (16.7)	--
Houston Street and Brown Street	Northbound Approach	B (10.9)	A (8.9)
	Southbound Approach	A (8.6)	B (10.1)
	Eastbound Left-Turn	A (7.3)	--
	Westbound Left-Turn	A (7.6)	--
Houston Street and Pillow Street	Northbound Approach	A (8.9)	A (8.5)
	Westbound Left-Turn	A (7.3)	--
4th Avenue South and Houston Street	Eastbound Approach	F (61.9)	F (66.2)
Martin Street and Humphreys Street	Northbound Approach	C (23.1)	D (33.7)
	Southbound Approach	B (13.3)	B (14.7)
	Eastbound Approach	B (14.3)	C (16.7)
	Westbound Approach	C (15.4)	E (41.1)

INTERSECTION	TURNING MOVEMENT	LEVEL OF SERVICE (Average Delay in sec/veh)	
		SCENARIO #1 (TWO-WAY)	SCENARIO #2 (ONE-WAY)
Humphreys Street and Brown Street	Northbound Approach	B (14.5)	C (16.4)
	Southbound Approach	C (22.2)	D (27.2)
	Eastbound Left-Turn	A (8.0)	A (8.2)
	Westbound Left-Turn	A (7.9)	A (7.9)
Humphreys Street and Pillow Street	Northbound Approach	C (15.3)	C (16.4)
	Southbound Approach	B (13.8)	C (15.1)
	Eastbound Left-Turn	A (8.1)	A (8.2)
	Westbound Left-Turn	A (8.1)	A (8.1)
4th Avenue South and Humphreys Street	Eastbound Approach	F (199.9)	F (227.7)

Geometric / Safety Implications

Houston Street is currently a two-way roadway with intermittent on-street parking on both sides of the road between Martin Street and 4th Avenue South. Based on the conversion of this roadway to one-way operation detailed in this memo, traffic will be expected to flow in a single lane from west to east within the project limits. Below are the safety benefits for both vehicles and pedestrians with this conversion.

- With the conversion to a single lane one-way roadway, there will be added space along the roadway to include proper parallel parking zones, loading zones and valet zones which will help declutter the roadway so that sight distances for pedestrians crossing at mid-block locations are better. This will also help to eliminate the movement of vehicles going around stopped vehicles by going the wrong way in the incoming lane.

- The new expanded roadway area outside of the single travel lane and parking areas can be used for potential landscaping and park-let areas within the roadway. The location and size of these areas can be developed to help as traffic calming features for vehicles on this road. This traffic calming will help to slow vehicle speeds along the project limits

- The landscape zones will also help to provide buffers for the pedestrians on the sidewalk and at pedestrian crossings and allow the pedestrian crossings to be shorter as the curb ramps can be pulled further into the roadway within the landscaping zones. It is expected that curb bulb-outs will be implemented at the intersections with Houston Street and Martin Street, Brown Street, and Pillow Street. The curb bulb outs allow better sight lines between pedestrians crossing the road and vehicles on the road.

- The reduction in travel lanes will also help to allow future expansion of sidewalks within the project limits.

- The intersection of Houston Street with 4th Avenue South has long been an unusual and hazardous intersection. This is due to sight distance issues, an active railroad crossing and the intersection of Hart Street nearby. The conversion of Houston to one-way will prohibit vehicles from turning right from 4th Avenue South to Houston Street which has grade and sight distance issues. The conversion will prohibit the crossover vehicle movement from Hart Street to Houston Street which is a hazardous movement due to grade issues and the railroad crossing. The reduction of vehicle movements at this intersection will allow for future studies to potentially implement a pedestrian crossing across 4th Avenue South at this location.

- The conversion to a one-way facility will reduce the number of conflict points between vehicles on vehicles and vehicles on pedestrians at each intersection. This reduction is due to vehicles approaching the intersection from only one direction as compared to two directions. Vehicles and pedestrians entering or crossing Houston Street will only need to look for vehicles coming from one direction.

