Twin Towers, Suite 400, 4955 Steubenville Pike, Pittsburgh, PA 15205 T (412) 490-0630 F (412) 490-0631

April 22, 2015

Campus Advantage Development Associates, L.P.
110 Wild Basin Road, Suite 365
Austin, TX 78746

Attention: Mr. Ronnie Macejewski

Subject: 3407 Forbes Avenue Apartments
Transportation Study Report

Dear Mr. Macejewski:

Trans Associates (TA) is pleased to provide this report for the transportation study of the proposed 3407 Forbes Avenue Apartments development, to be located in the central Oakland section of the City of Pittsburgh. The following sections detail the analyses performed for the project.

PROJECT BACKGROUND

The project site is bounded by Forbes Avenue to the south, Euler Way to the north, and existing buildings to the east and west, with the site garage access driveway to be located on Forbes Avenue. Loading access will be via Euler Way. The site location is presented in Figure 1.

The site is currently occupied with a vacant building and surface parking lot. The proposed development will include construction of a new building with a parking garage. The development components are anticipated to include 137 apartment units (with 295 beds), 2,000 square feet of retail space and an approximately 108-space parking garage which will include 75 bicycle spaces.

Access to the parking garage, which will be available for apartment residents only, will be via a driveway on Forbes Avenue on the eastern side of the property. Since Forbes Avenue adjacent to the site is one-way eastbound, the site driveway will function as a left in-left out only driveway.

The scope of study has been developed based upon a meeting held with you and the City Zoning Administrator and the Department of City Planning (DCP), as well as the Department of Public Works (DPW). TA presented a draft of the Scoping Form B at the scoping meeting on April 20, 2015 and received input from City staff. Input received at the Scoping meeting with the City was incorporated into the scope of study and a revised Scoping Form B was developed.

This revised Scoping Form B will be submitted to the City documenting the required scope of study. This revised Scoping Form B is attached to this letter.

Zoning of Site

The site is within the OPR-C zone, as shown in Figure 2. No change in zoning classification is proposed as part of this development.

Parking Analysis

A parking analysis of the preliminary site, shown in Figure 3, was performed based on the requirements contained in the City of Pittsburgh Zoning Code. The results of this analysis are presented in Table 1. As shown in the table, 137 spaces are required, with five (5) required to be ADA accessible spaces, for the 137 unit apartment and 2,000 square feet of retail, without including bicycle space reductions. The Zoning Code requires a minimum of one (1) bicycle space per every 3 dwelling units for the apartment units, which results in a minimum required number of bicycle spaces of 46. As shown in Table 1, the Zoning Code permits further reduction in the parking spaces provided by up to 30% of the required parking spaces, excluding ADA accessible spaces. If this full permitted reduction was taken, the Zoning Code would require 97 automobile spaces (including 5 ADA accessible spaces) and 46 bicycle spaces.

The parking spaces proposed to be provided as part of the subject development are summarized in Table 2. As mentioned above, 108 vehicle spaces will be provided. This exceeds the minimum number of automobile spaces required (97) by 11 spaces. In addition, a total of 75 bicycle parking spaces will be provided. This exceeds the 46 bicycle spaces required by the Zoning Code by 29 spaces.

Traffic Analysis

<u>Existing Conditions</u>

The area of significant traffic impact will be on the streets immediately adjacent to the development. Based upon discussions with representatives from the City of Pittsburgh Department of Public Works and Department of City Planning as contained in the revised Scoping Form B, the City required intersection capacity analysis at the following intersections:

- Forbes Avenue and Halket Street;
- Forbes Avenue and McKee Place; and
- Forbes Avenue and proposed site driveway.

Manual turning movement counts were performed by TA from 7:00 AM to 9:00 AM and from 4:00 PM to 6:00 PM on Tuesday, April 14, 2015 and Thursday, April 16, 2015. All universities and schools in the project area were in session on the days of these counts. The overall peak hours determined from these counts are as follows:

- AM Peak Hour – 7:30 AM to 8:30 AM
- PM Peak Hour – 4:45 PM to 5:45 PM

Summaries of the data collected during the manual turning movement counts at each of the study intersections has been included with this correspondence. The 2015 existing peak hour traffic volumes are presented in Figure 4.

Trip Generation

Trip generation for the proposed development of 137 apartment units and 2,000 square feet of retail was estimated based upon accepted rates published in the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 9th Edition*.

Trip generation adjustments for use of public transit and walking were applied using the City's SNAP data base, as directed by DCP and DPW during the April 20, 2015 scoping meeting. The analysis is shown in Table 3.

As shown in Table 3, the increase in trips over the traffic that would exist without this project in place is projected to be 3 entering and 14 exiting trips in the AM peak hour, and 15 entering and 8 exiting in the PM peak hour. As shown in Table 4, these increases in traffic volumes represent 0.95% and 1.32% increases in peak hour volumes for the AM and PM peak hours, respectively. This very minor increase in traffic is well within the daily variation of traffic volumes on Forbes Avenue. TA concludes that the traffic impacts of the proposed project will be very minimal and not perceptible to motorists.

The projected year 2017 (year of completion and full occupancy) traffic volumes with the proposed development in place are presented in Figure 5.

Capacity analysis of the study intersections and the Forbes Avenue site driveway were performed, as a measure of congestion and delay. Acceptable urban levels of service lie in the range of Levels of Service A through D. The details of this analysis are contained in the appendix to this report.

The results of the intersection capacity analysis are presented in Table 6, indicating acceptable levels of service at all locations for all traffic movements during both the AM and PM peak hours for both 2015 existing conditions and 2017 conditions both without and with the development in place. These results are presented graphically in Figures 6 and 7 for the 2015 existing and 2017 with development conditions. No traffic mitigation measures are recommended in connection with the proposed development.

Queuing Analysis

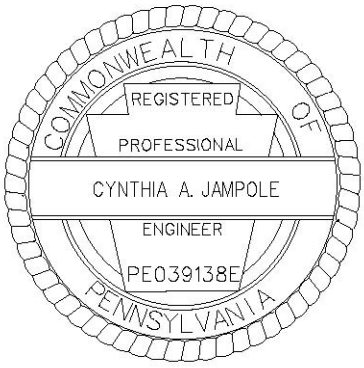
Calculation of the queue length on the site driveway for vehicles exiting the on-site garage resulted in an estimate of a two-foot-long queue. Calculation of the eastbound Forbes Avenue queue of vehicles entering the site driveway resulted in an estimate of a one-foot-long queue. These results are shown in Table 6, and essentially indicate negligible queuing. Entry access equipment will be located at least one car length back from the back of sidewalk, to ensure that the sidewalk will remain passable for pedestrians.

Summary

TA has performed the parking and traffic impact analyses as required by the City for the proposed 3407 Forbes Avenue apartments and retail space. Based on these analyses, TA concludes the following: automobile and bicycle parking to be provided for the proposed development will be in excess of that required by the Zoning Code; traffic volumes generated by the proposed development will be minimal; traffic conditions will remain virtually unchanged from those which would exist without the proposed development in place; queuing of vehicles entering the site will not obstruct the sidewalk; and no negative traffic impacts are anticipated as a result of the construction of the proposed project.

This concludes the transportation study for this project. If you have any questions or require further information, please contact me. Thank you for the opportunity to be of service on this project.

Yours truly,



Cynthia A. Jampole, P.E.
Principal

CAJ:cg

Attachments: Scoping Form B

cc: Robert Durbin
Matt Durbin
W. Sittig
M. Southern- TA
File –CAMAD00/15061/3407 Forbes Avenue Apartments Final Report 4-22-2015

TABLES

TABLE 1
PARKING REQUIREMENT SUMMARY
3407 Forbes Avenue Apartments Traffic and Parking Study
City of Pittsburgh, Allegheny County, Pennsylvania

Development Components	Size	Automobile Parking Demand: City of Pittsburgh Zoning Code[1]			Bicycle Parking Demand: City of Pittsburgh Zoning Code[1]				Total Number of Automobile Parking Spaces Required with Maximum Bicycle Reductions[6]
		Minimum Requirements without Bicycle Reductions			Required Minimum Bicycle Parking[2]		Maximum Reduction of Automobile Parking Spaces Due to Implementation of Bicycle Spaces[3]		
		Off-Street Automobile Parking Rate	Required Number of Automobile Spaces	Required Number of Reserved Spaces for Persons with Disabilities[4]	Bicycle Parking Rate	Required Number of Bicycle Spaces	Maximum Bicycle Parking Reduction Rate	Maximum Reduction[5]	
Apartments	137 units	1 space per unit	137	5	1 bicycle space per every 3 dwelling units	46	30% of required number automobile spaces, not including spaces reserved for persons with disabilities	40	97
Retail	2,000 SF	1 per 500 SF above first 2,400 SF	0	0	0 bicycle spaces between 0 to 6,000 SF	0		0	0
TOTAL 3407 FORBES AVENUE			137	5	--	46	--	40	97

(1) Based on the City of Pittsburgh Urban Zoning Code, Chapter 914: Parking Loading and Access. Parking spaces determined based on results of the parking Demand Study.

(2) Bicycle parking requirements are detailed in Section 914.05D of the City of Pittsburgh Urban Zoning Code.

(3) Section 914.05E of the City of Pittsburgh Urban Zoning Code indicates that the reduction in the number of automobile parking spaces shall be reduced by no more than one (1) space for each Bicycle Parking Space (minimum reduction), but by no more than thirty (30) percent of the total required spaces (maximum reduction), not including spaces reserved for persons with disabilities.

(4) Parking spaces reserved for persons with disabilities shall be counted toward fulfilling overall off-street parking standards. The number of spaces reserved for persons with disabilities is detailed in Section 914.06.A of the City of Pittsburgh Urban Zoning Code. At least one (1) of these spaces must be van accessible.

(5) Maximum bicycle reduction = [(137 spaces - 5 handicapped spaces) x 0.30] = 40 spaces

(6) Total number of automobile spaces required with maximum bicycle reductions = (137 total spaces - 40 bicycle spaces) = 97 spaces. It should be noted that of the 97 spaces, 5 spaces must be reserved for persons with disabilities.

Source: Analysis by Trans Associates.

File - camad00/15061/Tables 4-22-2015

TABLE 2
PARKING ASSIGNMENT SUMMARY
3407 Forbes Avenue Apartments Traffic and Parking Study
City of Pittsburgh, Allegheny County, Pennsylvania

Parking Spaces		Number of Allocated Spaces
Parking Spaces to be Provided	Automobile Spaces	103
	ADA Spaces	5
	Total, Automobile Spaces	108
	Bicycle Spaces	75
Number of Automobile Spaces Provided In Excess of Zoning Code Requirement		**11**

Source: Analysis by Trans Associates.

File - camad00/15061/Tables 4-22-2015

TABLE 3
TRIP GENERATION SUMMARY
3407 Forbes Avenue Apartments Traffic and Parking Study
City of Pittsburgh, Allegheny County, Pennsylvania

Development Component	Size	ITE Land Use	Trip Type		Number of Trips					
					AM Peak Hour			PM Peak Hour		
					Enter	Exit	Total	Enter	Exit	Total
ITE TRIP GENERATION, 9TH EDITION[1]										
Apartment	137 Dwelling Units	220	Total Trips		14	57	71	60	33	93
Retail	2,000 Square Feet	826	Total Trips		0	0	0	2	3	5
TOTAL 3407 FORBES AVENUE					14	57	71	62	36	98
ITE TRIP GENERATION, SEPARATED BY MODE[2]										
Apartment	137 Dwelling Units	220	Transit	13.3%	2	8	10	8	4	12
			Pedestrian	62.4%	9	35	44	37	21	58
			Bicycle	0.0%	0	0	0	0	0	0
			Automobile	24.3%	3	14	17	15	8	23
			Total	100.0%	14	57	71	60	33	93
Retail	2,000 Square Feet	826	Transit	0.0%	0	0	0	0	0	0
			Pedestrian	100.0%	0	0	0	2	3	5
			Bicycle	0.0%	0	0	0	0	0	0
			Automobile	0.0%	0	0	0	0	0	0
			Total	100.0%	0	0	0	2	3	5
NEW AUTOMOBILE TRIPS ONLY					**3**	**14**	**17**	**15**	**8**	**23**

(1) Total trips calculated using the average rates and calculations from the Institute of Transportation Engineers (ITE) *Trip Generation, 9th Edition* , 2012.

(2) Modal splits for the proposed apartment development component were determined through the use of the Central Oakland transportation data provided by *PGHSNAP, Version 2.0, October 2011* , prepared by the City of Pittsburgh Department of City Planning. Zero (0) parking spaces are designed on site for the proposed retail development component; therefore, all trips were assumed to be pedestrians.

Source: Analysis by Trans Associates.

File - camad00/15061/Tables 4-22-2015

TABLE 4
PERCENT INCREASE OF PEAK HOUR TRAFFIC VOLUMES
WITH PROPOSED DEVELOPMENT
3407 Forbes Avenue Apartments Traffic and Parking Study
City of Pittsburgh, Allegheny County, Pennsylvania

Condition	Peak Hour Traffic Volumes (vehicles per hour)	
	Forbes Avenue - Eastbound Approach Between Halket Street and McKee Place	
	A.M. Peak Hour	P.M. Peak Hour
2017 Peak Hour Traffic Volume (With Skyview and Oakland Portal II Developments)	1,797	1,743
Anticipated Increase Peak Hour Traffic Volume(1)	17	23
Total Peak Hour Traffic Volume, With 3407 Forbes Avenue Apartments	1,814	1,766
ANTICIPATED PERCENT (%) INCREASE IN PEAK HOUR TRAFFIC VOLUMES	**0.95%**	**1.32%**

(1) From Table 3.

Source: Analysis by Trans Associates.

File - camad00/15061/Tables 4-22-2015

TABLE 5
LEVEL OF SERVICE SUMMARY
3407 Forbes Avenue Apartments Traffic and Parking Study
City of Pittsburgh, Allegheny County, Pennsylvania

Intersection/Approach/Movement	Level of Service (Delay in Seconds) [1]							
	AM Peak Hour				PM Peak Hour			
	2015 Existing	2017 Without Development	2017 Build	2017 Build Mitigated	2015 Existing	2017 Without Development	2017 Build	2017 Build Mitigated
Forbes Avenue & Halket Street								
Eastbound Forbes Avenue								
Approach	B (17.2)	B (19.4)	B (19.5)	- -	B (15.7)	B (16.6)	B (16.8)	- -
Northbound Halket Street								
Approach	C (23.7)	C (23.9)	C (23.9)	- -	C (23.2)	C (25.8)	C (25.9)	- -
Southbound Halket Street								
Approach	C (21.9)	C (22.0)	C (22.1)	- -	C (22.1)	C (25.1)	C (26.4)	- -
OVERALL INTERSECTION	B (18.5)	C (20.2)	C (20.3)	- -	B (17.4)	B (18.6)	B (18.9)	- -
Forbes Avenue & McKee Place								
Eastbound Forbes Avenue								
Approach	A (5.9)	A (5.6)	A (5.9)	- -	A (4.9)	A (5.8)	A (6.0)	- -
Northbound McKee Place								
Approach	C (34.7)	D (35.3)	D (35.5)	- -	C (22.9)	C (23.1)	C (23.2)	- -
Southbound McKee Place								
Left Turn	D (41.0)	D (42.1)	D (42.9)	- -	C (27.4)	C (27.7)	C (28.1)	- -
Through	C (26.5)	D (36.6)	C (26.6)	- -	C (21.0)	C (21.0)	C (21.0)	- -
Approach	C (31.1)	C (31.5)	C (31.8)	- -	C (23.7)	C (23.9)	C (24.0)	- -
OVERALL INTERSECTION	B (12.7)	B (12.3)	B (12.6)	- -	A (10.0)	B (10.2)	B (10.4)	- -
Forbes Avenue & Proposed Site Driveway								
Eastbound Forbes Avenue								
Left Turn/Through	- -	- -	A (0.1)	- -	- -	- -	A (0.4)	- -
Southbound Proposed Site Driveway								
Left Turn	- -	- -	B (10.8)	- -	- -	- -	B (10.7)	- -
OVERALL INTERSECTION	- -	- -	A (0.1)	- -	- -	- -	A (0.1)	- -

(1) Level of service determined through the use of Synchro Traffic Simulation Software, Version 8. All calculations were performed using the methodologies published in Highway Capacity Manual 2000 by the Transportation Research Board.

Source: Analysis by Trans Associates.

File - camad00-15061/Tables 4-22-2015

TABLE 6
QUEUE LENGTH SUMMARY
3407 Forbes Avenue Apartments Traffic and Parking Study
City of Pittsburgh, Allegheny County, Pennsylvania

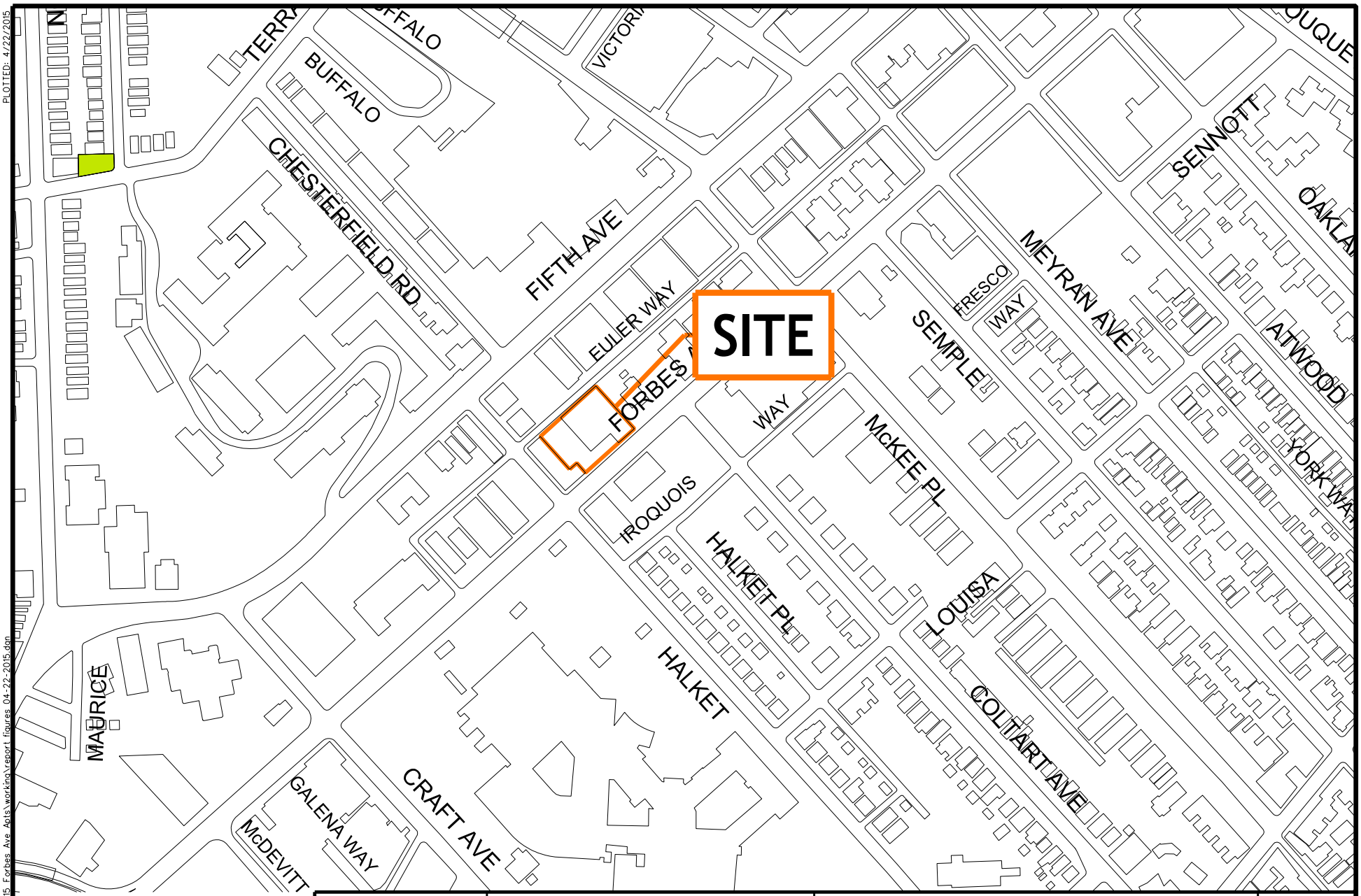
Intersection/Approach/Movement	95th Percentile Queue Length (Feet)[1]							
	AM Peak Hour				PM Peak Hour			
	2015 Existing	2017 Without Development	2017 Build	2017 Build Mitigated	2015 Existing	2017 Without Development	2017 Build	2017 Build Mitigated
Forbes Avenue & Proposed Site Driveway								
Eastbound Forbes Avenue								
Left Turn/Through	-	-	0	-	-	-	1	-
Southbound Proposed Site Driveway								
Left Turn	-	-	2	-	-	-	1	-

(1) 95th percentile queue length determined through the use of Synchro Traffic Simulation Software, Version 8.

Source: Analysis by Trans Associates.

File - camad00-15061/Tables 4-22-2015

FIGURES



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SCALE: N.T.S.

Trans Associates

Transportation Solutions for Today and Tomorrow
Twin Towers Suite 400 /4955 Steubenville Pike
Pittsburgh, Pennsylvania 15205 /(412) 490-0630

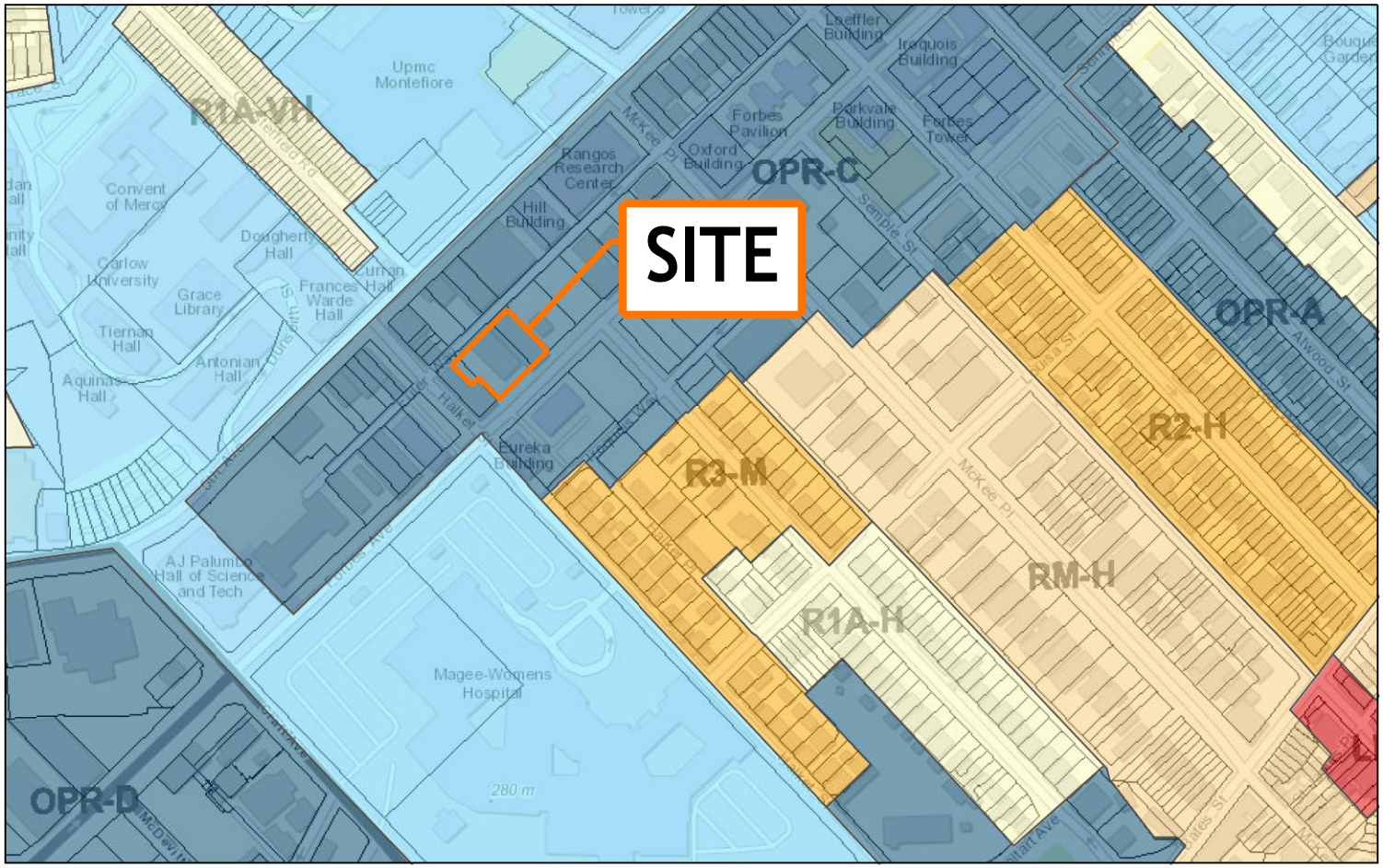
PROJECT NO. CAMAD00 - 15061

PROJECT: 3407 Forbes Avenue Apartments
Traffic and Parking Study

TITLE: Site Location

FIGURE 1

D.B. CAD
C.B. CAJ
REV.



February 23, 2015

Zoning Districts

Zoning Districts

- Oakland Public Realm
- Educational/Medical Institution
- Local Neighborhood Commercial
- Single-Unit Attached Residential
- Two-Unit Residential
- Three-Unit Residential
- Multi-Unit Residential
- Parcels
- LotLines

1:4,514

0 0.0375 0.075 0.15 mi

0 0.05 0.1 0.2 km

Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL,

mjhoma

N

SCALE: N.T.S.

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Pittsburgh, Pennsylvania 15205 /(412) 490-0630

PROJECT NO. CAMAD00 - 15061

PROJECT: 3407 Forbes Avenue Apartments
Traffic and Parking Study

TITLE: City of Pittsburgh
Zoning Map

FIGURE 2

D.B. CAD
C.B. CAJ
REV.

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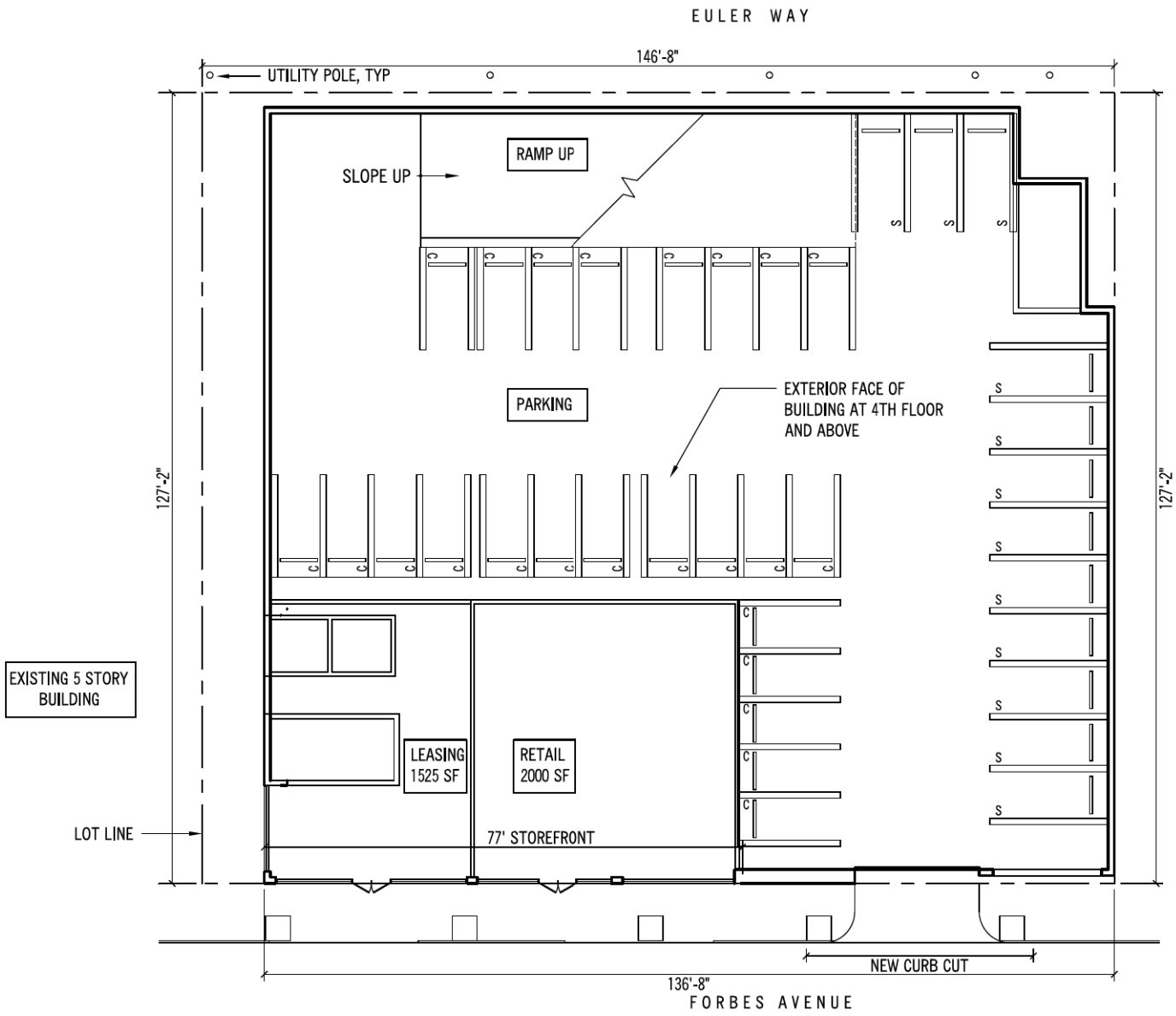

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Pittsburgh, Pennsylvania 15205 /(412) 490-0630

PROJECT NO. CAMAD00 - 15061

PROJECT: 3407 Forbes Avenue Apartments
Traffic and Parking Study

TITLE: Preliminary Site Plan

FIGURE 3

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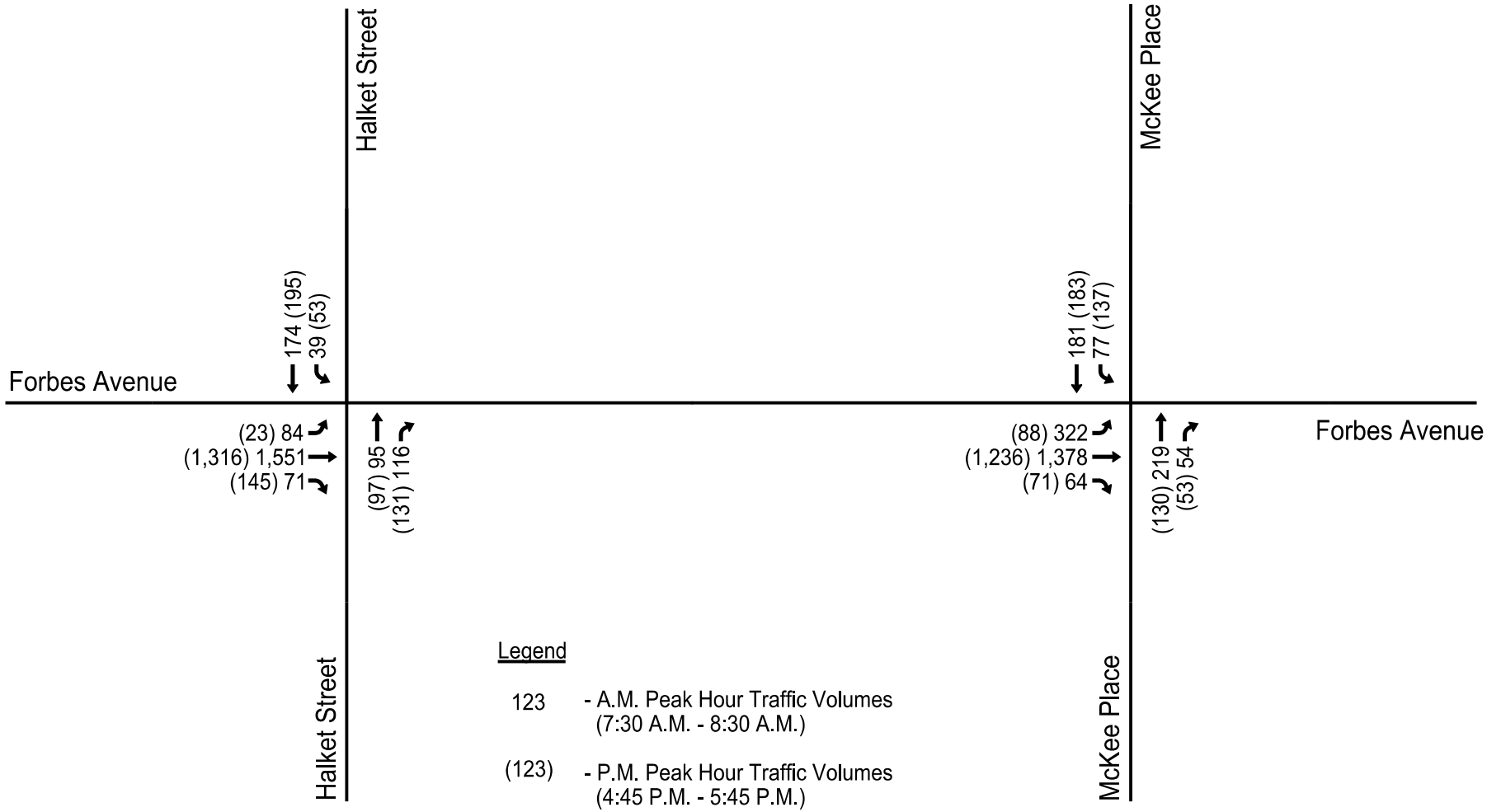

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Pittsburgh, Pennsylvania 15205 /(412) 490–0630

PROJECT NO. CAMAD00 - 15061

PROJECT: 3407 Forbes Avenue Apartments
Traffic and Parking Study

TITLE: 2015 Existing Conditions
Peak Hour Traffic Volumes

FIGURE 4

D.B. MDS
C.B. CAJ
REV.

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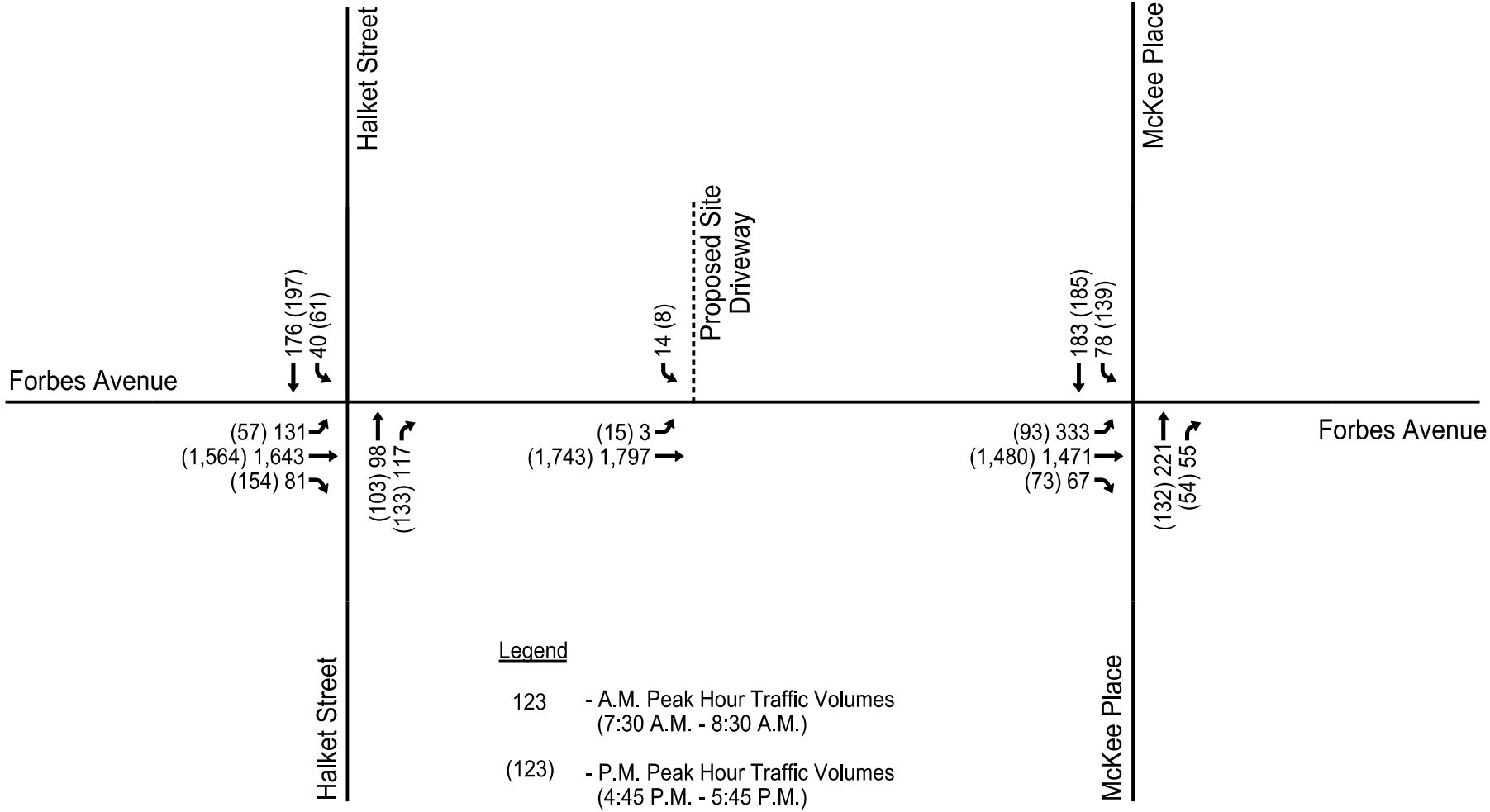