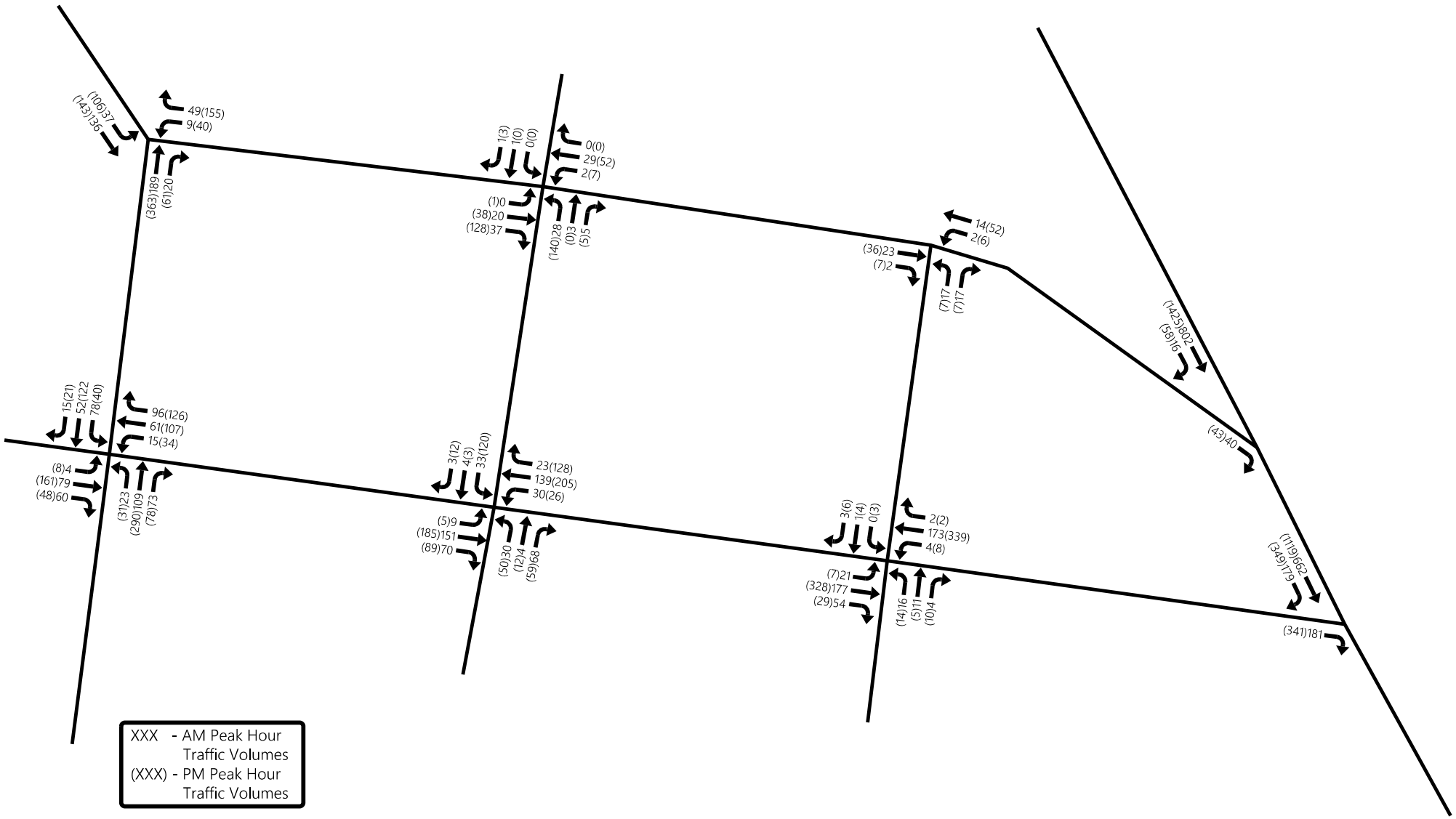
Recommendations

Based on the analyses presented in the memo which indicate that the safety benefits for vehicles and pedestrians are significant as compared to the minor loss of capacity shown in the analysis, it is recommended that Houston Street be converted from two-way to one-way traffic operations between Martin Street and 4th Avenue South.

BT/ts

Attachments:

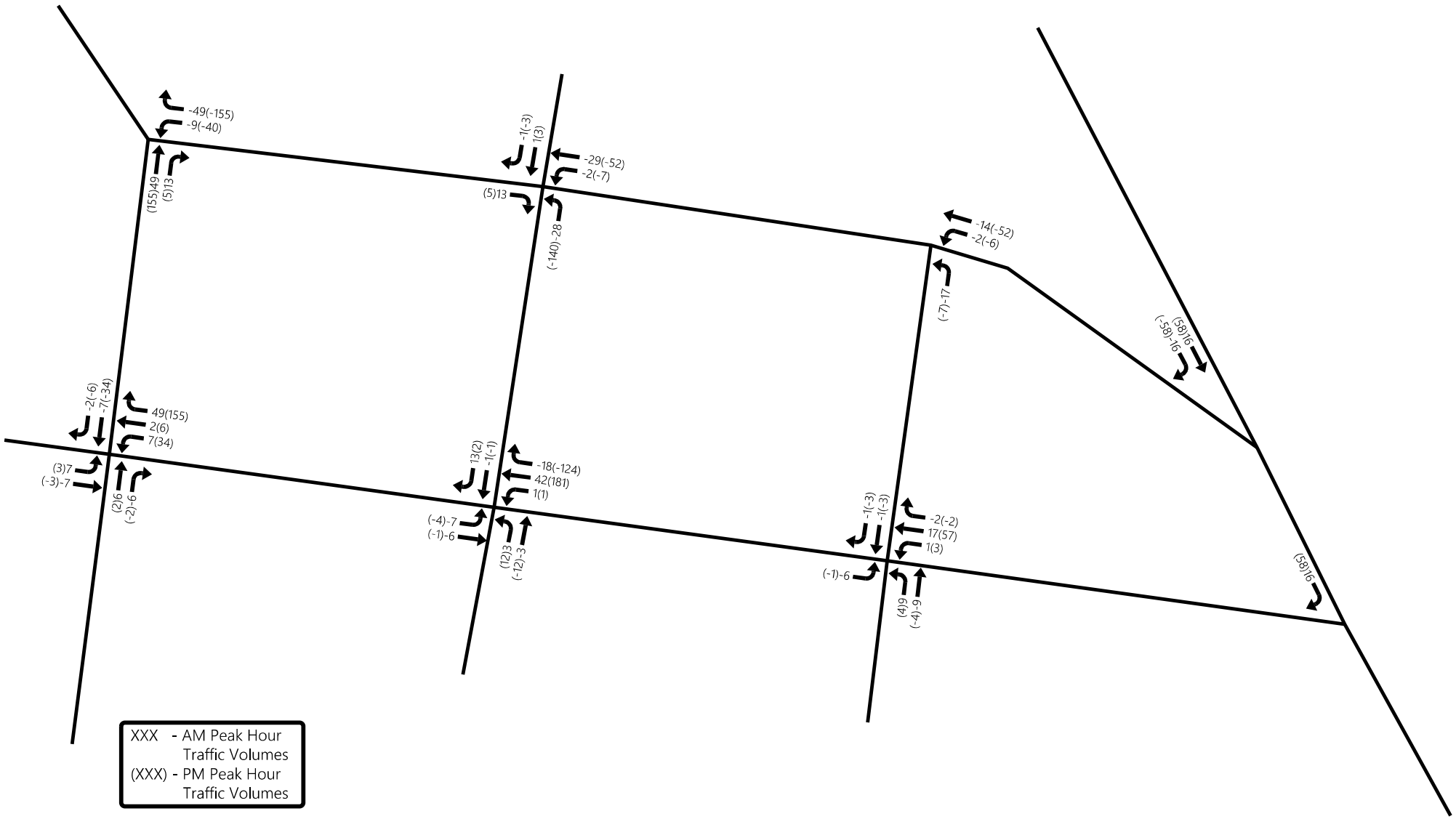
cc:



Projected Peak Hour Traffic Volumes (Scenario #1)

(Not to Scale)

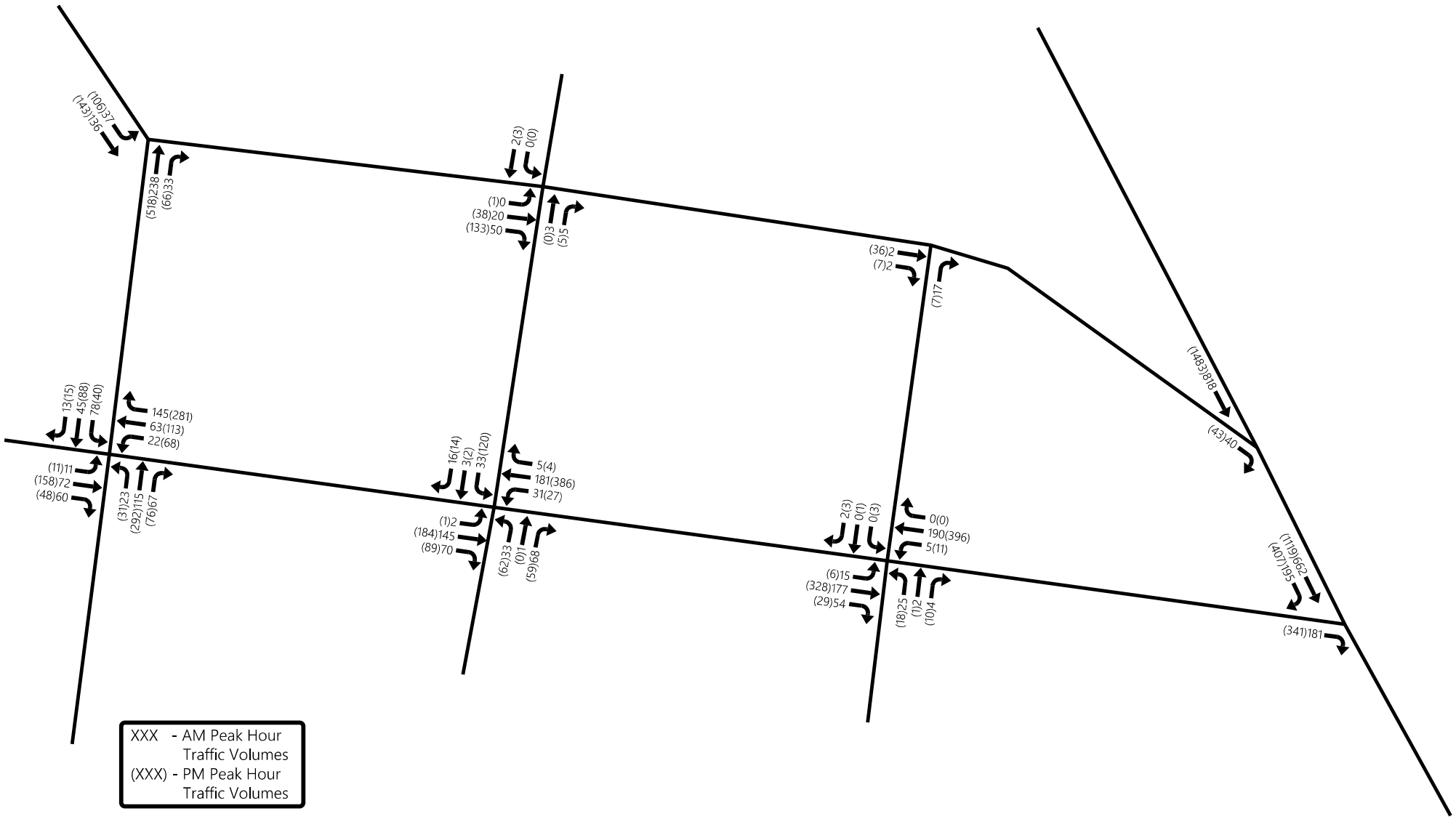
Figure 1.



Re-Assignment of Peak Hour Taffic Volumes

(Not to Scale)

Figure 2.



Projected Peak Hour Traffic Volumes (Scenario #2)

(Not to Scale)

Figure 3.

Table of Contents

Houston Street - One-Way Analysis

Vistro File: M:\...\Houston One-Way Analysis.vistro
Report File: M:\...\Two-Way - AM.pdf
Scenario 1 - Two-Way - AM
9/1/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Martin Street and Houston Steeet	Two-way stop	HCM 6th Edition	WB Left	0.018	11.9	B
2	Houston Street and Brown Street	Two-way stop	HCM 6th Edition	NB Thru	0.004	9.6	A
3	Houston Street and Pillow Street	Two-way stop	HCM 6th Edition	NB Left	0.019	8.9	A
4	4th Avenue South and Houston Street	Two-way stop	HCM 6th Edition	EB Thru	0.151	19.9	C
5	Martin Street and Humphreys Street	All-way stop	HCM 6th Edition	NB Thru	0.297	9.5	A
6	Humphreys Street and Brown Street	Two-way stop	HCM 6th Edition	SB Left	0.084	14.2	B
7	Humphreys Street and Pillow Street	Two-way stop	HCM 6th Edition	NB Thru	0.025	12.9	B
8	4th Avenue South and Humphreys Street	Two-way stop	HCM 6th Edition	EB Right	0.419	18.0	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Martin Street and Houston Steeet

Control Type:	Two-way stop	Delay (sec / veh):	11.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.018

Intersection Setup

Name	Martin Street		Martin Street		Houston Street	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

Volumes

Name	Martin Street		Martin Street		Houston Street	
Base Volume Input [veh/h]	189	20	37	136	9	49
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	189	20	37	136	9	49
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	51	5	10	37	2	13
Total Analysis Volume [veh/h]	205	22	40	148	10	53
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.03	0.00	0.02	0.06
d_M, Delay for Movement [s/veh]	0.00	0.00	7.77	0.00	11.93	9.79
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.09	0.09	0.27	0.27
95th-Percentile Queue Length [ft/ln]	0.00	0.00	2.30	2.30	6.72	6.72
d_A, Approach Delay [s/veh]	0.00		1.65		10.13	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	1.99					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 2: Houston Street and Brown Street

Control Type:	Two-way stop	Delay (sec / veh):	9.6
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.004