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Pittsburgh, Pennsylvania 15205 /(412) 490-0630

PROJECT NO. CAMAD00 - 15061

PROJECT: 3407 Forbes Avenue Apartments
Traffic and Parking Study

TITLE: 2017 Build Conditions
Peak Hour Traffic Volumes

FIGURE 5

D.B. MDS
C.B. CAJ
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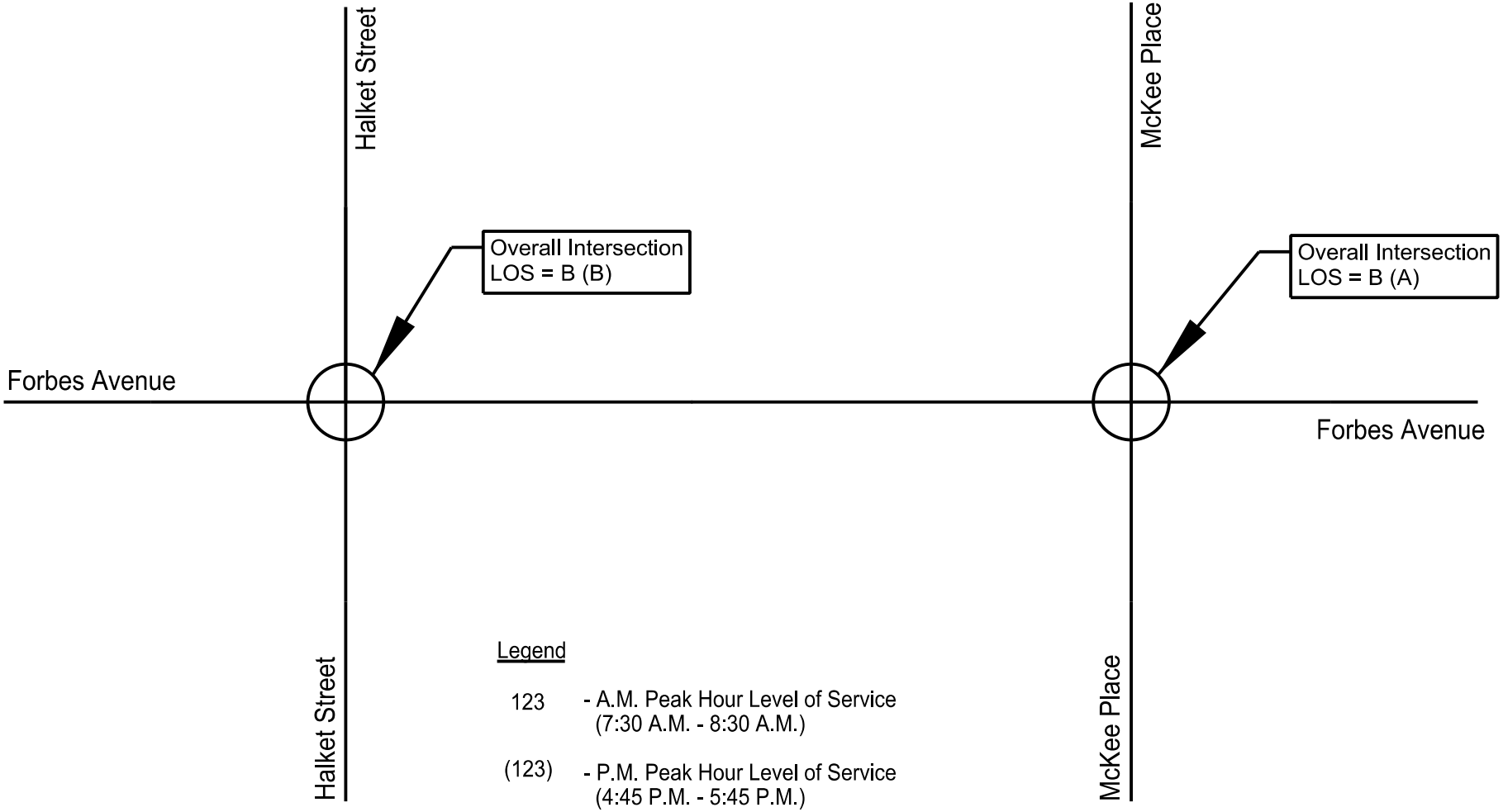

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PROJECT NO. CAMAD00 - 15061

PROJECT: 3407 Forbes Avenue Apartments
Traffic and Parking Study

TITLE: 2015 Existing Conditions
Peak Hour Levels of Service

FIGURE 6

D.B. MDS
C.B. CAJ
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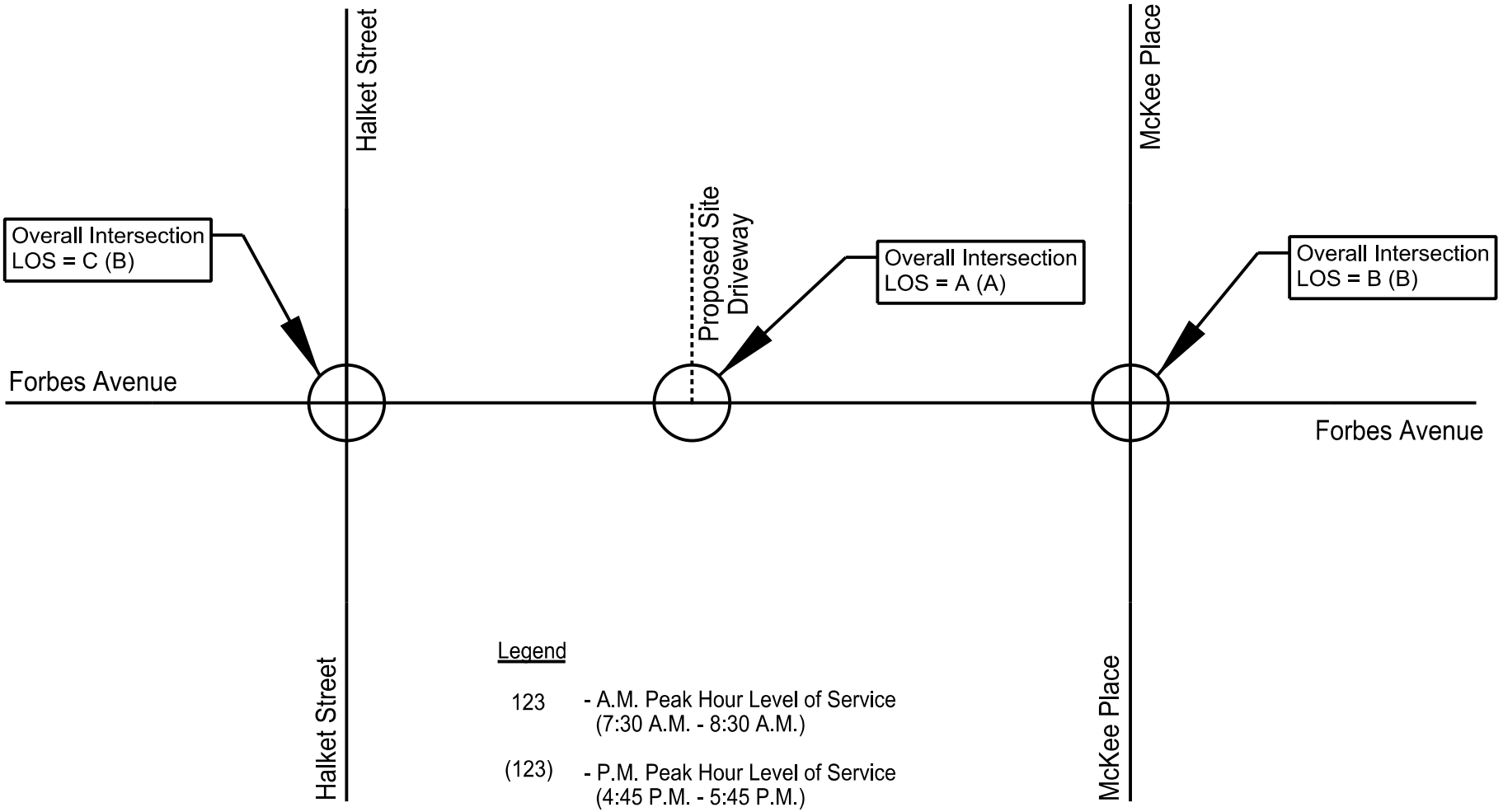

Legend

123 - A.M. Peak Hour Level of Service (7:30 A.M. - 8:30 A.M.)

(123) - P.M. Peak Hour Level of Service (4:45 P.M. - 5:45 P.M.)

SCALE: N.T.S.

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Pittsburgh, Pennsylvania 15205 /(412) 490-0630

PROJECT NO. CAMAD00 - 15061

PROJECT: 3407 Forbes Avenue Apartments
Traffic and Parking Study

TITLE: 2017 Build Conditions
Peak Hour Levels of Service

FIGURE 7

D.B. MDS
C.B. CAJ
REV.

APPENDIX

Scoping Form B

TRAFFIC, PARKING AND PEDESTRIAN IMPACT STUDY

SCOPING FORM B (Revised March 2012)

LAND DEVELOPMENT AND PARKING PLANS

DEPARTMENT OF CITY PLANNING

CITY OF PITTSBURGH

ALL ENTRIES SUBJECT TO APPROVAL BY THE PRINCIPAL TRANSPORTATION PLANNER, DEPARTMENT OF CITY PLANNING, CITY OF PITTSBURGH

1.0 NAME OF PROJECT

1.1 Developer/Agent: Campus Advantage Development Associates, L.P.

1.2 Development/Facility: 3407 Forbes Avenue Apartments

1.3 Anticipated Development Date: opening August 2017

1.4 Date: 4-17-2015, revised 4-22-2015 to incorporate City staff comments from 4-20-2015 meeting

1.5 Prepared by: Trans Associates, Cynthia A. Jampole, P.E.

2.0 PROJECT LOCATION

2.1 Physical Address 3407 Forbes Avenue

2.2 Neighborhood Central Oakland

2.3 Existing Zoning OPR-C

2.4 Proposed Zoning OPR-C

2.5 Attach City Neighborhood Map http://www.city.pittsburgh.pa.us/cp/html/neighborhood_map_list.html

3.0 PROJECT COMPONENTS

3.1		EXISTING ON-SITE CONDITIONS						FUTURE ON-SITE CONDITIONS		
	LAND USE	Size (Sq. Ft.)		# Units, Beds, Seats		# Parking Spaces		New Project Components		
		Remain	Remove	To Remain	To Remove	To Remain	To Remove	Units/Sq. Ft.	# New Parking Spaces	Comment
3.1.1	Apartments							137		295 beds
3.1.2	Parking Garage								108	
3.1.3	Bicycle Spaces								75 bikes	
3.1.4	Retail space on Forbes							2,000 GSF		
	3 levels of parking									
	10 apt floors									

4.0 DESCRIBE STUDY AREA CONDITIONS (Attach DCP map showing study area boundary and site)

4.1 Area of Influence: See Figures 1 and 4.

4.2 Area of Significant Traffic and Parking Impact:

See Figures 1 and 4.

4.3 Zoning Code Designation of Site (Attach map):

OPR-C See Figure 3.

4.4 Zoning Code Designation of Adjacent Sites (Attach map):

See Figure 3. EMI, OPR-C, OPR-A, OPR-D, R3-M, RM-H

5.0 TRAFFIC ANALYSIS

5.1 Existing Conditions

Study Intersections		Unsignalized	Signalized
5.1.1	Forbes Avenue and Halket Street		x
5.1.2	Forbes Avenue and McKee Place		x
5.1.3			
5.1.4			
5.1.5			
5.1.6			
5.1.7			
5.1.8			
5.1.9			
5.1.10			

Attach map showing project site and nearby critical intersections

Comment: See Figure 4.

5.2 Project Entry/Exit Points

		Unsignalized	Signalized
5.2.1	Forbes Avenue and Ga rage driveway	x	
5.2.2	Euler Way and access to loading area	x	
5.2.3			
5.2.4			
5.2.5			

Attach map showing project entry points

Comment: See Figure 4.

6.0 REQUIRED DATA COLLECTION (Show count locations on map)

6.1 Study Intersections (All intersections listed in 5.1)

		Turning Movement	Transit	Heavy Vehicles	Bicycle	Pedestrians
6.1.1	Forbes Avenue and Halket Street	x	x	x	x	x
6.1.2	Forbes Avenue and McKee Place	x	x	x	x	x
6.1.3						
6.1.4						
6.1.5						
6.1.6						
6.1.7						
6.1.8						
6.1.9						
6.1.10						

6.2 Study Periods (Please check)

			Comment
6.2.1	AM Peak	x	7 AM - 9 AM
6.2.2	Mid Day Peak		
6.2.3	PM Peak	x	4 PM - 6 PM
6.2.4	Evening		
6.2.5	Hospital Peak		
6.2.6	Weekday Event Peak		
6.2.7	School Peak		
6.2.8	Saturday Peak		
6.2.9	Other Event Peak (specify)		

6.3 Automatic Traffic Recorder (ATR) Counts (Please check and attach map) **Yes** [ ] **No** [x]

6.3.1	**48-hr Counts**		
	Location		
		between	and
		between	and
		between	and
		between	and
6.3.2	**7-day Counts**		
	Location		
		between	and
		between	and
		between	and
		between	and
6.3.3	**Other**		
	Location		
		between	and
		between	and
		between	and
		between	and

Comment:

6.4 Type ATR Count (Please check)

			Comment
6.4.1	Volume Counts		
6.4.2	15-Minute Increments		
6.4.3	1-Hour Increments		
6.4.4	Speed Data		
6.4.5	Vehicle Classification Data		

Comment:

6.5 Project Entry/Exit Points (Attach map) **Yes** x **No**

6.5.1	Forbes Avenue and Garage driveway
6.5.2	Euler Way and access to loading area
6.5.3	
6.5.4	
6.5.5	

Note: Existing site entry points must be counted

Comment: See Figure 1.

6.6 Bicycle

6.6.1 Existing Bicycle Rack Counts/Locations (Attach Map) **Yes** **No** x

Comment:

6.6.2 Existing Bikeways/Paths (Attach Map) **Yes** **No** x

Comment:

6.7 Other

6.7.1 _____ **Yes** **No**

6.7.2 _____ **Yes** **No**

7.0 PROJECT PHASING

Phase	Year of Completion	Development Components	
Full build out	2017	all	
2			
3			
4			
5-Year Horizon			
10-Year Master Plan			
Other-Year Master Plan			

8.0 FUTURE YEAR CONDITIONS

8.1 Seasonal Adjustment (Please indicate source and provide comments) **%**

Comment: N/A

8.2 Annual Base Traffic Growth per year (Please indicate source and provide comments) **TBD**

Comment: SPC

8.3 Trip Removals (Please check and comment)

8.3.1	On-Site Removals	**Yes**		**No**	x
8.3.2	Other (Explain)	**Yes**		**No**	x

Comment:

8.4	**New Projects to be Added to base Traffic (As specified by DCP)**
8.4.1	Oakland Portal
8.4.2	Skyvue Apartments
8.4.3	
8.4.4	

9.0 TRIP GENERATION

9.1	**Trip Generation Rate (Please check and indicates sources)**		**Comment**
9.1.1	Institute of Transportation Engineers (ITE)	x	
9.1.2	Independent Survey		
9.1.3	Other (specify)		

9.2 Trip Generation Adjustment Factors (check as applicable and explain) **Yes** **No** X

Base Traffic Adjustment Factors			**Comment**
9.2.1	Internal Trips	%	
9.2.2	Shared Trips	%	
9.2.3	Pass-by Trips	%	

9.3 Modal Split (Please check) **Yes** X **No**

Mode Share traffic Adjustment Factors		SNAP data, Central Oakland	**Comment**	as directed by DCP
9.3.1	Auto	24.30%		
9.3.2	Trucks	%		
9.3.3	Transit	13.30%		
9.3.4	Bicycle	%		
9.3.5	Pedestrian	62.40%		
9.3.6	Other	%		

Note: SNAP data applied to apartment residential use

9.4 Auto Occupancy (Please check) **Yes** **No** x

Comment:

9.5 Transit Occupancy (Please check) **Yes** **No** x

Comment:

9.6 Trip Reduction based on Proximity to a Transit Facility **Yes** **No** x

Comment:

9.7 Transit Routes to or Near the Site

9.7.1	Peak and Non Peak Bus Route and Trip Analysis	**Yes**	x	**No**	
9.7.2	Identify Bus Stop and Shelter Locations At or Near the Site	**Yes**	x	**No**	
9.7.3	Identify developer created amenities to attract greater transit use	**Yes**		**No**	**x**

9.8 Bicycle Routes to or Near the Site

9.8.1	Identify trail locations and connections to the site	**Yes**	x	**No**	
9.8.2	Identify developer created amenities to attract greater bicyclist use	**Yes**	x	**No**	
9.8.3	Identify planned new or extended trails	**Yes**	x	**No**	

9.9 Special Circumstances (Please check) **Yes** | **No** **x**

Comment:

10.0 TRIP DISTRIBUTION

10.1 Methodology for Trip Assignment (Please check)

10.1.1	Existing Traffic Data	**Yes**	**x**	**No**	
10.1.2	Gravity Distribution Model	**Yes**		**No**	x
10.1.3	SPC Model	**Yes**		**No**	x
10.1.4	Market Study	**Yes**		**No**	x
10.1.5	Other (Specify)	**Yes**		**No**	x

Comment:

11.0 CAPACITY ANALYSIS (Check conditions that apply)

11.1	Existing Conditions	**Yes**	x	**No**	
11.2	Analysis Year Conditions Without New Project	**Yes**	x	**No**	
11.3	Analysis Year Conditions With New Project	**Yes**	x	**No**	
11.4	Analysis Year Conditions With New Project and Mitigation	**Yes**	x	**No**	

11.4.1	2017 full build out	**Yes**	x	**No**	
11.4.2	Phase 2 Year	**Yes**		**No**	
11.4.3	Phase 3 Year	**Yes**		**No**	
11.4.4	Phase 4 Year	**Yes**		**No**	
11.4.5	5-Year Horizon	**Yes**		**No**	
11.4.6	10-Year Master Plan Year	**Yes**		**No**	
11.4.7	20-year (federally funded)	**Yes**		**No**	
11.4.8	Other Time Frame	**Yes**		**No**	

Comment:

12.0 QUEUING ANALYSIS **Yes** **x** | **No**

12.1 Locations

12.1.1	Forbes Avenue site garage driveway

12.2 Queuing Method

12.2.1	Synchro	**Yes**	x	**No**	
12.2.2	HCS	**Yes**		**No**	**x**
12.2.3	Other	**Yes**		**No**	**x**

Comment:

13.0 SIGNAL WARRANT ANALYSIS — Yes [ ] No [x]

13.1 Locations

13.1.1	
13.1.2	
13.1.3	
13.1.4	
13.1.5	

13.2 Warrant Types

13.2.1	8-Hour	Yes [ ]	No [ ]
13.2.2	4-Hour	Yes [ ]	No [ ]
13.2.3	Peak-Hour	Yes [ ]	No [ ]
13.2.4	Pedestrian Volume	Yes [ ]	No [ ]
13.2.5	School Crossing	Yes [ ]	No [ ]
13.2.6	Coordinated Signal System	Yes [ ]	No [ ]
13.2.7	Crash Experience	Yes [ ]	No [ ]
13.2.8	Roadway Network	Yes [ ]	No [ ]

13.3 Left Turn Lane Warrant — Yes [ ] No [x]

Recommended Length — Yes [ ] No [ ]

Comment:

13.4 Right Turn Lane Warrant — Yes [ ] No [x]

Recommended Length — Yes [ ] No [ ]

Comment:

14.0 PEDESTRIAN ACCESS, CIRCULATION AND SAFETY (Please check)

14.1	On-site	Yes [x]	No [ ]
14.2	Off-site	Yes [x]	No [ ]
14.3	Crosswalk need and warrants	Yes [x]	No [ ]

Comment:

15.0 ACCIDENT ANALYSIS (Please check) — Yes [ ] No [x]

15.1 Locations

15.1.1	
15.1.2	
15.1.3	
15.1.4	
15.1.5	
15.1.6	

15.2 Collision Diagram

15.2.1	3-Year Data	Yes [ ]	No [ ]
15.2.2	5-Year Data	Yes [ ]	No [ ]

Comment:

15.3 Rate Comparisons — Yes [ ] No [ ]

Comment:

16.0 SIGHT DISTANCE ANALYSIS — Yes: x — No:

16.1 Locations

16.1.1	Forbes Avenue garage driveway
16.1.2	
16.1.3	
16.1.4	
16.1.5	
16.1.6	
16.1.7	
16.1.8	
16.1.9	
16.1.10	

Note: Must include project exit points as well as study intersections that are not all-way stop controlled or signalized.

17.0 PARKING DEMAND/SUPPLY CONDITIONS

17.1 Existing Conditions On-site and Off-site (Please check)

17.1.1	Existing Parking Management Plan	Yes:	No: x
17.1.2	Existing Residential Permit Parking Program (RPPP) Areas (Show on map)	Yes: x	No:

17.2 DATA COLLECTION (Please check)

17.2.1	Conduct On and Off Street Parking Inventory (Show on map)	Yes:	No: **x**
17.2.2	Conduct Parking Accumulation Counts (Map)	Yes:	No: **x**
	Data Collection Interval		
1	Every Hour	Yes:	No: **x**
2	Every 2 Hours	Yes:	No: **x**
3	Other (Specify)	Yes:	No: **x**

17.2.3 Count Period

Start

Finish

17.2.4	Duration/Turnover Counts (Show on map)	Yes:	No: **x**
	Data Collection Interval		
1	Every Hour	Yes:	No:
2	Every 2 Hours	Yes:	No:
3	Other (Specify)	Yes:	No:

17.3 Parking Conditions Supply and Demand Analysis

17.3.1	2017 full occupancy	Yes: x	No:
17.3.2	Phase 1 Year	Yes:	No:
17.3.3	Phase 2 Year	Yes:	No:
17.3.4	Phase 3 Year	Yes:	No:
17.3.5	Phase 4 Year	Yes:	No:
17.3.6	5-Year Horizon	Yes:	No:
17.3.7	10-Year Master Plan Year	Yes:	No:
17.3.8	20-Year	Yes:	No:
17.3.9	Other-Year Master Plan	Yes:	No:

Comment:

17.5	**Projection of Future Parking Demand**					
17.5.1	Methodology					
A	ITE Parking Generation Manual		**Yes**		**No**	x
B	City of Pittsburgh Zoning Code		**Yes**	x	**No**	
C	Site Specific Parking Study Demand Data		**Yes**		**No**	x
D	Other Methodology (Please specify)		**Yes**		**No**	x
17.6	**Parking Space Reduction based on Proximity to a Transit Facility**		**Yes**		**No**	**x**
	Comment:					
17.7	**Recommended Parking Mitigation**					
17.7.1	Future Parking Management Plan #NAME?		**Yes**	x	**No**	
A	On-Site		**Yes**	x	**No**	
B	Off-Site		**Yes**		**No**	**x**
17.8	**Bicycle Parking**					
17.8.1	Bicycle Parking Required		**Yes**	x	**No**	
17.8.2	Bicycle Parking for vehicular parking reduction		**Yes**	x	**No**	
	Comment:					
17.9	**ADA Parking Requirements**		**Yes**	x	**No**	
	Comment:					
17.10	**Evaluation of On-Site parking circulation (Provide turning templates)**		**Yes**	x	**No**	
	Comment:					
17.11	**Parking Management Plan (PMP)**		**Yes**	x	**No**	
	Comment:					
18.0	**TRUCK LOADING ANALYSIS**					
18.1	**Truck Trip Generation**					
18.1.1	Hourly		**Yes**		**No**	**x**
18.1.2	Daily		**Yes**		**No**	**x**
18.2	**Size of Truck or Service Delivery Vehicle**		**Yes**	x	**No**	
18.2.1	**Design Vehicle**		**Yes**	x	**No**	
18.2.2	**Turning Radius**		**Yes**		**No**	
18.3	**Number of Dock Spaces Per Zoning Code**		**Yes**	x	**No**	
18.4	**Number of Dock Spaces Per Peak Demand**		**Yes**		**No**	x
18.5	**Proposed Number of Dock Spaces Per:**					
18.5.1	2017 full build out		**Yes**	x	**No**	
18.5.2	Phase 2 Master Plan		**Yes**		**No**	
18.5.3	Phase 4 Master Plan		**Yes**		**No**	
18.5.4	5-Year Horizon		**Yes**		**No**	
18.5.5	10-Year Master Plan		**Yes**		**No**	
18.6	**Truck Maneuverability On/Off-site (Provide turning templates)**		**Yes**	x	**No**	

18.7	**Refuse Storage/Pick-up Analysis (Show on map)**			**Yes**	x	**No**
18.8	**Truck Loading Management Plan (TLMP)**			**Yes**	x	**No**
19.0	**SITE PLAN REVIEW AND ANALYSIS**			**Yes**		**No** x
19.1	**Estimated ADT's provided for roadways within the site**			**Yes**		**No** x
19.2	**Cross sections are provided for new roadways within the site showing**			**Yes**		**No** x
	required number of lanes to accommodate anticipated traffic			**Yes**		**No** x
19.3	**Pedestrian desire lines reviewed for proper accommodations**			**Yes**		**No** x
19.4	**Internal traffic control compliant with MUTCD and PennDOT**			**Yes**		**No** x
19.5	**Proposed public roadways are identified**					
19.5.1	Required Right of way widths are determined			**Yes**		**No** x
19.5.2	Minimum Sidewalk widths are established			**Yes**		**No** x
19.5.3	Minimum lane widths are established			**Yes**		**No** x
19.5.4	Typical cross sections are recommended			**Yes**		**No** x
19.6	**Guidelines for Design are included**			**Yes**	x	**No**
19.6.1	Required sight distance is described for driveways and intersections			**Yes**	x	**No**
19.7	**Review of Driveway Design**					
19.7.1	Distance to adjacent intersections			**Yes**	x	**No**
19.7.2	Capacity			**Yes**	x	**No**
19.7.3	Width			**Yes**	x	**No**
19.7.4	Driveway Queue (On-site and on-street)			**Yes**	x	**No**
19.7.5	Appropriate design to accommodate design vehicle			**Yes**	x	**No**
19.7.6	Driveway Traffic Control			**Yes**	x	**No**

Comment:

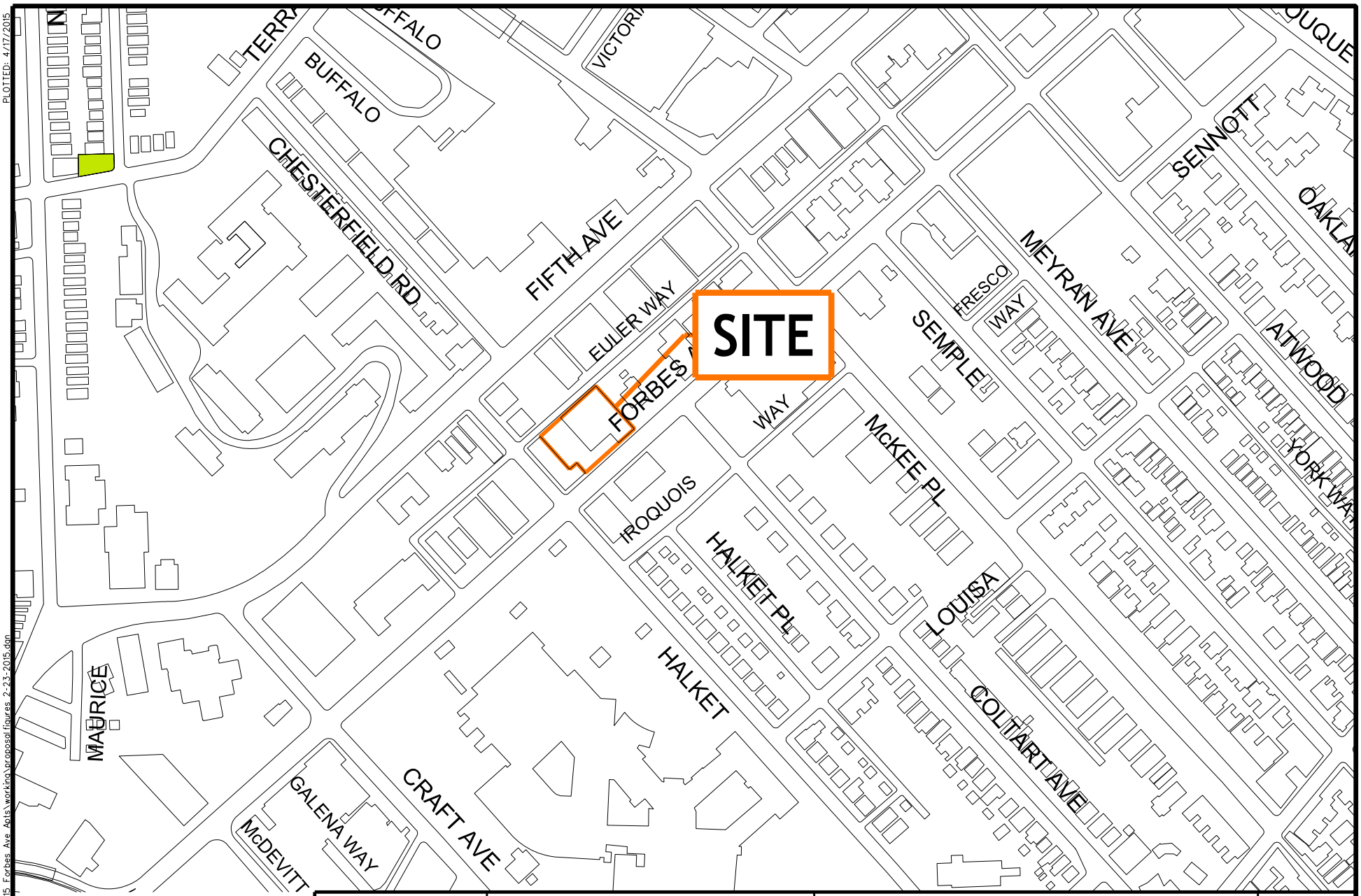
20.0	**OTHER TRANSPORTATION**					
20.1	**Shuttle Bus /Other Private Carrier Service Analysis**			**Yes**		**No** **x**
20.1.1	Identify Peak and Non Peak Routes			**Yes**		**No**
20.1.2	Identify Bus Stop Locations At or Near the Site			**Yes**		**No**
20.1.3	Indicate bus queuing lengths			**Yes**		**No**
20.1.4	Identify volume of trips/ headway			**Yes**		**No**
20.1.5	Indicate number of passengers served			**Yes**		**No**
20.1.6	Time of Day Operations			**Yes**		**No**
20.2	**School Buses** N/A					
20.2.1	Identify Peak and Non Peak Routes			**Yes**		**No**
20.2.2	Identify Bus Stop Locations At or Near the Site			**Yes**		**No**
20.2.3	Indicate bus queuing lengths and locations			**Yes**		**No**
20.2.4	Indicate number of students served			**Yes**		**No**
20.2.5	Time of Day operations			**Yes**		**No**

Comment:

21.0 SUBMISSION REQUIREMENTS

21.1	2 Copies	**Final Traffic Impact Study Report**	**1 - DCP**	**1 - DPW**	**Yes**	x	**No**
21.2		**Executive Summary**		**as part of report**	**Yes**	x	**No**
21.3	2 Copies	**Appendix**	**1 - DCP**	**1 - DPW**	**Yes**	x	**No**
21.4		**Form B (Include approved copy in Final Report)**		**all**	**Yes**	x	**No**
21.5		**Correspondence (Include in Final Report)**		**all**	**Yes**	x	**No**
21.6	1	**Digital copies of report, appendices, analysis and data**		**1 - Zoning**	**Yes**	x	**No**

Patrick D. Roberts
Principal Transportation Planner
Department of City Planning
412-255-2224



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PROJECT NO. CAMAD00 - 15061

PROJECT: 3407 and 3415 Forbes Avenue Apartments
Transportation Impact Study

TITLE:

Site Location

FIGURE

1

D.B. CAD
C.B. CAJ
REV.

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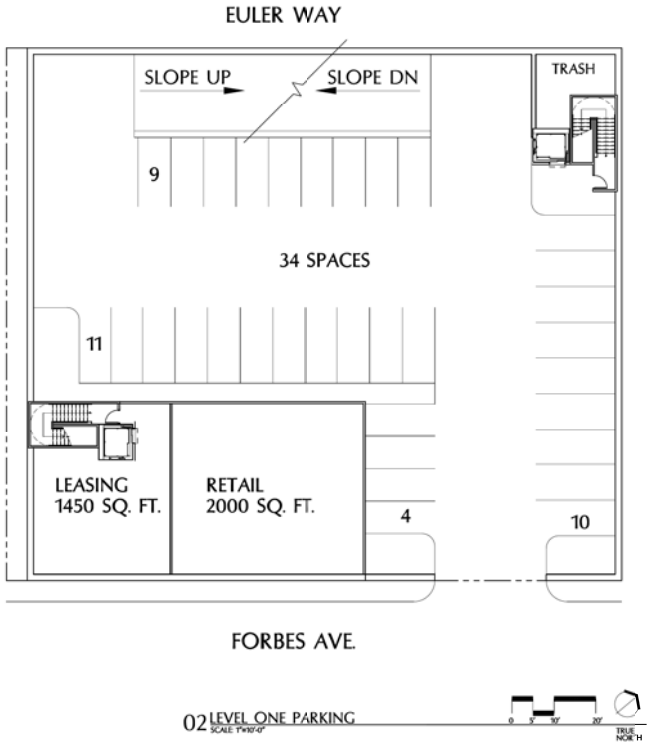

02 LEVEL ONE PARKING
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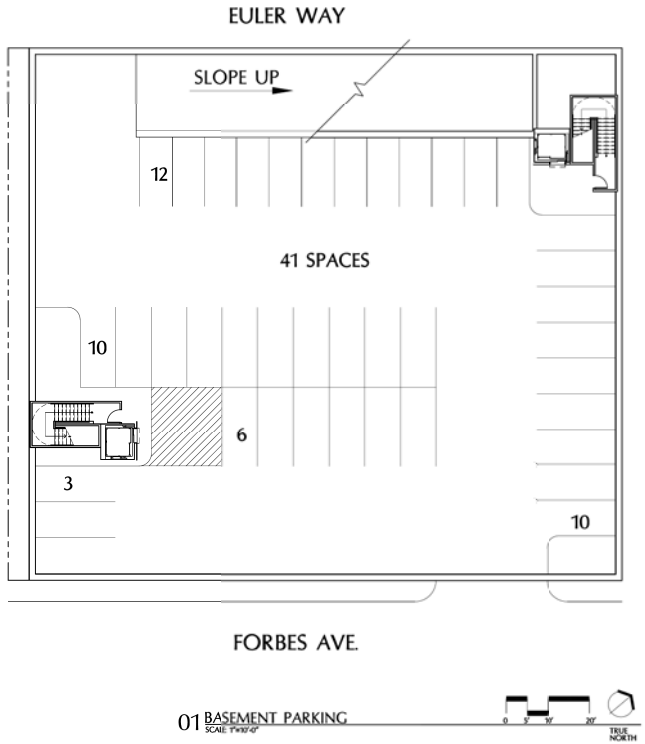

01 BASEMENT PARKING
SCALE: 1"=10'-0"

3415 FORBES AVENUE
PITTSBURGH, PENNSYLVANIA 15213

CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS AT THE JOB SITE AND NOTIFY THE ARCHITECTS OF ANY DIMENSIONAL ERRORS, OMISSIONS OR DISCREPANCIES BEFORE BEGINNING OF FABRICATING ANY WORK. DO NOT SCALE OFF DRAWINGS.