Intersection Setup

Name	Brown Street			Brown Street			Houston Street			Houston Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Brown Street			Brown Street			Houston Street			Houston Street		
Base Volume Input [veh/h]	28	3	5	0	1	1	0	20	37	2	29	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	28	3	5	0	1	1	0	20	37	2	29	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	1	1	0	0	0	0	5	10	1	8	0
Total Analysis Volume [veh/h]	30	3	5	0	1	1	0	22	40	2	32	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.14	9.61	8.67	9.02	9.56	8.46	7.28	0.00	0.00	7.34	0.00	0.00
Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.13	0.13	0.13	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	3.25	3.25	3.25	0.17	0.17	0.17	0.00	0.00	0.00	0.10	0.10	0.10
d_A, Approach Delay [s/veh]	9.12			9.01			0.00			0.43		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	2.79											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 3: Houston Street and Pillow Street

Control Type:	Two-way stop	Delay (sec / veh):	8.9
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.019

Intersection Setup

Name	Pillow Street		Houston Street		Houston Street	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Pillow Street		Houston Street		Houston Street	
Base Volume Input [veh/h]	17	17	23	2	2	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	17	17	23	2	2	14
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	5	6	1	1	4
Total Analysis Volume [veh/h]	18	18	25	2	2	15
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.02	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.87	8.56	0.00	0.00	7.27	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.11	0.11	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	2.78	2.78	0.00	0.00	0.09	0.09
d_A, Approach Delay [s/veh]	8.71		0.00		0.86	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	4.10					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 4: 4th Avenue South and Houston Street

Control Type:	Two-way stop	Delay (sec / veh):	19.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.151

Intersection Setup

Name	4th Avenue South		4th Avenue South		Houston Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Thru	Thru	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	4th Avenue South		4th Avenue South		Houston Street	
Base Volume Input [veh/h]	0	0	802	16	0	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	802	16	0	40
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	218	4	0	11
Total Analysis Volume [veh/h]	0	0	872	17	0	43
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.00	0.15
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	19.92
Movement LOS			A	A		C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.53
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	13.14
d_A, Approach Delay [s/veh]	0.00		0.00		19.92	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.92					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 5: Martin Street and Humphreys Street

Control Type:	All-way stop	Delay (sec / veh):	9.5
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.297

Intersection Setup

Name	Martin Street			Martin Street			Humphreys Street			Humphreys Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Martin Street			Martin Street			Humphreys Street			Humphreys Street		
Base Volume Input [veh/h]	23	109	73	78	52	15	4	79	60	15	61	96
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	23	109	73	78	52	15	4	79	60	15	61	96
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	30	20	21	14	4	1	21	16	4	17	26
Total Analysis Volume [veh/h]	25	118	79	85	57	16	4	86	65	16	66	104
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	747	701	733	750
Degree of Utilization, x	0.30	0.23	0.21	0.25

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.25	0.86	0.80	0.98
95th-Percentile Queue Length [ft]	31.16	21.57	19.90	24.40
Approach Delay [s/veh]	9.85	9.63	9.23	9.38
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	9.55			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 6: Humphreys Street and Brown Street

Control Type:	Two-way stop	Delay (sec / veh):	14.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.084

Intersection Setup

Name	Brown Street			Brown Street			Humphreys Street			Humphreys Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Brown Street			Brown Street			Humphreys Street			Humphreys Street		
Base Volume Input [veh/h]	30	4	68	33	4	3	9	151	70	30	139	23
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	4	68	33	4	3	9	151	70	30	139	23
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	1	18	9	1	1	2	41	19	8	38	6
Total Analysis Volume [veh/h]	33	4	74	36	4	3	10	164	76	33	151	25
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.01	0.09	0.08	0.01	0.00	0.01	0.00	0.00	0.02	0.00	0.00
d_M, Delay for Movement [s/veh]	13.28	13.56	10.32	14.21	13.64	9.93	7.59	0.00	0.00	7.78	0.00	0.00
Movement LOS	B	B	B	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.58	0.58	0.58	0.32	0.32	0.32	0.02	0.02	0.02	0.08	0.08	0.08
95th-Percentile Queue Length [ft/ln]	14.50	14.50	14.50	7.89	7.89	7.89	0.54	0.54	0.54	1.91	1.91	1.91
d_A, Approach Delay [s/veh]	11.32			13.86			0.30			1.23		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	3.56											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 7: Humphreys Street and Pillow Street

Control Type:	Two-way stop	Delay (sec / veh):	12.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.025

Intersection Setup

Name	Pillow Street			Pillow Street			Humphreys Street			Humphreys Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Pillow Street			Pillow Street			Humphreys Street			Humphreys Street		
Base Volume Input [veh/h]	16	11	4	0	1	3	21	177	54	4	173	2
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	11	4	0	1	3	21	177	54	4	173	2
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	3	1	0	0	1	6	48	15	1	47	1
Total Analysis Volume [veh/h]	17	12	4	0	1	3	23	192	59	4	188	2
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.02	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	12.75	12.93	9.88	12.51	12.76	9.25	7.65	0.00	0.00	7.75	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.20	0.20	0.20	0.02	0.02	0.02	0.05	0.05	0.05	0.01	0.01	0.01
95th-Percentile Queue Length [ft/ln]	5.12	5.12	5.12	0.43	0.43	0.43	1.27	1.27	1.27	0.23	0.23	0.23
d_A, Approach Delay [s/veh]	12.47			10.13			0.64			0.16		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	1.30											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 8: 4th Avenue South and Humphreys Street

Control Type:	Two-way stop	Delay (sec / veh):	18.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.419

Intersection Setup

Name	4th Avenue South		4th Avenue South		Humphreys Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	4th Avenue South		4th Avenue South		Humphreys Street	
Base Volume Input [veh/h]	0	0	662	179	0	181
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	662	179	0	181
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	180	49	0	49
Total Analysis Volume [veh/h]	0	0	720	195	0	197
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.00	0.42
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	18.05
Movement LOS			A	A		C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	2.04
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	50.97
d_A, Approach Delay [s/veh]	0.00		0.00		18.05	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	3.20					
Intersection LOS	C					