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BASEMENT & LEVEL ONE PARKING

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Transportation Impact Study

TITLE: Site Plan
Basement & Level 1

FIGURE
2a

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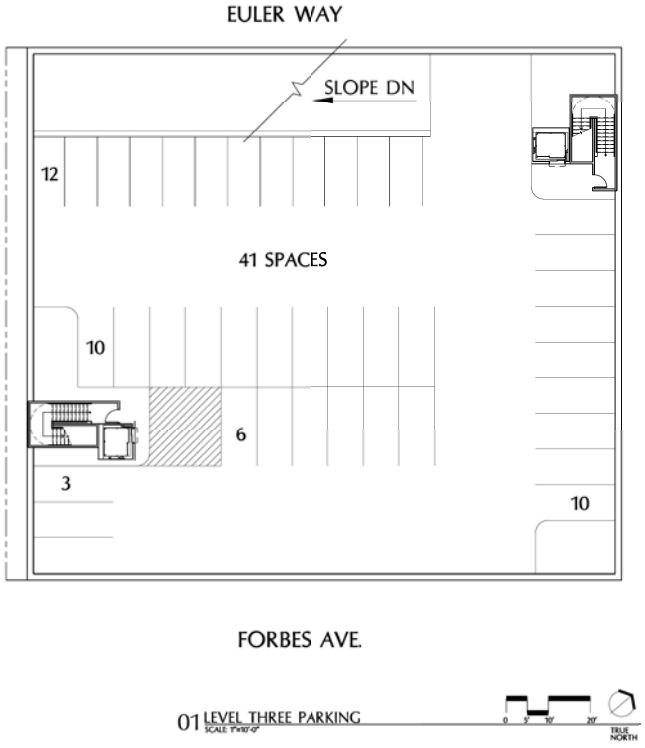

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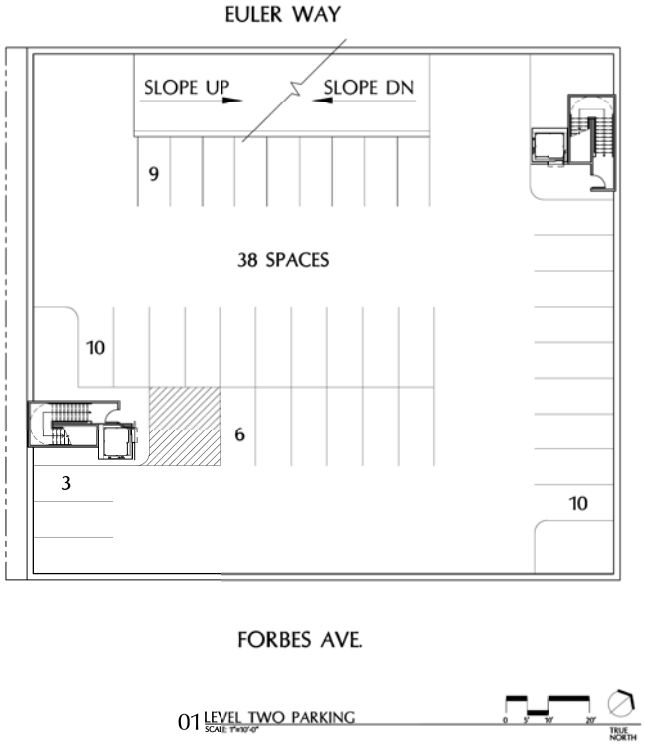

01 LEVEL TWO PARKING
SCALE: 1"=10'-0"

3415 FORBES AVENUE
PITTSBURGH, PENNSYLVANIA 15213

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LEVEL TWO & THREE PARKING

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PROJECT: 3407 and 3415 Forbes Avenue Apartments
Transportation Impact Study

TITLE:
Site Plan
Level 2 & 3

FIGURE
2b

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REV.

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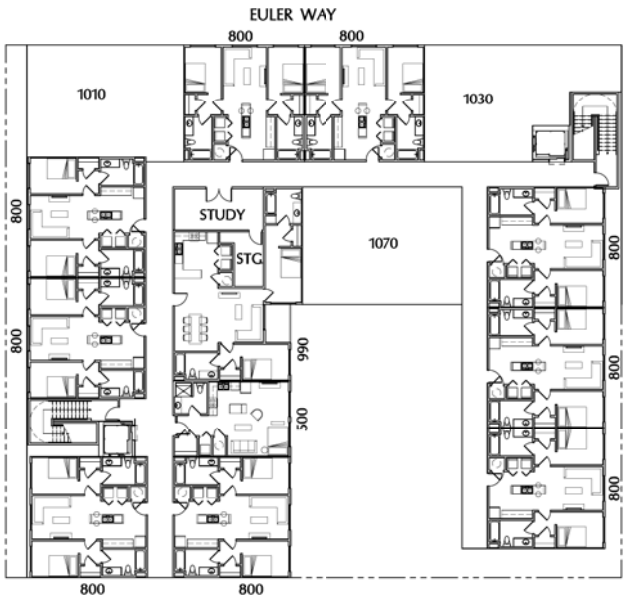

01 LEVELS 5-12 RESIDENTIAL UNITS
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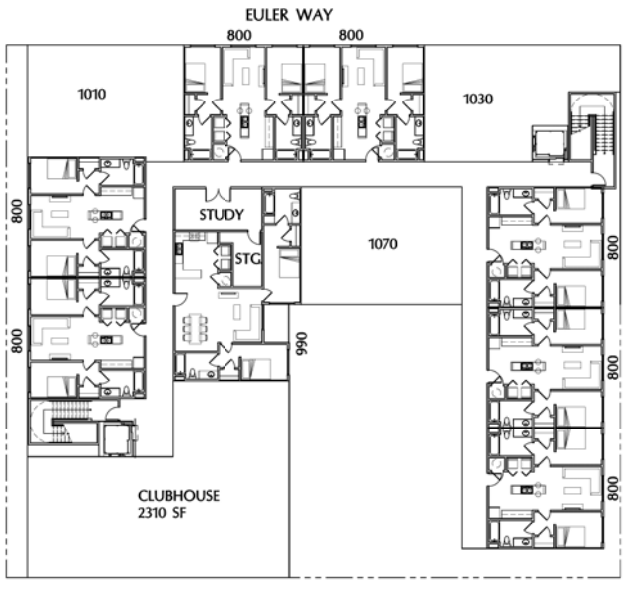

01 LEVEL FOUR RESIDENTIAL UNITS
SCALE 1"=10'-0"

3415 FORBES AVENUE
PITTSBURGH, PENNSYLVANIA 15213

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LEVEL 3-9 RESIDENTIAL UNITS

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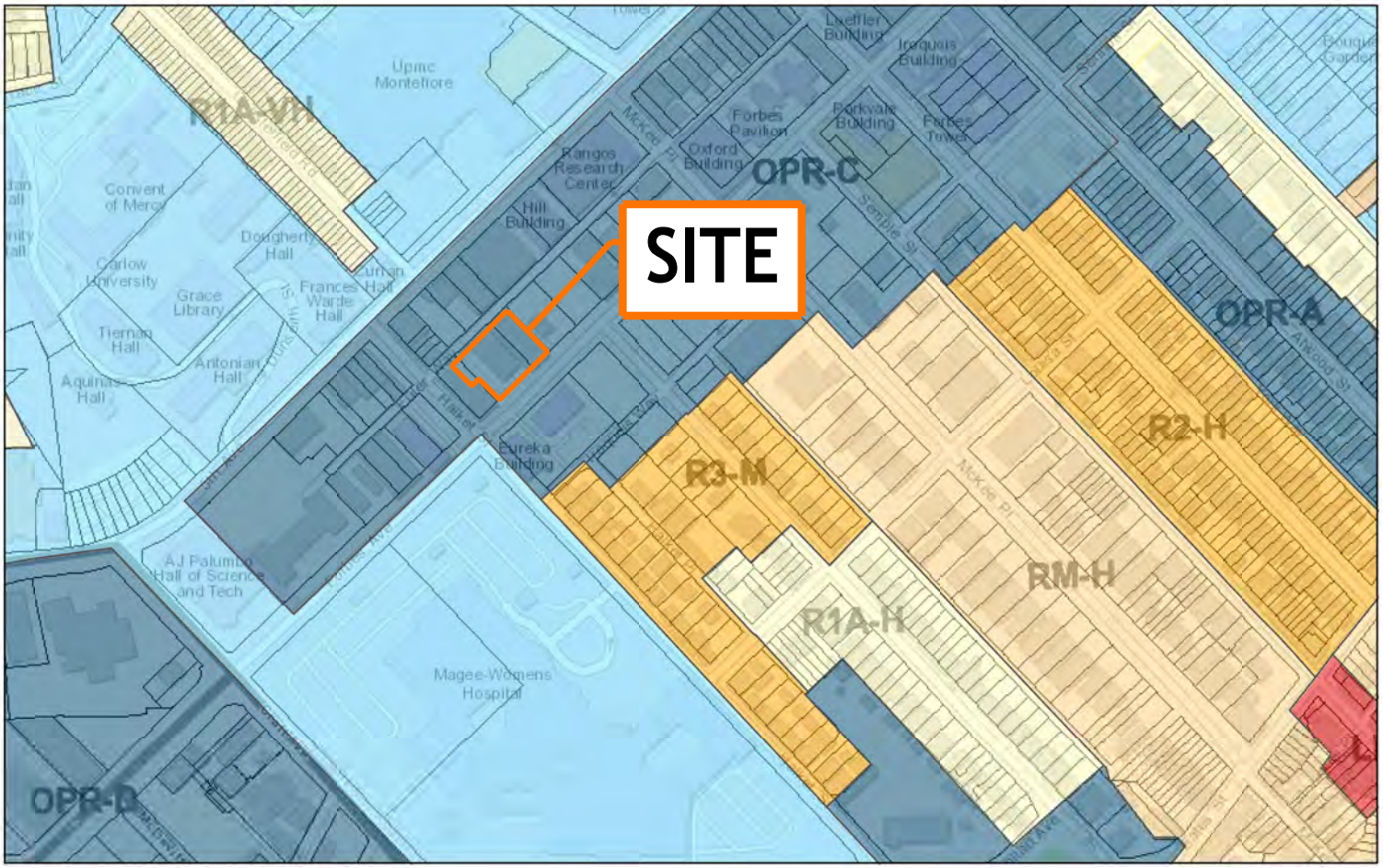
PROJECT NO. CAMAD00 - 15061

PROJECT: 3407 and 3415 Forbes Avenue Apartments
Transportation Impact Study

TITLE:
Site Plan
Levels 4 - 12

FIGURE
2c

D.B. CAD
C.B. CAJ
REV.



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PROJECT NO. CAMAD00 - 15061

PROJECT: 3407 and 3415 Forbes Avenue Apartments
Transportation Impact Study

TITLE:
City of Pittsburgh Zoning Map

FIGURE
3

D.B. CAD
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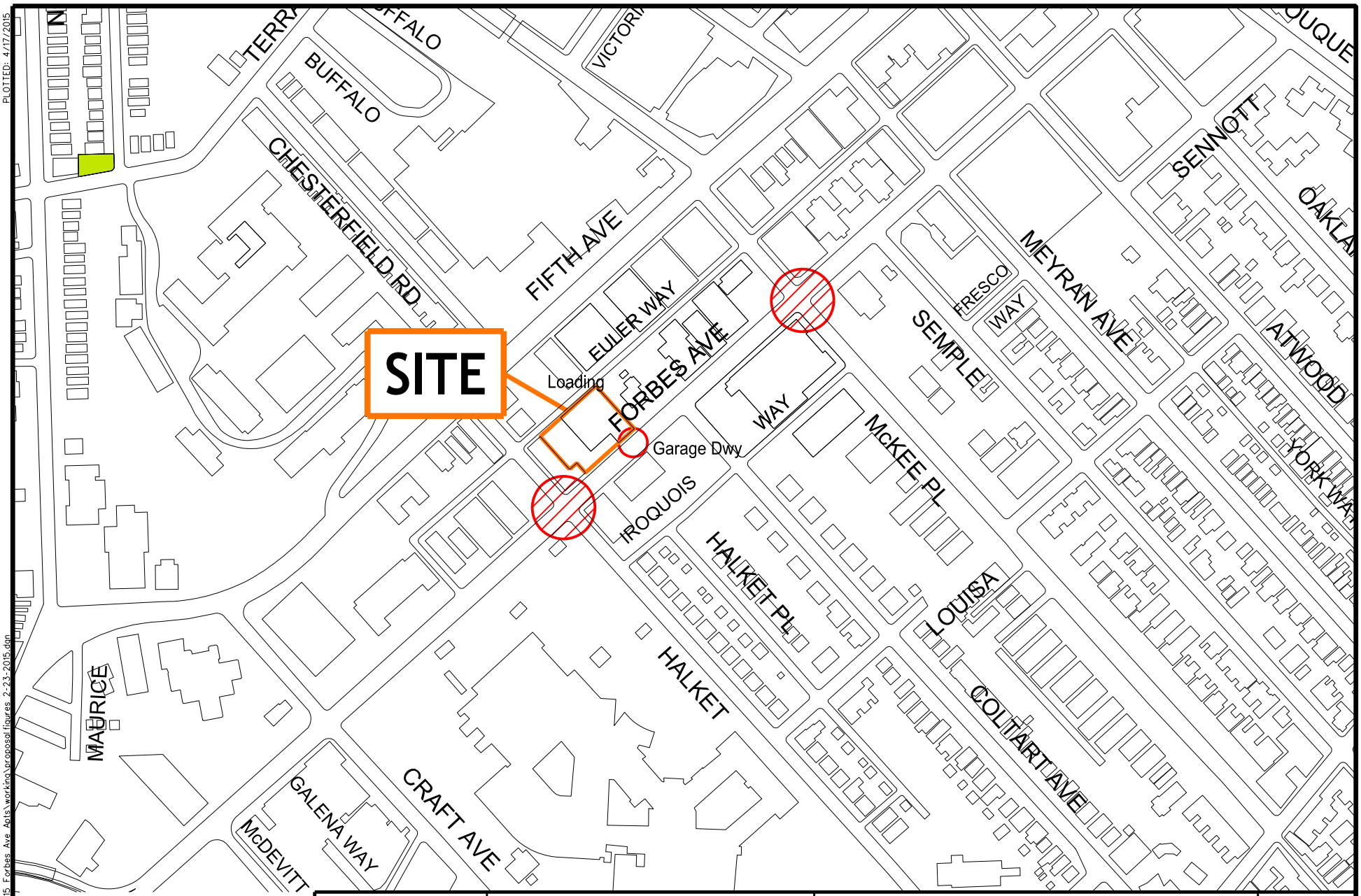
REV.



Legend:

- Signalized Study Intersection
- Unsignalized Study Intersection

N

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PROJECT NO. CAMAD00 - 15061

PROJECT: 3407 and 3415 Forbes Avenue Apartments
Transportation Impact Study

TITLE: Study Intersections

FIGURE 4

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Turning Movement Counts

Trans Associates

Twin Tower, Suite 400
4955 Steubenville Pike
Pittsburgh, PA, 15205

Forbes Avenue and Halket Street

File Name : maifl00_15061_#1_AM
Site Code : 15061001
Start Date : 4/16/2015
Page No : 1

Groups Printed- Typical Vehicles - Heavy Duty Vehicles

	Forbes Avenue Eastbound					Forbes Avenue Westbound					Halket Street Northbound					Halket Street Southbound					
Start Time	Left	Thru	Right	Rt. on Red	App. Total	Left	Thru	Right	Rt. on Red	App. Total	Left	Thru	Right	Rt. on Red	App. Total	Left	Thru	Right	Rt. on Red	App. Total	Int. Total
07:00 AM	40	368	28	0	436	0	0	0	0	0	0	13	22	0	35	2	42	0	0	44	515
07:15 AM	19	364	17	1	401	0	0	0	0	0	0	19	30	0	49	5	31	0	0	36	486
07:30 AM	21	358	27	0	406	0	0	0	0	0	0	25	22	0	47	12	52	0	0	64	517
07:45 AM	27	404	10	0	441	0	0	0	0	0	0	29	43	0	72	8	49	0	0	57	570
Total	107	1494	82	1	1684	0	0	0	0	0	0	86	117	0	203	27	174	0	0	201	2088
08:00 AM	19	401	15	0	435	0	0	0	0	0	0	20	26	0	46	6	38	0	0	44	525
08:15 AM	17	388	19	0	424	0	0	0	0	0	0	21	25	0	46	13	35	0	0	48	518
08:30 AM	20	382	17	0	419	0	0	0	0	0	0	24	44	0	68	6	41	0	0	47	534
08:45 AM	24	398	20	0	442	0	0	0	0	0	0	13	35	0	48	9	36	0	0	45	535
Total	80	1569	71	0	1720	0	0	0	0	0	0	78	130	0	208	34	150	0	0	184	2112
Grand Total	187	3063	153	1	3404	0	0	0	0	0	0	164	247	0	411	61	324	0	0	385	4200
Apprch %	5.5	90	4.5	0		0	0	0	0		0	39.9	60.1	0		15.8	84.2	0	0		
Total %	4.5	72.9	3.6	0	81	0	0	0	0	0	0	3.9	5.9	0	9.8	1.5	7.7	0	0	9.2	
Typical Vehicles	172	2934	149	1	3256	0	0	0	0	0	0	160	220	0	380	60	300	0	0	360	3996
% Typical Vehicles	92	95.8	97.4	100	95.7	0	0	0	0	0	0	97.6	89.1	0	92.5	98.4	92.6	0	0	93.5	95.1
Heavy Duty Vehicles																					
% Heavy Duty Vehicles	8	4.2	2.6	0	4.3	0	0	0	0	0	0	2.4	10.9	0	7.5	1.6	7.4	0	0	6.5	4.9

Trans Associates

Twin Tower, Suite 400
4955 Steubenville Pike
Pittsburgh, PA, 15205

Forbes Avenue and Halket Street

File Name : maifl00_15061_#1_AM
Site Code : 15061001
Start Date : 4/16/2015

	Forbes Avenue Eastbound					Forbes Avenue Westbound					Halket Street Northbound					Halket Street Southbound					
Start Time	Left	Thru	Right	Rt. on Red	App. Total	Left	Thru	Right	Rt. on Red	App. Total	Left	Thru	Right	Rt. on Red	App. Total	Left	Thru	Right	Rt. on Red	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	21	358	**27**	0	406	0	0	0	0	0	0	25	22	0	47	12	**52**	0	0	**64**	517
07:45 AM	**27**	**404**	10	0	**441**	0	0	0	0	0	0	**29**	**43**	0	**72**	8	49	0	0	57	**570**
08:00 AM	19	401	15	0	435	0	0	0	0	0	0	20	26	0	46	6	38	0	0	44	525
08:15 AM	17	388	19	0	424	0	0	0	0	0	0	21	25	0	46	**13**	35	0	0	48	518
Total Volume	84	1551	71	0	1706	0	0	0	0	0	0	95	116	0	211	39	174	0	0	213	2130
% App. Total	4.9	90.9	4.2	0		0	0	0	0		0	45	55	0		18.3	81.7	0	0		
PHF	.778	.960	.657	.000	.967	.000	.000	.000	.000	.000	.000	.819	.674	.000	.733	.750	.837	.000	.000	.832	.934
Typical Vehicles	78	1491	68	0	1637	0	0	0	0	0	0	92	104	0	196	38	154	0	0	192	2025
% Typical Vehicles	92.9	96.1	95.8	0	96.0	0	0	0	0	0	0	96.8	89.7	0	92.9	97.4	88.5	0	0	90.1	95.1
Heavy Duty Vehicles																					
% Heavy Duty Vehicles	7.1	3.9	4.2	0	4.0	0	0	0	0	0	0	3.2	10.3	0	7.1	2.6	11.5	0	0	9.9	4.9

Trans Associates

Twin Tower, Suite 400
4955 Steubenville Pike
Pittsburgh, PA, 15205

Forbes Avenue and Halket Street
Pedestrains

File Name : maifl00_15061_#1_AM_peds
Site Code : 15061pd1
Start Date : 4/16/2015
Page No : 1