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Scenario 2 - Two-Way - PM
9/1/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Martin Street and Houston Steeet	Two-way stop	HCM 6th Edition	WB Left	0.140	21.4	C
2	Houston Street and Brown Street	Two-way stop	HCM 6th Edition	NB Left	0.198	10.9	B
3	Houston Street and Pillow Street	Two-way stop	HCM 6th Edition	NB Left	0.009	9.2	A
4	4th Avenue South and Houston Street	Two-way stop	HCM 6th Edition	EB Thru	0.435	61.9	F
5	Martin Street and Humphreys Street	All-way stop	HCM 6th Edition	NB Thru	0.723	17.7	C
6	Humphreys Street and Brown Street	Two-way stop	HCM 6th Edition	SB Left	0.388	22.8	C
7	Humphreys Street and Pillow Street	Two-way stop	HCM 6th Edition	NB Left	0.050	17.8	C
8	4th Avenue South and Humphreys Street	Two-way stop	HCM 6th Edition	EB Right	1.313	199.9	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Martin Street and Houston Steeet

Control Type:	Two-way stop	Delay (sec / veh):	21.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.140

Intersection Setup

Name	Martin Street		Martin Street		Houston Street	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

Volumes

Name	Martin Street		Martin Street		Houston Street	
Base Volume Input [veh/h]	363	61	106	143	40	155
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	363	61	106	143	40	155
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	99	17	29	39	11	42
Total Analysis Volume [veh/h]	395	66	115	155	43	168
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.10	0.00	0.14	0.27
d_M, Delay for Movement [s/veh]	0.00	0.00	8.65	0.00	21.38	15.45
Movement LOS	A	A	A	A	C	C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.35	0.35	1.96	1.96
95th-Percentile Queue Length [ft/ln]	0.00	0.00	8.73	8.73	49.09	49.09
d_A, Approach Delay [s/veh]	0.00		3.69		16.66	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	4.79					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 2: Houston Street and Brown Street

Control Type:	Two-way stop	Delay (sec / veh):	10.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.198

Intersection Setup

Name	Brown Street			Brown Street			Houston Street			Houston Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Brown Street			Brown Street			Houston Street			Houston Street		
Base Volume Input [veh/h]	140	0	5	0	0	3	1	38	128	7	52	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	140	0	5	0	0	3	1	38	128	7	52	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	38	0	1	0	0	1	0	10	35	2	14	0
Total Analysis Volume [veh/h]	152	0	5	0	0	3	1	41	139	8	57	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.20	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	10.88	11.30	10.01	9.72	10.60	8.58	7.33	0.00	0.00	7.59	0.00	0.00
Movement LOS	B	B	B	A	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.76	0.76	0.76	0.01	0.01	0.01	0.00	0.00	0.00	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	18.96	18.96	18.96	0.22	0.22	0.22	0.05	0.05	0.05	0.43	0.43	0.43
d_A, Approach Delay [s/veh]	10.85			8.58			0.04			0.93		
Approach LOS	B			A			A			A		
d_I, Intersection Delay [s/veh]	4.43											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 3: Houston Street and Pillow Street

Control Type:	Two-way stop	Delay (sec / veh):	9.2
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.009

Intersection Setup

Name	Pillow Street		Houston Street		Houston Street	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Pillow Street		Houston Street		Houston Street	
Base Volume Input [veh/h]	7	7	36	7	6	52
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	7	7	36	7	6	52
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	2	10	2	2	14
Total Analysis Volume [veh/h]	8	8	39	8	7	57
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.16	8.57	0.00	0.00	7.32	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.05	0.05	0.00	0.00	0.01	0.01
95th-Percentile Queue Length [ft/ln]	1.29	1.29	0.00	0.00	0.34	0.34
d_A, Approach Delay [s/veh]	8.87		0.00		0.80	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.52					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 4: 4th Avenue South and Houston Street

Control Type:	Two-way stop	Delay (sec / veh):	61.9
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.435

Intersection Setup

Name	4th Avenue South		4th Avenue South		Houston Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Thru	Thru	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	4th Avenue South		4th Avenue South		Houston Street	
Base Volume Input [veh/h]	0	0	1425	58	0	43
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	1425	58	0	43
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	387	16	0	12
Total Analysis Volume [veh/h]	0	0	1549	63	0	47
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.00	0.00	0.44
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	61.85
Movement LOS			A	A		F
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	1.86
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	46.47
d_A, Approach Delay [s/veh]	0.00		0.00		61.85	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	1.75					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 5: Martin Street and Humphreys Street

Control Type:	All-way stop	Delay (sec / veh):	17.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.723

Intersection Setup

Name	Martin Street			Martin Street			Humphreys Street			Humphreys Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Martin Street			Martin Street			Humphreys Street			Humphreys Street		
Base Volume Input [veh/h]	31	290	78	40	122	21	8	161	48	34	107	126
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	31	290	78	40	122	21	8	161	48	34	107	126
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	79	21	11	33	6	2	44	13	9	29	34
Total Analysis Volume [veh/h]	34	315	85	43	133	23	9	175	52	37	116	137
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	601	546	554	577
Degree of Utilization, x	0.72	0.36	0.43	0.50

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	6.06	1.66	2.12	2.82
95th-Percentile Queue Length [ft]	151.57	41.40	52.92	70.45
Approach Delay [s/veh]	23.07	13.32	14.25	15.41
Approach LOS	C	B	B	C
Intersection Delay [s/veh]	17.68			
Intersection LOS	C			

Intersection Level Of Service Report
Intersection 6: Humphreys Street and Brown Street

Control Type:	Two-way stop	Delay (sec / veh):	22.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.388

Intersection Setup

Name	Brown Street			Brown Street			Humphreys Street			Humphreys Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Brown Street			Brown Street			Humphreys Street			Humphreys Street		
Base Volume Input [veh/h]	50	12	59	120	3	12	5	185	89	26	205	128
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	50	12	59	120	3	12	5	185	89	26	205	128
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	3	16	33	1	3	1	50	24	7	56	35
Total Analysis Volume [veh/h]	54	13	64	130	3	13	5	201	97	28	223	139
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.14	0.04	0.08	0.39	0.01	0.02	0.00	0.00	0.00	0.02	0.00	0.00
d_M, Delay for Movement [s/veh]	16.83	17.39	12.01	22.77	21.69	16.83	8.02	0.00	0.00	7.91	0.00	0.00
Movement LOS	C	C	B	C	C	C	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	1.02	1.02	1.02	1.97	1.97	1.97	0.01	0.01	0.01	0.07	0.07	0.07
95th-Percentile Queue Length [ft/ln]	25.51	25.51	25.51	49.19	49.19	49.19	0.31	0.31	0.31	1.70	1.70	1.70
d_A, Approach Delay [s/veh]	14.53			22.22			0.13			0.57		
Approach LOS	B			C			A			A		
d_I, Intersection Delay [s/veh]	5.58											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 7: Humphreys Street and Pillow Street