Groups Printed- Pedestrains

	Forbes Avenue Eastbound					Forbes Avenue Westbound					Halket Street Northbound					Halket Street Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
07:00 AM	11	0	0	14	25	4	0	0	2	6	0	0	0	15	15	0	0	0	0	0	46
07:15 AM	13	0	0	6	19	8	0	0	10	18	8	0	0	3	11	5	0	0	4	9	57
07:30 AM	18	0	0	2	20	7	0	0	9	16	4	0	0	3	7	3	0	0	5	8	51
07:45 AM	17	0	0	5	22	17	0	0	8	25	11	0	0	3	14	4	0	0	2	6	67
Total	59	0	0	27	86	36	0	0	29	65	23	0	0	24	47	12	0	0	11	23	221
08:00 AM	11	0	0	6	17	6	0	0	4	10	6	0	0	5	11	0	0	0	1	1	39
08:15 AM	17	0	0	4	21	12	0	0	5	17	13	0	0	5	18	0	0	0	0	0	56
08:30 AM	9	0	0	15	24	7	0	0	3	10	7	0	0	8	15	1	0	0	10	11	60
08:45 AM	8	0	0	17	25	12	0	0	6	18	16	0	0	8	24	4	0	0	3	7	74
Total	45	0	0	42	87	37	0	0	18	55	42	0	0	26	68	5	0	0	14	19	229
Grand Total	104	0	0	69	173	73	0	0	47	120	65	0	0	50	115	17	0	0	25	42	450
Apprch %	60.1	0	0	39.9		60.8	0	0	39.2		56.5	0	0	43.5		40.5	0	0	59.5		
Total %	23.1	0	0	15.3	38.4	16.2	0	0	10.4	26.7	14.4	0	0	11.1	25.6	3.8	0	0	5.6	9.3	

	Forbes Avenue Eastbound					Forbes Avenue Westbound					Halket Street Northbound					Halket Street Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	**18**	0	0	2	20	7	0	0	**9**	16	4	0	0	3	7	3	0	0	**5**	**8**	51
07:45 AM	17	0	0	5	**22**	**17**	0	0	8	**25**	11	0	0	3	14	**4**	0	0	2	6	**67**
08:00 AM	11	0	0	**6**	17	6	0	0	4	10	6	0	0	**5**	11	0	0	0	1	1	39
08:15 AM	17	0	0	4	21	12	0	0	5	17	**13**	0	0	5	**18**	0	0	0	0	0	56
Total Volume	63	0	0	17	80	42	0	0	26	68	34	0	0	16	50	7	0	0	8	15	213
% App. Total	78.8	0	0	21.2		61.8	0	0	38.2		68	0	0	32		46.7	0	0	53.3		
PHF	.875	.000	.000	.708	.909	.618	.000	.000	.722	.680	.654	.000	.000	.800	.694	.438	.000	.000	.400	.469	.795

Trans Associates

Twin Tower, Suite 400
4955 Steubenville Pike
Pittsburgh, PA, 15205

Forbes Avenue and Halket Street
Bicycles

File Name : maifl00_15061_#1_AM_bikes
Site Code : 15061bc1
Start Date : 4/16/2015
Page No : 1

Groups Printed- Bicycles

	Forbes Avenue Eastbound					Forbes Avenue Westbound					Halket Street Northbound					Halket Street Southbound					
Start Time	Left	Thru	Right	Rt. on Red	App. Total	Left	Thru	Right	Rt. on Red	App. Total	Left	Thru	Right	Rt. on Red	App. Total	Left	Thru	Right	Rt. on Red	App. Total	Int. Total
07:00 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	4
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:45 AM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Grand Total	0	5	0	0	5	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	7
Apprch %	0	100	0	0		0	0	0	0		0	100	0	0		0	100	0	0		
Total %	0	71.4	0	0	71.4	0	0	0	0	0	0	14.3	0	0	14.3	0	14.3	0	0	14.3	

	Forbes Avenue Eastbound					Forbes Avenue Westbound					Halket Street Northbound					Halket Street Southbound					
Start Time	Left	Thru	Right	Rt. on Red	App. Total	Left	Thru	Right	Rt. on Red	App. Total	Left	Thru	Right	Rt. on Red	App. Total	Left	Thru	Right	Rt. on Red	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	**1**	0	0	**1**	0	0	0	0	0	0	**1**	0	0	**1**	0	0	0	0	0	**2**
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
% App. Total	0	100	0	0		0	0	0	0		0	100	0	0		0	0	0	0		
PHF	.000	.250	.000	.000	.250	.000	.000	.000	.000	.000	.000	.250	.000	.000	.250	.000	.000	.000	.000	.000	.250

Trans Associates

Twin Tower, Suite 400
4955 Steubenville Pike
Pittsburgh, PA, 15205

Forbes Avenue and McKee Place

File Name : maifl00_15061_#2_AM
Site Code : 01506102
Start Date : 4/14/2015
Page No : 1

Groups Printed- Typical Vehicles - Heavy Duty Vehicles

	Forbes Avenue Eastbound					Forbes Avenue Westbound					McKee Place Northbound					McKee Place Southbound					
Start Time	Left	Thru	Right	Rt. on Red	App. Total	Left	Thru	Right	Rt. on Red	App. Total	Left	Thru	Right	Rt. on Red	App. Total	Left	Thru	Right	Rt. on Red	App. Total	Int. Total
07:00 AM	73	304	13	0	390	0	0	0	0	0	0	56	11	0	67	14	56	0	0	70	527
07:15 AM	88	296	20	1	405	0	0	0	0	0	0	38	8	0	46	13	43	0	0	56	507
07:30 AM	73	334	12	0	419	0	0	0	0	0	0	48	16	0	64	13	43	0	0	56	539
07:45 AM	85	335	16	0	436	0	0	0	0	0	0	51	9	0	60	25	50	0	0	75	571
Total	319	1269	61	1	1650	0	0	0	0	0	0	193	44	0	237	65	192	0	0	257	2144
08:00 AM	80	366	17	0	463	0	0	0	0	0	0	62	16	0	78	20	54	0	0	74	615
08:15 AM	84	343	19	0	446	0	0	0	0	0	0	58	13	0	71	19	34	0	0	53	570
08:30 AM	62	294	16	0	372	0	0	0	0	0	0	66	10	0	76	25	44	0	0	69	517
08:45 AM	77	310	20	0	407	0	0	0	0	0	0	43	16	0	59	15	31	0	0	46	512
Total	303	1313	72	0	1688	0	0	0	0	0	0	229	55	0	284	79	163	0	0	242	2214
Grand Total	622	2582	133	1	3338	0	0	0	0	0	0	422	99	0	521	144	355	0	0	499	4358
Apprch %	18.6	77.4	4	0		0	0	0	0		0	81	19	0		28.9	71.1	0	0		
Total %	14.3	59.2	3.1	0	76.6	0	0	0	0	0	0	9.7	2.3	0	12	3.3	8.1	0	0	11.5	
Typical Vehicles	614	2429	131	1	3175	0	0	0	0	0	0	411	88	0	499	129	344	0	0	473	4147
% Typical Vehicles	98.7	94.1	98.5	100	95.1	0	0	0	0	0	0	97.4	88.9	0	95.8	89.6	96.9	0	0	94.8	95.2
Heavy Duty Vehicles																					
% Heavy Duty Vehicles	1.3	5.9	1.5	0	4.9	0	0	0	0	0	0	2.6	11.1	0	4.2	10.4	3.1	0	0	5.2	4.8

Trans Associates

Twin Tower, Suite 400
4955 Steubenville Pike
Pittsburgh, PA, 15205

Forbes Avenue and McKee Place

File Name : maifl00_15061_#2_AM
Site Code : 01506102
Start Date : 4/14/2015
Page No : 2

	Forbes Avenue Eastbound					Forbes Avenue Westbound					McKee Place Northbound					McKee Place Southbound					
Start Time	Left	Thru	Right	Rt. on Red	App. Total	Left	Thru	Right	Rt. on Red	App. Total	Left	Thru	Right	Rt. on Red	App. Total	Left	Thru	Right	Rt. on Red	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	73	334	12	0	419	0	0	0	0	0	0	48	**16**	0	64	13	43	0	0	56	539
07:45 AM	**85**	335	16	0	436	0	0	0	0	0	0	51	9	0	60	**25**	50	0	0	**75**	571
08:00 AM	80	**366**	17	0	**463**	0	0	0	0	0	0	**62**	16	0	**78**	20	**54**	0	0	74	**615**
08:15 AM	84	343	**19**	0	446	0	0	0	0	0	0	58	13	0	71	19	34	0	0	53	570
Total Volume	322	1378	64	0	1764	0	0	0	0	0	0	219	54	0	273	77	181	0	0	258	2295
% App. Total	18.3	78.1	3.6	0		0	0	0	0		0	80.2	19.8	0		29.8	70.2	0	0		
PHF	.947	.941	.842	.000	.952	.000	.000	.000	.000	.000	.000	.883	.844	.000	.875	.770	.838	.000	.000	.860	.933
Typical Vehicles	320	1307	62	0	1689	0	0	0	0	0	0	215	49	0	264	70	175	0	0	245	2198
% Typical Vehicles	99.4	94.8	96.9	0	95.7	0	0	0	0	0	0	98.2	90.7	0	96.7	90.9	96.7	0	0	95.0	95.8
Heavy Duty Vehicles																					
% Heavy Duty Vehicles	0.6	5.2	3.1	0	4.3	0	0	0	0	0	0	1.8	9.3	0	3.3	9.1	3.3	0	0	5.0	4.2

Trans Associates

Twin Tower, Suite 400
4955 Steubenville Pike
Pittsburgh, PA, 15205

Forbes Avenue and McKee Place
Pedestrains

File Name : maifl00_15061_#2_AM_peds
Site Code : 15061pd2
Start Date : 4/14/2015
Page No : 1

Groups Printed- Pedestrains

	Forbes Avenue Eastbound					Forbes Avenue Westbound					McKee Place Northbound					McKee Place Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
07:00 AM	5	0	0	21	26	24	0	0	0	24	17	0	0	9	26	0	0	0	7	7	83
07:15 AM	3	0	0	19	22	14	0	0	1	15	8	0	0	7	15	2	0	0	9	11	63
07:30 AM	11	0	0	13	24	23	0	0	3	26	29	0	0	21	50	9	0	0	7	16	116
07:45 AM	11	0	0	17	28	33	0	0	7	40	21	0	0	29	50	12	0	0	19	31	149
Total	30	0	0	70	100	94	0	0	11	105	75	0	0	66	141	23	0	0	42	65	411
08:00 AM	12	0	0	17	29	30	0	0	6	36	26	0	0	20	46	11	0	0	13	24	135
08:15 AM	10	0	0	15	25	34	0	0	8	42	36	0	0	14	50	8	0	0	7	15	132
08:30 AM	5	0	0	18	23	45	0	0	4	49	34	0	0	10	44	10	0	0	18	28	144
08:45 AM	12	0	0	15	27	29	0	0	4	33	31	0	0	23	54	14	0	0	15	29	143
Total	39	0	0	65	104	138	0	0	22	160	127	0	0	67	194	43	0	0	53	96	554
Grand Total	69	0	0	135	204	232	0	0	33	265	202	0	0	133	335	66	0	0	95	161	965
Apprch %	33.8	0	0	66.2		87.5	0	0	12.5		60.3	0	0	39.7		41	0	0	59		
Total %	7.2	0	0	14	21.1	24	0	0	3.4	27.5	20.9	0	0	13.8	34.7	6.8	0	0	9.8	16.7	

	Forbes Avenue Eastbound					Forbes Avenue Westbound					McKee Place Northbound					McKee Place Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	11	0	0	13	24	23	0	0	3	26	29	0	0	21	**50**	9	0	0	7	16	116
07:45 AM	11	0	0	**17**	28	33	0	0	7	40	21	0	0	**29**	50	**12**	0	0	**19**	**31**	**149**
08:00 AM	**12**	0	0	17	**29**	30	0	0	6	36	26	0	0	20	46	11	0	0	13	24	135
08:15 AM	10	0	0	15	25	**34**	0	0	**8**	**42**	**36**	0	0	14	50	8	0	0	7	15	132
Total Volume	44	0	0	62	106	120	0	0	24	144	112	0	0	84	196	40	0	0	46	86	532
% App. Total	41.5	0	0	58.5		83.3	0	0	16.7		57.1	0	0	42.9		46.5	0	0	53.5		
PHF	.917	.000	.000	.912	.914	.882	.000	.000	.750	.857	.778	.000	.000	.724	.980	.833	.000	.000	.605	.694	.893

Trans Associates

Twin Tower, Suite 400
4955 Steubenville Pike
Pittsburgh, PA, 15205

Forbes Avenue and McKee Place
Bicycles

File Name : maifl00_15061_#2_AM_bikes
Site Code : 15061bc2
Start Date : 4/14/2015
Page No : 1

Groups Printed- Bicycles

	Forbes Avenue Eastbound					Forbes Avenue Westbound					McKee Place Northbound					McKee Place Southbound					
Start Time	Left	Thru	Right	Rt. on Red	App. Total	Left	Thru	Right	Rt. on Red	App. Total	Left	Thru	Right	Rt. on Red	App. Total	Left	Thru	Right	Rt. on Red	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	1	0	0	1	3
Grand Total	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	0	1	0	0	1	5
Apprch %	0	100	0	0		0	0	0	0		0	100	0	0		0	100	0	0		
Total %	0	40	0	0	40	0	0	0	0	0	0	40	0	0	40	0	20	0	0	20	

	Forbes Avenue Eastbound					Forbes Avenue Westbound					McKee Place Northbound					McKee Place Southbound					
Start Time	Left	Thru	Right	Rt. on Red	App. Total	Left	Thru	Right	Rt. on Red	App. Total	Left	Thru	Right	Rt. on Red	App. Total	Left	Thru	Right	Rt. on Red	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0	**1**	0	0	0	0	0	**1**
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0	**1**	1
Total Volume	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	2
% App. Total	0	0	0	0		0	0	0	0		0	100	0	0		0	100	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.000	.250	.000	.250	.000	.000	.250	.500

Trans Associates

Twin Tower, Suite 400
4955 Steubenville Pike
Pittsburgh, PA, 15205

Forbes Avenue and Halket Street

File Name : maifl00_15061_#1_PM
Site Code : 15061001
Start Date : 4/16/2015
Page No : 1

Groups Printed- Typical Vehicles - Heavy Duty Vehicles

	Forbes Avenue Eastbound					Forbes Avenue Westbound					Halket Street Northbound					Halket Street Southbound					
Start Time	Left	Thru	Right	Rt. on Red	App. Total	Left	Thru	Right	Rt. on Red	App. Total	Left	Thru	Right	Rt. on Red	App. Total	Left	Thru	Right	Rt. on Red	App. Total	Int. Total
04:00 PM	8	282	16	0	306	0	0	0	0	0	0	24	43	1	68	17	51	0	0	68	442
04:15 PM	6	271	24	0	301	0	0	0	0	0	0	22	40	0	62	8	48	0	0	56	419
04:30 PM	17	328	31	0	376	0	0	0	0	0	0	34	45	0	79	15	68	0	0	83	538
04:45 PM	6	314	28	0	348	0	0	0	0	0	0	22	32	0	54	14	53	0	0	67	469
Total	37	1195	99	0	1331	0	0	0	0	0	0	102	160	1	263	54	220	0	0	274	1868
05:00 PM	2	319	39	0	360	0	0	0	0	0	0	30	35	0	65	17	38	0	0	55	480
05:15 PM	6	323	35	0	364	0	0	0	0	0	0	26	39	0	65	7	50	0	0	57	486
05:30 PM	9	360	43	0	412	0	0	0	0	0	0	19	25	0	44	15	54	0	0	69	525
05:45 PM	4	272	16	0	292	0	0	0	0	0	0	9	28	0	37	9	26	0	0	35	364
Total	21	1274	133	0	1428	0	0	0	0	0	0	84	127	0	211	48	168	0	0	216	1855
Grand Total	58	2469	232	0	2759	0	0	0	0	0	0	186	287	1	474	102	388	0	0	490	3723
Apprch %	2.1	89.5	8.4	0		0	0	0	0		0	39.2	60.5	0.2		20.8	79.2	0	0		
Total %	1.6	66.3	6.2	0	74.1	0	0	0	0	0	0	5	7.7	0	12.7	2.7	10.4	0	0	13.2	
Typical Vehicles	58	2390	230	0	2678	0	0	0	0	0	0	184	258	1	443	102	385	0	0	487	3608
% Typical Vehicles	100	96.8	99.1	0	97.1	0	0	0	0	0	0	98.9	89.9	100	93.5	100	99.2	0	0	99.4	96.9
Heavy Duty Vehicles																					
% Heavy Duty Vehicles	0	3.2	0.9	0	2.9	0	0	0	0	0	0	1.1	10.1	0	6.5	0	0.8	0	0	0.6	3.1

Trans Associates

Twin Tower, Suite 400
4955 Steubenville Pike
Pittsburgh, PA, 15205

Forbes Avenue and Halket Street

File Name : maifl00_15061_#1_PM
Site Code : 15061001
Start Date : 4/16/2015

	Forbes Avenue Eastbound					Forbes Avenue Westbound					Halket Street Northbound					Halket Street Southbound					
Start Time	Left	Thru	Right	Rt. on Red	App. Total	Left	Thru	Right	Rt. on Red	App. Total	Left	Thru	Right	Rt. on Red	App. Total	Left	Thru	Right	Rt. on Red	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	6	314	28	0	348	0	0	0	0	0	0	22	32	0	54	14	53	0	0	67	469
05:00 PM	2	319	39	0	360	0	0	0	0	0	0	**30**	35	0	**65**	**17**	38	0	0	55	480
05:15 PM	6	323	35	0	364	0	0	0	0	0	0	26	**39**	0	65	7	50	0	0	57	486
05:30 PM	**9**	**360**	**43**	0	**412**	0	0	0	0	0	0	19	25	0	44	15	**54**	0	0	**69**	**525**
Total Volume	23	1316	145	0	1484	0	0	0	0	0	0	97	131	0	228	53	195	0	0	248	1960
% App. Total	1.5	88.7	9.8	0		0	0	0	0		0	42.5	57.5	0		21.4	78.6	0	0		
PHF	.639	.914	.843	.000	.900	.000	.000	.000	.000	.000	.000	.808	.840	.000	.877	.779	.903	.000	.000	.899	.933
Typical Vehicles	23	1281	144	0	1448	0	0	0	0	0	0	96	118	0	214	53	195	0	0	248	1910
% Typical Vehicles	100	97.3	99.3	0	97.6	0	0	0	0	0	0	99.0	90.1	0	93.9	100	100	0	0	100	97.4
Heavy Duty Vehicles																					
% Heavy Duty Vehicles	0	2.7	0.7	0	2.4	0	0	0	0	0	0	1.0	9.9	0	6.1	0	0	0	0	0	2.6

Trans Associates

Twin Tower, Suite 400
4955 Steubenville Pike
Pittsburgh, PA, 15205

Forbes Avenue and Halket Street
Pedestrains

File Name : maifl00_15061_#1_PM_peds
Site Code : 15061pd1
Start Date : 4/16/2015
Page No : 1

Groups Printed- Pedestrains

	Forbes Avenue Eastbound					Forbes Avenue Westbound					Halket Street Northbound					Halket Street Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
04:00 PM	16	0	0	18	34	13	0	0	6	19	16	0	0	11	27	8	0	0	16	24	104
04:15 PM	14	0	0	15	29	14	0	0	10	24	19	0	0	9	28	6	0	0	6	12	93
04:30 PM	22	0	0	15	37	5	0	0	9	14	22	0	0	18	40	13	0	0	6	19	110
04:45 PM	12	0	0	15	27	22	0	0	18	40	12	0	0	16	28	6	0	0	15	21	116
Total	64	0	0	63	127	54	0	0	43	97	69	0	0	54	123	33	0	0	43	76	423
05:00 PM	12	0	0	20	32	7	0	0	14	21	8	0	0	9	17	8	0	0	9	17	87
05:15 PM	4	0	0	10	14	3	0	0	13	16	17	0	0	12	29	2	0	0	5	7	66
05:30 PM	10	0	0	10	20	7	0	0	12	19	17	0	0	12	29	3	0	0	6	9	77
05:45 PM	6	0	0	5	11	8	0	0	13	21	9	0	0	6	15	4	0	0	4	8	55
Total	32	0	0	45	77	25	0	0	52	77	51	0	0	39	90	17	0	0	24	41	285
Grand Total	96	0	0	108	204	79	0	0	95	174	120	0	0	93	213	50	0	0	67	117	708
Apprch %	47.1	0	0	52.9		45.4	0	0	54.6		56.3	0	0	43.7		42.7	0	0	57.3		
Total %	13.6	0	0	15.3	28.8	11.2	0	0	13.4	24.6	16.9	0	0	13.1	30.1	7.1	0	0	9.5	16.5	

	Forbes Avenue Eastbound					Forbes Avenue Westbound					Halket Street Northbound					Halket Street Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	**12**	0	0	15	27	**22**	0	0	**18**	**40**	12	0	0	**16**	28	6	0	0	**15**	**21**	**116**
05:00 PM	12	0	0	**20**	**32**	7	0	0	14	21	8	0	0	9	17	**8**	0	0	9	17	87
05:15 PM	4	0	0	10	14	3	0	0	13	16	**17**	0	0	12	**29**	2	0	0	5	7	66
05:30 PM	10	0	0	10	20	7	0	0	12	19	17	0	0	12	29	3	0	0	6	9	77
Total Volume	38	0	0	55	93	39	0	0	57	96	54	0	0	49	103	19	0	0	35	54	346
% App. Total	40.9	0	0	59.1		40.6	0	0	59.4		52.4	0	0	47.6		35.2	0	0	64.8		
PHF	.792	.000	.000	.688	.727	.443	.000	.000	.792	.600	.794	.000	.000	.766	.888	.594	.000	.000	.583	.643	.746

Trans Associates

Twin Tower, Suite 400
4955 Steubenville Pike
Pittsburgh, PA, 15205

Forbes Avenue and Halket Street
Bicycles

File Name : maifl00_15061_#1_PM_bikes
Site Code : 15061bc1
Start Date : 4/16/2015
Page No : 1

Groups Printed- Bicycles

	Forbes Avenue Eastbound					Forbes Avenue Westbound					Halket Street Northbound					Halket Street Southbound					
Start Time	Left	Thru	Right	Rt. on Red	App. Total	Left	Thru	Right	Rt. on Red	App. Total	Left	Thru	Right	Rt. on Red	App. Total	Left	Thru	Right	Rt. on Red	App. Total	Int. Total
04:00 PM	0	3	0	0	3	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	4
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
04:30 PM	1	1	0	0	2	0	0	0	0	0	0	0	1	0	1	2	0	0	0	2	5
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Total	1	4	0	0	5	0	0	0	0	0	0	0	2	0	2	2	2	0	0	4	11
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
05:15 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
05:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	3
05:45 PM	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
Total	0	4	0	0	4	0	0	0	0	0	0	2	0	0	2	0	3	0	0	3	9
Grand Total	1	8	0	0	9	0	0	0	0	0	0	2	2	0	4	2	5	0	0	7	20
Apprch %	11.1	88.9	0	0		0	0	0	0		0	50	50	0		28.6	71.4	0	0		
Total %	5	40	0	0	45	0	0	0	0	0	0	10	10	0	20	10	25	0	0	35	

	Forbes Avenue Eastbound					Forbes Avenue Westbound					Halket Street Northbound					Halket Street Southbound					
Start Time	Left	Thru	Right	Rt. on Red	App. Total	Left	Thru	Right	Rt. on Red	App. Total	Left	Thru	Right	Rt. on Red	App. Total	Left	Thru	Right	Rt. on Red	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0	**1**	0	0	0	0	0	1
05:15 PM	0	**1**	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
05:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	**2**	0	0	**2**	**3**
Total Volume	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	4	0	0	4	7
% App. Total	0	100	0	0		0	0	0	0		0	100	0	0		0	100	0	0		
PHF	.000	.500	.000	.000	.500	.000	.000	.000	.000	.000	.000	.250	.000	.000	.250	.000	.500	.000	.000	.500	.583

Trans Associates

Twin Tower, Suite 400
4955 Steubenville Pike
Pittsburgh, PA, 15205

Forbes Avenue and McKee Place

File Name : maifl00_15061_#2_PM
Site Code : 15061002
Start Date : 4/14/2015
Page No : 1

Groups Printed- Typical Vehicles - Heavy Duty Vehicles

	Forbes Avenue Eastbound					Forbes Avenue Westbound					McKee Place Northbound					McKee Place Southbound					
Start Time	Left	Thru	Right	Rt. on Red	App. Total	Left	Thru	Right	Rt. on Red	App. Total	Left	Thru	Right	Rt. on Red	App. Total	Left	Thru	Right	Rt. on Red	App. Total	Int. Total
04:00 PM	27	278	9	1	315	0	0	0	0	0	0	17	11	0	28	44	42	0	0	86	429
04:15 PM	24	293	8	0	325	0	0	0	0	0	0	30	10	1	41	17	53	0	0	70	436
04:30 PM	27	301	17	0	345	0	0	0	0	0	0	28	6	0	34	27	41	0	0	68	447
04:45 PM	25	331	20	0	376	0	0	0	0	0	0	35	16	0	51	37	46	0	0	83	510
Total	103	1203	54	1	1361	0	0	0	0	0	0	110	43	1	154	125	182	0	0	307	1822
05:00 PM	28	321	17	0	366	0	0	0	0	0	0	42	10	0	52	33	39	0	0	72	490
05:15 PM	13	283	15	1	312	0	0	0	0	0	0	21	14	0	35	36	48	0	0	84	431
05:30 PM	22	301	18	0	341	0	0	0	0	0	0	32	13	0	45	31	50	0	0	81	467
05:45 PM	29	336	19	0	384	0	0	0	0	0	0	26	8	0	34	41	35	0	0	76	494
Total	92	1241	69	1	1403	0	0	0	0	0	0	121	45	0	166	141	172	0	0	313	1882
Grand Total	195	2444	123	2	2764	0	0	0	0	0	0	231	88	1	320	266	354	0	0	620	3704
Apprch %	7.1	88.4	4.5	0.1		0	0	0	0		0	72.2	27.5	0.3		42.9	57.1	0	0		
Total %	5.3	66	3.3	0.1	74.6	0	0	0	0	0	0	6.2	2.4	0	8.6	7.2	9.6	0	0	16.7	
Typical Vehicles	193	2341	122	2	2658	0	0	0	0	0	0	227	87	1	315	245	347	0	0	592	3565
% Typical Vehicles	99	95.8	99.2	100	96.2	0	0	0	0	0	0	98.3	98.9	100	98.4	92.1	98	0	0	95.5	96.2
Heavy Duty Vehicles																					
% Heavy Duty Vehicles	1	4.2	0.8	0	3.8	0	0	0	0	0	0	1.7	1.1	0	1.6	7.9	2	0	0	4.5	3.8

Trans Associates

Twin Tower, Suite 400
4955 Steubenville Pike
Pittsburgh, PA, 15205

Forbes Avenue and McKee Place

File Name : maifl00_15061_#2_PM
Site Code : 15061002
Start Date : 4/14/2015

	Forbes Avenue Eastbound					Forbes Avenue Westbound					McKee Place Northbound					McKee Place Southbound					
Start Time	Left	Thru	Right	Rt. on Red	App. Total	Left	Thru	Right	Rt. on Red	App. Total	Left	Thru	Right	Rt. on Red	App. Total	Left	Thru	Right	Rt. on Red	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	25	**331**	**20**	0	**376**	0	0	0	0	0	0	35	**16**	0	51	**37**	46	0	0	83	**510**
05:00 PM	**28**	321	17	0	366	0	0	0	0	0	0	**42**	10	0	**52**	33	39	0	0	72	490
05:15 PM	13	283	15	**1**	312	0	0	0	0	0	0	21	14	0	35	36	48	0	0	**84**	431
05:30 PM	22	301	18	0	341	0	0	0	0	0	0	32	13	0	45	31	**50**	0	0	81	467
Total Volume	88	1236	70	1	1395	0	0	0	0	0	0	130	53	0	183	137	183	0	0	320	1898
% App. Total	6.3	88.6	5	0.1		0	0	0	0		0	71	29	0		42.8	57.2	0	0		
PHF	.786	.934	.875	.250	.928	.000	.000	.000	.000	.000	.000	.774	.828	.000	.880	.926	.915	.000	.000	.952	.930
Typical Vehicles	88	1181	70	1	1340	0	0	0	0	0	0	128	52	0	180	125	182	0	0	307	1827
% Typical Vehicles	100	95.6	100	100	96.1	0	0	0	0	0	0	98.5	98.1	0	98.4	91.2	99.5	0	0	95.9	96.3
Heavy Duty Vehicles																					
% Heavy Duty Vehicles	0	4.4	0	0	3.9	0	0	0	0	0	0	1.5	1.9	0	1.6	8.8	0.5	0	0	4.1	3.7

Trans Associates

Twin Tower, Suite 400
4955 Steubenville Pike
Pittsburgh, PA, 15205

Forbes Avenue and McKee Place
Pedestrains

File Name : maifl00_15061_#2_PM_peds
Site Code : 15061pd2
Start Date : 4/14/2015
Page No : 1

Groups Printed- Pedestrains

	Forbes Avenue Eastbound					Forbes Avenue Westbound					McKee Place Northbound					McKee Place Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
04:00 PM	37	0	0	7	44	16	0	0	22	38	39	0	0	28	67	40	0	0	18	58	207
04:15 PM	29	0	0	10	39	7	0	0	23	30	40	0	0	35	75	16	0	0	15	31	175
04:30 PM	35	0	0	11	46	9	0	0	32	41	29	1	0	32	62	25	0	0	17	42	191
04:45 PM	20	0	0	14	34	14	0	0	37	51	27	0	0	35	62	19	0	0	27	46	193
Total	121	0	0	42	163	46	0	0	114	160	135	1	0	130	266	100	0	0	77	177	766
05:00 PM	34	0	0	10	44	12	0	0	24	36	28	0	0	25	53	28	0	0	20	48	181
05:15 PM	9	0	0	8	17	8	0	0	11	19	23	0	0	35	58	15	0	0	11	26	120
05:30 PM	16	0	0	9	25	8	0	0	17	25	32	0	0	28	60	23	0	0	18	41	151
05:45 PM	11	0	0	7	18	4	0	0	7	11	16	0	0	19	35	15	0	0	11	26	90
Total	70	0	0	34	104	32	0	0	59	91	99	0	0	107	206	81	0	0	60	141	542
Grand Total	191	0	0	76	267	78	0	0	173	251	234	1	0	237	472	181	0	0	137	318	1308
Apprch %	71.5	0	0	28.5		31.1	0	0	68.9		49.6	0.2	0	50.2		56.9	0	0	43.1		
Total %	14.6	0	0	5.8	20.4	6	0	0	13.2	19.2	17.9	0.1	0	18.1	36.1	13.8	0	0	10.5	24.3	

	Forbes Avenue Eastbound					Forbes Avenue Westbound					McKee Place Northbound					McKee Place Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	20	0	0	**14**	34	**14**	0	0	**37**	**51**	27	0	0	**35**	**62**	19	0	0	**27**	46	**193**
05:00 PM	**34**	0	0	10	**44**	12	0	0	24	36	28	0	0	25	53	**28**	0	0	20	**48**	181
05:15 PM	9	0	0	8	17	8	0	0	11	19	23	0	0	35	58	15	0	0	11	26	120
05:30 PM	16	0	0	9	25	8	0	0	17	25	**32**	0	0	28	60	23	0	0	18	41	151
Total Volume	79	0	0	41	120	42	0	0	89	131	110	0	0	123	233	85	0	0	76	161	645
% App. Total	65.8	0	0	34.2		32.1	0	0	67.9		47.2	0	0	52.8		52.8	0	0	47.2		
PHF	.581	.000	.000	.732	.682	.750	.000	.000	.601	.642	.859	.000	.000	.879	.940	.759	.000	.000	.704	.839	.835

Trans Associates

Twin Tower, Suite 400
4955 Steubenville Pike
Pittsburgh, PA, 15205

Forbes Avenue and McKee Place
Bicycles

File Name : maifl00_15061_#2_PM_bikes
Site Code : 15061bc2
Start Date : 4/14/2015
Page No : 1

Groups Printed- Bicycles

	Forbes Avenue Eastbound					Forbes Avenue Westbound					McKee Place Northbound					McKee Place Southbound					
Start Time	Left	Thru	Right	Rt. on Red	App. Total	Left	Thru	Right	Rt. on Red	App. Total	Left	Thru	Right	Rt. on Red	App. Total	Left	Thru	Right	Rt. on Red	App. Total	Int. Total
04:00 PM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	3
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
04:30 PM	0	1	0	0	1	0	0	0	0	0	1	0	0	0	1	0	1	0	0	1	3
04:45 PM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	4
Total	0	5	0	0	5	0	0	0	0	0	1	0	0	0	1	3	2	0	0	5	11
05:00 PM	0	1	0	0	1	0	0	0	0	0	0	0	1	0	1	1	1	0	0	2	4
05:15 PM	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
05:30 PM	0	3	0	0	3	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	4
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	7	0	0	7	0	1	0	0	1	0	0	1	0	1	1	1	0	0	2	11
Grand Total	0	12	0	0	12	0	1	0	0	1	1	0	1	0	2	4	3	0	0	7	22
Apprch %	0	100	0	0		0	100	0	0		50	0	50	0		57.1	42.9	0	0		
Total %	0	54.5	0	0	54.5	0	4.5	0	0	4.5	4.5	0	4.5	0	9.1	18.2	13.6	0	0	31.8	

	Forbes Avenue Eastbound					Forbes Avenue Westbound					McKee Place Northbound					McKee Place Southbound					
Start Time	Left	Thru	Right	Rt. on Red	App. Total	Left	Thru	Right	Rt. on Red	App. Total	Left	Thru	Right	Rt. on Red	App. Total	Left	Thru	Right	Rt. on Red	App. Total	Int. Total
Peak Hour Analysis From 04:45 PM to 05:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	**2**	0	0	0	**2**	**4**
05:00 PM	0	1	0	0	1	0	0	0	0	0	0	0	**1**	0	**1**	1	**1**	0	0	2	4
05:15 PM	0	**3**	0	0	**3**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
05:30 PM	0	3	0	0	3	0	**1**	0	0	**1**	0	0	0	0	0	0	0	0	0	0	4
Total Volume	0	9	0	0	9	0	1	0	0	1	0	0	1	0	1	3	1	0	0	4	15
% App. Total	0	100	0	0		0	100	0	0		0	0	100	0		75	25	0	0		
PHF	.000	.750	.000	.000	.750	.000	.250	.000	.000	.250	.000	.000	.250	.000	.250	.375	.250	.000	.000	.500	.938

Synchro Printouts

2015 Existing Conditions

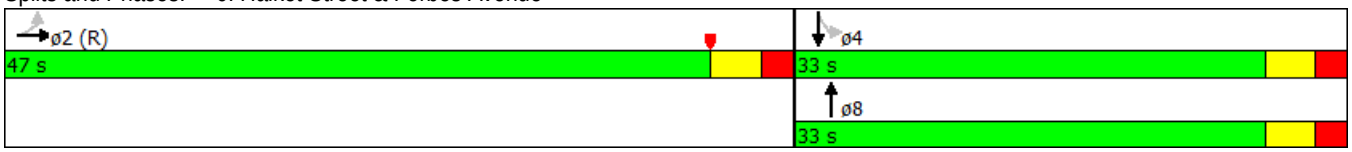
2017 No Build (Base) Conditions

2017 Build (Combined) Conditions

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	84	1551	71	0	0	0	0	95	116	39	174	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	10	12	12	12	12	14	12	12	16	12
Grade (%)		-2%			0%			2%			-5%	
Right Turn on Red			No			No			No			No
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		302			697			354			319	
Travel Time (s)		8.2			19.0			9.7			8.7	
Confl. Peds. (#/hr)	15		50	50		15	80		68	68		80
Confl. Bikes (#/hr)			1						1			
Peak Hour Factor	0.78	0.96	0.66	0.92	0.92	0.92	0.73	0.82	0.67	0.75	0.84	0.83
Heavy Vehicles (%)	7%	4%	4%	0%	0%	0%	0%	3%	10%	3%	12%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1832	0	0	0	0	0	289	0	0	259	0
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Minimum Split (s)	45.0	45.0						29.0		29.0	29.0	
Total Split (s)	47.0	47.0						33.0		33.0	33.0	
Total Split (%)	58.8%	58.8%						41.3%		41.3%	41.3%	
Maximum Green (s)	42.0	42.0						28.0		28.0	28.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0						2.0		2.0	2.0	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.0						5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	30.0	30.0						14.0		14.0	14.0	
Flash Dont Walk (s)	10.0	10.0						10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0						0		0	0	
Act Effct Green (s)		42.0						28.0			28.0	
Actuated g/C Ratio		0.52						0.35			0.35	
v/c Ratio		0.76						0.50			0.42	
Control Delay		17.5						24.3			22.5	
Queue Delay		0.0						0.0			0.0	
Total Delay		17.5						24.3			22.5	
LOS		B						C			C	
Approach Delay		17.5						24.3			22.5	
Approach LOS		B						C			C	
Queue Length 50th (ft)		247						112			97	
Queue Length 95th (ft)		306						164			148	
Internal Link Dist (ft)		222			617			274			239	
Turn Bay Length (ft)												
Base Capacity (vph)		2422						573			614	
Starvation Cap Reductn		0						0			0	
Spillback Cap Reductn		0						0			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.76						0.50			0.42	

Intersection Summary		
Area Type:	Other	
Cycle Length: 80		
Actuated Cycle Length: 80		
Offset: 48 (60%), Referenced to phase 2:EBTL, Start of Yellow		
Natural Cycle: 75		
Control Type: Pretimed		
Maximum v/c Ratio: 0.76		
Intersection Signal Delay: 18.9		Intersection LOS: B
Intersection Capacity Utilization 86.6%		ICU Level of Service E
Analysis Period (min) 15		