Control Type:	Two-way stop	Delay (sec / veh):	17.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.050

Intersection Setup

Name	Pillow Street			Pillow Street			Humphreys Street			Humphreys Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Pillow Street			Pillow Street			Humphreys Street			Humphreys Street		
Base Volume Input [veh/h]	14	5	10	3	4	6	7	328	29	8	339	2
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	5	10	3	4	6	7	328	29	8	339	2
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	1	3	1	1	2	2	89	8	2	92	1
Total Analysis Volume [veh/h]	15	5	11	3	4	7	8	357	32	9	368	2
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.02	0.02	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	17.78	17.02	11.19	17.38	16.69	10.61	8.05	0.00	0.00	8.10	0.00	0.00
Movement LOS	C	C	B	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.27	0.27	0.27	0.10	0.10	0.10	0.02	0.02	0.02	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	6.63	6.63	6.63	2.56	2.56	2.56	0.51	0.51	0.51	0.58	0.58	0.58
d_A, Approach Delay [s/veh]	15.32			13.80			0.16			0.19		
Approach LOS	C			B			A			A		
d_I, Intersection Delay [s/veh]	0.98											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 8: 4th Avenue South and Humphreys Street

Control Type:	Two-way stop	Delay (sec / veh):	199.9
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.313

Intersection Setup

Name	4th Avenue South		4th Avenue South		Humphreys Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	4th Avenue South		4th Avenue South		Humphreys Street	
Base Volume Input [veh/h]	0	0	1119	349	0	341
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	1119	349	0	341
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	304	95	0	93
Total Analysis Volume [veh/h]	0	0	1216	379	0	371
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.00	1.31
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	199.93
Movement LOS			A	A		F
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	18.55
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	463.86
d_A, Approach Delay [s/veh]	0.00		0.00		199.93	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	37.73					
Intersection LOS	F					

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Scenario 3 - One-Way - AM
9/1/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Martin Street and Houston Steeet	Two-way stop	HCM 6th Edition	SB Left	0.032	7.9	A
2	Houston Street and Brown Street	Two-way stop	HCM 6th Edition	SB Thru	0.002	9.4	A
3	Houston Street and Pillow Street	Two-way stop	HCM 6th Edition	NB Right	0.017	8.5	A
4	4th Avenue South and Houston Street	Two-way stop	HCM 6th Edition	EB Thru	0.153	20.1	C
5	Martin Street and Humphreys Street	All-way stop	HCM 6th Edition	NB Thru	0.332	10.0	A
6	Humphreys Street and Brown Street	Two-way stop	HCM 6th Edition	SB Left	0.085	14.4	B
7	Humphreys Street and Pillow Street	Two-way stop	HCM 6th Edition	NB Thru	0.004	12.9	B
8	4th Avenue South and Humphreys Street	Two-way stop	HCM 6th Edition	EB Right	0.424	18.3	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Martin Street and Houston Steeet

Control Type:	Two-way stop	Delay (sec / veh):	7.9
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.032

Intersection Setup

Name	Martin Street		Martin Street		Houston Street	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

Volumes

Name	Martin Street		Martin Street		Houston Street	
Base Volume Input [veh/h]	238	33	37	136	9	49
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	238	33	37	136	9	49
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	65	9	10	37	2	13
Total Analysis Volume [veh/h]	259	36	40	148	10	53
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.03	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.94	0.00	0.00	0.00
Movement LOS	A	A	A	A		
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.10	0.10	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	2.44	2.44	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		1.69		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.66					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 2: Houston Street and Brown Street

Control Type:	Two-way stop	Delay (sec / veh):	9.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	Brown Street			Brown Street			Houston Street			Houston Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Brown Street			Brown Street			Houston Street			Houston Street		
Base Volume Input [veh/h]	28	3	5	0	2	1	0	20	50	2	29	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	28	3	5	0	2	1	0	20	50	2	29	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	1	1	0	1	0	0	5	14	1	8	0
Total Analysis Volume [veh/h]	30	3	5	0	2	1	0	22	54	2	32	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No			
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	9.31	8.56	8.85	9.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS		A	A	A	A		A	A	A			
95th-Percentile Queue Length [veh/ln]	0.00	0.03	0.03	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.64	0.64	0.18	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	8.84			9.43			0.00			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	1.04											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 3: Houston Street and Pillow Street

Control Type:	Two-way stop	Delay (sec / veh):	8.5
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.017

Intersection Setup

Name	Pillow Street		Houston Street		Houston Street	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Pillow Street		Houston Street		Houston Street	
Base Volume Input [veh/h]	17	17	23	2	2	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	17	17	23	2	2	14
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	5	6	1	1	4
Total Analysis Volume [veh/h]	18	18	25	2	2	15
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.02	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	8.49	0.00	0.00	0.00	0.00
Movement LOS		A	A	A		
95th-Percentile Queue Length [veh/ln]	0.00	0.05	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	1.31	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	8.49		0.00		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	3.40					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 4: 4th Avenue South and Houston Street

Control Type:	Two-way stop	Delay (sec / veh):	20.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.153

Intersection Setup

Name	4th Avenue South		4th Avenue South		Houston Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Thru	Thru	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	4th Avenue South		4th Avenue South		Houston Street	
Base Volume Input [veh/h]	0	0	818	16	0	40
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	818	16	0	40
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	222	4	0	11
Total Analysis Volume [veh/h]	0	0	889	17	0	43
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.00	0.15
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	20.12
Movement LOS			A			C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.53
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	13.32
d_A, Approach Delay [s/veh]	0.00		0.00		20.12	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.93					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 5: Martin Street and Humphreys Street

Control Type:	All-way stop	Delay (sec / veh):	10.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.332

Intersection Setup

Name	Martin Street			Martin Street			Humphreys Street			Humphreys Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Martin Street			Martin Street			Humphreys Street			Humphreys Street		
Base Volume Input [veh/h]	23	115	67	78	45	13	11	72	60	22	62	145
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	23	115	67	78	45	13	11	72	60	22	62	145
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	31	18	21	12	4	3	20	16	6	17	39
Total Analysis Volume [veh/h]	25	125	73	85	49	14	12	78	65	24	67	158
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	717	672	713	751
Degree of Utilization, x	0.31	0.22	0.22	0.33

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.33	0.84	0.82	1.45
95th-Percentile Queue Length [ft]	33.13	20.92	20.58	36.35
Approach Delay [s/veh]	10.27	9.86	9.44	10.15
Approach LOS	B	A	A	B
Intersection Delay [s/veh]	9.99			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 6: Humphreys Street and Brown Street

Control Type:	Two-way stop	Delay (sec / veh):	14.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.085

Intersection Setup

Name	Brown Street			Brown Street			Humphreys Street			Humphreys Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Brown Street			Brown Street			Humphreys Street			Humphreys Street		
Base Volume Input [veh/h]	33	1	68	33	3	16	2	145	70	31	181	5
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	33	1	68	33	3	16	2	145	70	31	181	5
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	0	18	9	1	4	1	39	19	8	49	1
Total Analysis Volume [veh/h]	36	1	74	36	3	17	2	158	76	34	197	5
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.00	0.09	0.08	0.01	0.02	0.00	0.00	0.00	0.03	0.00	0.00
d_M, Delay for Movement [s/veh]	13.65	13.62	10.32	14.37	13.81	10.18	7.63	0.00	0.00	7.77	0.00	0.00
Movement LOS	B	B	B	B	B	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.59	0.59	0.59	0.37	0.37	0.37	0.00	0.00	0.00	0.08	0.08	0.08
95th-Percentile Queue Length [ft/ln]	14.76	14.76	14.76	9.35	9.35	9.35	0.11	0.11	0.11	1.96	1.96	1.96
d_A, Approach Delay [s/veh]	11.43			13.07			0.06			1.12		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	3.57											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 7: Humphreys Street and Pillow Street

Control Type:	Two-way stop	Delay (sec / veh):	12.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.004

Intersection Setup

Name	Pillow Street			Pillow Street			Humphreys Street			Humphreys Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Pillow Street			Pillow Street			Humphreys Street			Humphreys Street		
Base Volume Input [veh/h]	25	2	4	0	0	2	15	177	54	5	190	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	25	2	4	0	0	2	15	177	54	5	190	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	1	1	0	0	1	4	48	15	1	52	0
Total Analysis Volume [veh/h]	27	2	4	0	0	2	16	192	59	5	207	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	12.75	12.93	9.87	12.35	12.77	9.33	7.67	0.00	0.00	7.75	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.20	0.20	0.20	0.01	0.01	0.01	0.04	0.04	0.04	0.01	0.01	0.01
95th-Percentile Queue Length [ft/ln]	5.08	5.08	5.08	0.18	0.18	0.18	0.89	0.89	0.89	0.29	0.29	0.29
d_A, Approach Delay [s/veh]	12.41			9.33			0.46			0.18		
Approach LOS	B			A			A			A		
d_I, Intersection Delay [s/veh]	1.15											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 8: 4th Avenue South and Humphreys Street

Control Type:	Two-way stop	Delay (sec / veh):	18.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.424

Intersection Setup

Name	4th Avenue South		4th Avenue South		Humphreys Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	4th Avenue South		4th Avenue South		Humphreys Street	
Base Volume Input [veh/h]	0	0	662	195	0	181
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	662	195	0	181
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	180	53	0	49
Total Analysis Volume [veh/h]	0	0	720	212	0	197
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.00	0.42
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	18.33
Movement LOS			A	A		C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	2.08
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	51.97
d_A, Approach Delay [s/veh]	0.00		0.00		18.33	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	3.20					
Intersection LOS	C					

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Scenario 4 - One-Way - PM
9/1/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Martin Street and Houston Steeet	Two-way stop	HCM 6th Edition	SB Left	0.121	9.3	A
2	Houston Street and Brown Street	Two-way stop	HCM 6th Edition	SB Thru	0.004	10.1	B
3	Houston Street and Pillow Street	Two-way stop	HCM 6th Edition	NB Right	0.008	8.5	A
4	4th Avenue South and Houston Street	Two-way stop	HCM 6th Edition	EB Thru	0.455	66.1	F
5	Martin Street and Humphreys Street	All-way stop	HCM 6th Edition	WB Right	0.891	31.2	D
6	Humphreys Street and Brown Street	Two-way stop	HCM 6th Edition	SB Left	0.451	27.9	D
7	Humphreys Street and Pillow Street	Two-way stop	HCM 6th Edition	NB Left	0.072	19.0	C
8	4th Avenue South and Humphreys Street	Two-way stop	HCM 6th Edition	EB Right	1.377	227.7	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Martin Street and Houston Steeet

Control Type:	Two-way stop	Delay (sec / veh):	9.3
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.121

Intersection Setup

Name	Martin Street		Martin Street		Houston Street	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

Volumes

Name	Martin Street		Martin Street		Houston Street	
Base Volume Input [veh/h]	518	66	106	143	40	155
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	518	66	106	143	40	155
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	141	18	29	39	11	42
Total Analysis Volume [veh/h]	563	72	115	155	43	168
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.12	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	9.32	0.00	0.00	0.00
Movement LOS	A	A	A	A		
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.41	0.41	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	10.31	10.31	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		3.97		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.18					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 2: Houston Street and Brown Street

Control Type:	Two-way stop	Delay (sec / veh):	10.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.004

Intersection Setup

Name	Brown Street			Brown Street			Houston Street			Houston Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Brown Street			Brown Street			Houston Street			Houston Street		
Base Volume Input [veh/h]	140	0	5	0	3	3	1	38	133	7	52	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	140	0	5	0	3	3	1	38	133	7	52	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	38	0	1	0	1	1	0	10	36	2	14	0
Total Analysis Volume [veh/h]	152	0	5	0	3	3	1	41	145	8	57	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No			
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	9.67	8.85	9.24	10.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS		A	A	A	B		A	A	A			
95th-Percentile Queue Length [veh/ln]	0.00	0.02	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.40	0.40	0.32	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	8.85			10.12			0.00			0.00		
Approach LOS	A			B			A			A		
d_I, Intersection Delay [s/veh]	0.38											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 3: Houston Street and Pillow Street

Control Type:	Two-way stop	Delay (sec / veh):	8.5
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.008

Intersection Setup

Name	Pillow Street		Houston Street		Houston Street	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Pillow Street		Houston Street		Houston Street	
Base Volume Input [veh/h]	7	7	36	7	6	52
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	7	7	36	7	6	52
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	2	10	2	2	14
Total Analysis Volume [veh/h]	8	8	39	8	7	57
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	8.53	0.00	0.00	0.00	0.00
Movement LOS		A	A	A		
95th-Percentile Queue Length [veh/ln]	0.00	0.02	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.59	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	8.53		0.00		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.24					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 4: 4th Avenue South and Houston Street

Control Type:	Two-way stop	Delay (sec / veh):	66.1
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.455

Intersection Setup

Name	4th Avenue South		4th Avenue South		Houston Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Thru	Thru	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	4th Avenue South		4th Avenue South		Houston Street	
Base Volume Input [veh/h]	0	0	1483	58	0	43
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	1483	58	0	43
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	403	16	0	12
Total Analysis Volume [veh/h]	0	0	1612	63	0	47
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.00	0.00	0.46
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	66.15
Movement LOS			A			F
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	1.96
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	48.99
d_A, Approach Delay [s/veh]	0.00		0.00		66.15	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	1.87					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 5: Martin Street and Humphreys Street

Control Type:	All-way stop	Delay (sec / veh):	31.2
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.891

Intersection Setup

Name	Martin Street			Martin Street			Humphreys Street			Humphreys Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Martin Street			Martin Street			Humphreys Street			Humphreys Street		
Base Volume Input [veh/h]	31	292	76	40	88	15	11	158	48	68	113	281
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	31	292	76	40	88	15	11	158	48	68	113	281
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	79	21	11	24	4	3	43	13	18	31	76
Total Analysis Volume [veh/h]	34	317	83	43	96	16	12	172	52	74	123	305
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	529	462	495	563
Degree of Utilization, x	0.82	0.33	0.48	0.89

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	8.11	1.46	2.53	10.41
95th-Percentile Queue Length [ft]	202.80	36.40	63.33	260.24
Approach Delay [s/veh]	33.65	14.65	16.71	41.11
Approach LOS	D	B	C	E
Intersection Delay [s/veh]	31.24			
Intersection LOS	D			

Intersection Level Of Service Report
Intersection 6: Humphreys Street and Brown Street

Control Type:	Two-way stop	Delay (sec / veh):	27.9
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.451

Intersection Setup

Name	Brown Street			Brown Street			Humphreys Street			Humphreys Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Brown Street			Brown Street			Humphreys Street			Humphreys Street		
Base Volume Input [veh/h]	62	0	59	120	2	14	1	184	89	27	386	4
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	62	0	59	120	2	14	1	184	89	27	386	4
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	17	0	16	33	1	4	0	50	24	7	105	1
Total Analysis Volume [veh/h]	67	0	64	130	2	15	1	200	97	29	420	4
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.21	0.00	0.08	0.45	0.01	0.02	0.00	0.00	0.00	0.02	0.00	0.00
d_M, Delay for Movement [s/veh]	19.69	18.98	12.86	27.94	26.81	21.15	8.17	0.00	0.00	7.91	0.00	0.00
Movement LOS	C	C	B	D	D	C	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	1.21	1.21	1.21	2.47	2.47	2.47	0.00	0.00	0.00	0.07	0.07	0.07
95th-Percentile Queue Length [ft/ln]	30.16	30.16	30.16	61.81	61.81	61.81	0.07	0.07	0.07	1.76	1.76	1.76
d_A, Approach Delay [s/veh]	16.35			27.23			0.03			0.51		
Approach LOS	C			D			A			A		
d_I, Intersection Delay [s/veh]	6.20											
Intersection LOS	D											

Intersection Level Of Service Report
Intersection 7: Humphreys Street and Pillow Street

Control Type:	Two-way stop	Delay (sec / veh):	19.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.072

Intersection Setup

Name	Pillow Street			Pillow Street			Humphreys Street			Humphreys Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Pillow Street			Pillow Street			Humphreys Street			Humphreys Street		
Base Volume Input [veh/h]	18	1	10	3	1	3	6	328	29	11	396	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	18	1	10	3	1	3	6	328	29	11	396	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	0	3	1	0	1	2	89	8	3	108	0
Total Analysis Volume [veh/h]	20	1	11	3	1	3	7	357	32	12	430	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.00	0.02	0.01	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	19.05	18.26	11.39	18.43	17.67	10.95	8.21	0.00	0.00	8.11	0.00	0.00
Movement LOS	C	C	B	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.30	0.30	0.30	0.06	0.06	0.06	0.02	0.02	0.02	0.03	0.03	0.03
95th-Percentile Queue Length [ft/ln]	7.54	7.54	7.54	1.47	1.47	1.47	0.47	0.47	0.47	0.78	0.78	0.78
d_A, Approach Delay [s/veh]	16.39			15.12			0.15			0.22		
Approach LOS	C			C			A			A		
d_I, Intersection Delay [s/veh]	0.90											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 8: 4th Avenue South and Humphreys Street

Control Type:	Two-way stop	Delay (sec / veh):	227.7
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.377

Intersection Setup

Name	4th Avenue South		4th Avenue South		Humphreys Street	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	4th Avenue South		4th Avenue South		Humphreys Street	
Base Volume Input [veh/h]	0	0	1119	407	0	341
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	1119	407	0	341
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	304	111	0	93
Total Analysis Volume [veh/h]	0	0	1216	442	0	371
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.00	1.38
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	227.74
Movement LOS			A	A		F
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	19.75
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	493.75
d_A, Approach Delay [s/veh]	0.00		0.00		227.74	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	41.64					
Intersection LOS	F					