Splits and Phases: 6: Halket Street & Forbes Avenue



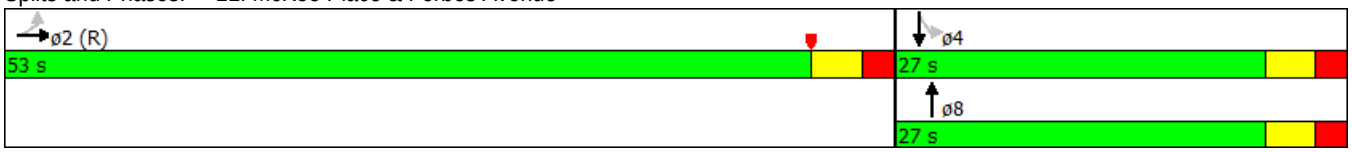
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	84	1551	71	0	0	0	0	95	116	39	174	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	10	12	12	12	12	14	12	12	16	12
Grade (%)		-2%			0%			2%			-5%	
Total Lost time (s)		5.0						5.0			5.0	
Lane Util. Factor		0.91						1.00			1.00	
Frpb, ped/bikes		1.00						0.95			1.00	
Flpb, ped/bikes		1.00						1.00			0.99	
Frt		0.99						0.92			1.00	
Flt Protected		1.00						1.00			0.99	
Satd. Flow (prot)		4615						1639			1967	
Flt Permitted		1.00						1.00			0.88	
Satd. Flow (perm)		4615						1639			1756	
Peak-hour factor, PHF	0.78	0.96	0.66	0.92	0.92	0.92	0.73	0.82	0.67	0.75	0.84	0.83
Adj. Flow (vph)	108	1616	108	0	0	0	0	116	173	52	207	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1832	0	0	0	0	0	289	0	0	259	0
Confl. Peds. (#/hr)	15		50	50		15	80		68	68		80
Confl. Bikes (#/hr)			1						1			
Heavy Vehicles (%)	7%	4%	4%	0%	0%	0%	0%	3%	10%	3%	12%	0%
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		42.0						28.0			28.0	
Effective Green, g (s)		42.0						28.0			28.0	
Actuated g/C Ratio		0.52						0.35			0.35	
Clearance Time (s)		5.0						5.0			5.0	
Lane Grp Cap (vph)		2422						573			614	
v/s Ratio Prot								c0.18				
v/s Ratio Perm		0.40									0.15	
v/c Ratio		0.76						0.50			0.42	
Uniform Delay, d1		15.0						20.5			19.8	
Progression Factor		1.00						1.00			1.00	
Incremental Delay, d2		2.3						3.2			2.1	
Delay (s)		17.2						23.7			21.9	
Level of Service		B						C			C	
Approach Delay (s)		17.2			0.0			23.7			21.9	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	18.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	86.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	322	1378	64	0	0	0	0	219	54	77	181	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	10	12	12	12	12	10	12	11	11	12
Grade (%)		1%			0%			2%			-5%	
Right Turn on Red			No			No			Yes			No
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		697			420			318			328	
Travel Time (s)		19.0			11.5			8.7			8.9	
Confl. Peds. (#/hr)	86		196	196		86	106		144	144		106
Confl. Bikes (#/hr)									1			1
Peak Hour Factor	0.95	0.94	0.84	0.92	0.92	0.92	0.92	0.88	0.84	0.77	0.84	0.92
Heavy Vehicles (%)	1%	5%	3%	0%	0%	0%	0%	2%	9%	9%	3%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1881	0	0	0	0	0	313	0	100	215	0
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Minimum Split (s)	50.0	50.0						24.0		24.0	24.0	
Total Split (s)	53.0	53.0						27.0		27.0	27.0	
Total Split (%)	66.3%	66.3%						33.8%		33.8%	33.8%	
Maximum Green (s)	48.0	48.0						22.0		22.0	22.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0						2.0		2.0	2.0	
Lost Time Adjust (s)		0.0						0.0		0.0	0.0	
Total Lost Time (s)		5.0						5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	35.0	35.0						9.0		9.0	9.0	
Flash Dont Walk (s)	10.0	10.0						10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0						0		0	0	
Act Effct Green (s)		48.0						22.0		22.0	22.0	
Actuated g/C Ratio		0.60						0.28		0.28	0.28	
v/c Ratio		0.70						0.70		0.61	0.43	
Control Delay		6.0						34.5		43.9	27.1	
Queue Delay		0.0						0.0		0.0	0.0	
Total Delay		6.0						34.5		43.9	27.1	
LOS		A						C		D	C	
Approach Delay		6.0						34.5			32.4	
Approach LOS		A						C			C	
Queue Length 50th (ft)		49						133		43	88	
Queue Length 95th (ft)		55						216		80	139	
Internal Link Dist (ft)		617			340			238			248	
Turn Bay Length (ft)												
Base Capacity (vph)		2673						447		164	502	
Starvation Cap Reductn		0						0		0	0	
Spillback Cap Reductn		0						0		0	0	
Storage Cap Reductn		0						0		0	0	
Reduced v/c Ratio		0.70						0.70		0.61	0.43	

Intersection Summary		
Area Type:	Other	
Cycle Length: 80		
Actuated Cycle Length: 80		
Offset: 72 (90%), Referenced to phase 2:EBTL, Start of Yellow		
Natural Cycle: 75		
Control Type: Pretimed		
Maximum v/c Ratio: 0.70		
Intersection Signal Delay: 12.9	Intersection LOS: B	
Intersection Capacity Utilization 72.0%	ICU Level of Service C	
Analysis Period (min) 15		

Splits and Phases: 11: McKee Place & Forbes Avenue



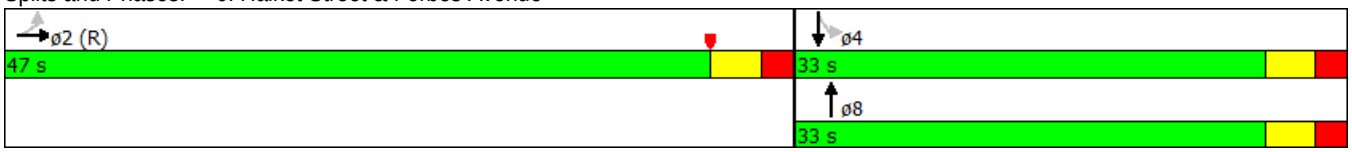
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	322	1378	64	0	0	0	0	219	54	77	181	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	10	12	12	12	12	10	12	11	11	12
Grade (%)		1%			0%			2%			-5%	
Total Lost time (s)		5.0						5.0		5.0	5.0	
Lane Util. Factor		0.91						1.00		1.00	1.00	
Frpb, ped/bikes		0.99						0.96		1.00	1.00	
Flpb, ped/bikes		0.99						1.00		0.90	1.00	
Frt		0.99						0.97		1.00	1.00	
Flt Protected		0.99						1.00		0.95	1.00	
Satd. Flow (prot)		4457						1586		1484	1828	
Flt Permitted		0.99						1.00		0.38	1.00	
Satd. Flow (perm)		4457						1586		599	1828	
Peak-hour factor, PHF	0.95	0.94	0.84	0.92	0.92	0.92	0.92	0.88	0.84	0.77	0.84	0.92
Adj. Flow (vph)	339	1466	76	0	0	0	0	249	64	100	215	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	12	0	0	0	0
Lane Group Flow (vph)	0	1881	0	0	0	0	0	301	0	100	215	0
Confl. Peds. (#/hr)	86		196	196		86	106		144	144		106
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	1%	5%	3%	0%	0%	0%	0%	2%	9%	9%	3%	0%
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		48.0						22.0		22.0	22.0	
Effective Green, g (s)		48.0						22.0		22.0	22.0	
Actuated g/C Ratio		0.60						0.28		0.28	0.28	
Clearance Time (s)		5.0						5.0		5.0	5.0	
Lane Grp Cap (vph)		2674						436		164	502	
v/s Ratio Prot								c0.19			0.12	
v/s Ratio Perm		0.42								0.17		
v/c Ratio		0.70						0.69		0.61	0.43	
Uniform Delay, d1		11.1						26.0		25.3	23.8	
Progression Factor		0.44						1.00		1.00	1.00	
Incremental Delay, d2		1.1						8.7		15.7	2.7	
Delay (s)		5.9						34.7		41.0	26.5	
Level of Service		A						C		D	C	
Approach Delay (s)		5.9			0.0			34.7			31.1	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	12.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	72.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	23	1316	145	0	0	0	0	97	131	53	195	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	10	12	12	12	12	14	12	12	16	12
Grade (%)		-2%			0%			2%			-5%	
Right Turn on Red			No			No			No			No
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		486			697			354			375	
Travel Time (s)		13.3			19.0			9.7			10.2	
Confl. Peds. (#/hr)	54		103	103		54	93		96	96		93
Confl. Bikes (#/hr)			2						1			4
Peak Hour Factor	0.64	0.91	0.84	0.92	0.92	0.92	0.86	0.81	0.84	0.78	0.90	0.89
Heavy Vehicles (%)	0%	3%	1%	0%	0%	0%	0%	1%	10%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1655	0	0	0	0	0	276	0	0	285	0
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Minimum Split (s)	45.0	45.0						29.0		29.0	29.0	
Total Split (s)	47.0	47.0						33.0		33.0	33.0	
Total Split (%)	58.8%	58.8%						41.3%		41.3%	41.3%	
Maximum Green (s)	42.0	42.0						28.0		28.0	28.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0						2.0		2.0	2.0	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.0						5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	30.0	30.0						14.0		14.0	14.0	
Flash Dont Walk (s)	10.0	10.0						10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0						0		0	0	
Act Effct Green (s)		42.0						28.0			28.0	
Actuated g/C Ratio		0.52						0.35			0.35	
v/c Ratio		0.68						0.48			0.44	
Control Delay		15.9						23.8			22.6	
Queue Delay		0.0						0.0			0.0	
Total Delay		15.9						23.8			22.6	
LOS		B						C			C	
Approach Delay		15.9						23.8			22.6	
Approach LOS		B						C			C	
Queue Length 50th (ft)		210						106			108	
Queue Length 95th (ft)		261						154			176	
Internal Link Dist (ft)		406			617			274			295	
Turn Bay Length (ft)												
Base Capacity (vph)		2422						574			648	
Starvation Cap Reductn		0						0			0	
Spillback Cap Reductn		0						0			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.68						0.48			0.44	

Intersection Summary		
Area Type:	Other	
Cycle Length: 80		
Actuated Cycle Length: 80		
Offset: 48 (60%), Referenced to phase 2:EBTL, Start of Yellow		
Natural Cycle: 75		
Control Type: Pretimed		
Maximum v/c Ratio: 0.68		
Intersection Signal Delay: 17.8		Intersection LOS: B
Intersection Capacity Utilization 85.8%		ICU Level of Service E
Analysis Period (min) 15		

Splits and Phases: 6: Halket Street & Forbes Avenue



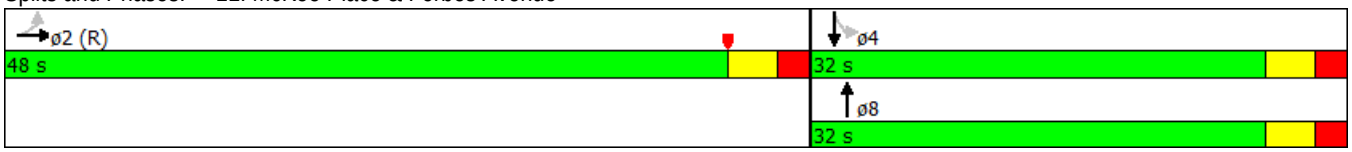
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	23	1316	145	0	0	0	0	97	131	53	195	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	10	12	12	12	12	14	12	12	16	12
Grade (%)		-2%			0%			2%			-5%	
Total Lost time (s)		5.0						5.0			5.0	
Lane Util. Factor		0.91						1.00			1.00	
Frpb, ped/bikes		0.99						0.94			1.00	
Flpb, ped/bikes		1.00						1.00			0.99	
Frt		0.98						0.92			1.00	
Flt Protected		1.00						1.00			0.99	
Satd. Flow (prot)		4615						1642			2150	
Flt Permitted		1.00						1.00			0.85	
Satd. Flow (perm)		4615						1642			1853	
Peak-hour factor, PHF	0.64	0.91	0.84	0.92	0.92	0.92	0.86	0.81	0.84	0.78	0.90	0.89
Adj. Flow (vph)	36	1446	173	0	0	0	0	120	156	68	217	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1655	0	0	0	0	0	276	0	0	285	0
Confl. Peds. (#/hr)	54		103	103		54	93		96	96		93
Confl. Bikes (#/hr)			2						1			4
Heavy Vehicles (%)	0%	3%	1%	0%	0%	0%	0%	1%	10%	0%	0%	0%
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		42.0						28.0			28.0	
Effective Green, g (s)		42.0						28.0			28.0	
Actuated g/C Ratio		0.52						0.35			0.35	
Clearance Time (s)		5.0						5.0			5.0	
Lane Grp Cap (vph)		2422						574			648	
v/s Ratio Prot								c0.17				
v/s Ratio Perm		0.36									0.15	
v/c Ratio		0.68						0.48			0.44	
Uniform Delay, d1		14.1						20.3			20.0	
Progression Factor		1.00						1.00			1.00	
Incremental Delay, d2		1.6						2.9			2.2	
Delay (s)		15.7						23.2			22.1	
Level of Service		B						C			C	
Approach Delay (s)		15.7			0.0			23.2			22.1	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	17.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	85.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	88	1236	71	0	0	0	0	130	53	137	183	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	10	12	12	12	12	10	12	11	11	12
Grade (%)		1%			0%			2%			-5%	
Right Turn on Red			No			No			Yes			No
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		697			420			318			328	
Travel Time (s)		19.0			11.5			8.7			8.9	
Confl. Peds. (#/hr)	161		233	233		161	120		131	131		120
Confl. Bikes (#/hr)			9						1			1
Peak Hour Factor	0.79	0.93	0.89	0.92	0.92	0.92	0.92	0.77	0.83	0.93	0.92	0.92
Heavy Vehicles (%)	0%	4%	0%	0%	0%	0%	0%	2%	2%	9%	1%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1520	0	0	0	0	0	233	0	147	199	0
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Minimum Split (s)	45.0	45.0						29.0		29.0	29.0	
Total Split (s)	48.0	48.0						32.0		32.0	32.0	
Total Split (%)	60.0%	60.0%						40.0%		40.0%	40.0%	
Maximum Green (s)	43.0	43.0						27.0		27.0	27.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0						2.0		2.0	2.0	
Lost Time Adjust (s)		0.0						0.0		0.0	0.0	
Total Lost Time (s)		5.0						5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	30.0	30.0						14.0		14.0	14.0	
Flash Dont Walk (s)	10.0	10.0						10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0						0		0	0	
Act Effct Green (s)		43.0						27.0		27.0	27.0	
Actuated g/C Ratio		0.54						0.34		0.34	0.34	
v/c Ratio		0.63						0.43		0.51	0.32	
Control Delay		5.0						22.5		28.6	21.4	
Queue Delay		0.0						0.0		0.0	0.0	
Total Delay		5.0						22.5		28.6	21.4	
LOS		A						C		C	C	
Approach Delay		5.0						22.5			24.5	
Approach LOS		A						C			C	
Queue Length 50th (ft)		41						84		58	73	
Queue Length 95th (ft)		47						120		117	126	
Internal Link Dist (ft)		617			340			238			248	
Turn Bay Length (ft)												
Base Capacity (vph)		2410						544		290	629	
Starvation Cap Reductn		0						0		0	0	
Spillback Cap Reductn		0						0		0	0	
Storage Cap Reductn		0						0		0	0	
Reduced v/c Ratio		0.63						0.43		0.51	0.32	

Intersection Summary		
Area Type:	Other	
Cycle Length: 80		
Actuated Cycle Length: 80		
Offset: 67 (84%), Referenced to phase 2:EBTL, Start of Yellow		
Natural Cycle: 75		
Control Type: Pretimed		
Maximum v/c Ratio: 0.63		
Intersection Signal Delay: 10.1	Intersection LOS: B	
Intersection Capacity Utilization 73.4%	ICU Level of Service D	
Analysis Period (min) 15		

Splits and Phases: 11: McKee Place & Forbes Avenue



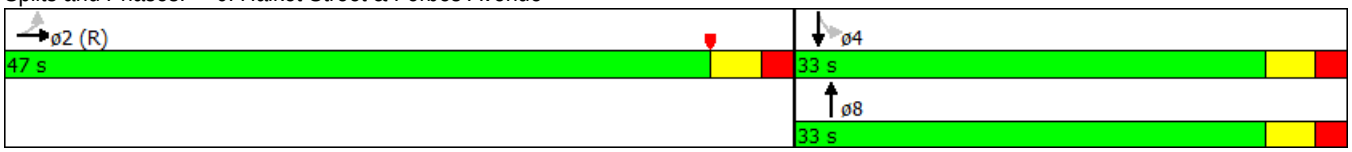
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	88	1236	71	0	0	0	0	130	53	137	183	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	10	12	12	12	12	10	12	11	11	12
Grade (%)		1%			0%			2%			-5%	
Total Lost time (s)		5.0						5.0		5.0	5.0	
Lane Util. Factor		0.91						1.00		1.00	1.00	
Frpb, ped/bikes		0.99						0.96		1.00	1.00	
Flpb, ped/bikes		0.99						1.00		0.91	1.00	
Frt		0.99						0.96		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		4486						1593		1495	1864	
Flt Permitted		1.00						1.00		0.55	1.00	
Satd. Flow (perm)		4486						1593		862	1864	
Peak-hour factor, PHF	0.79	0.93	0.89	0.92	0.92	0.92	0.92	0.77	0.83	0.93	0.92	0.92
Adj. Flow (vph)	111	1329	80	0	0	0	0	169	64	147	199	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	7	0	0	0	0
Lane Group Flow (vph)	0	1520	0	0	0	0	0	226	0	147	199	0
Confl. Peds. (#/hr)	161		233	233		161	120		131	131		120
Confl. Bikes (#/hr)			9						1			1
Heavy Vehicles (%)	0%	4%	0%	0%	0%	0%	0%	2%	2%	9%	1%	0%
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		43.0						27.0		27.0	27.0	
Effective Green, g (s)		43.0						27.0		27.0	27.0	
Actuated g/C Ratio		0.54						0.34		0.34	0.34	
Clearance Time (s)		5.0						5.0		5.0	5.0	
Lane Grp Cap (vph)		2411						537		290	629	
v/s Ratio Prot								0.14			0.11	
v/s Ratio Perm		0.34								c0.17		
v/c Ratio		0.63						0.42		0.51	0.32	
Uniform Delay, d1		12.9						20.5		21.2	19.7	
Progression Factor		0.31						1.00		1.00	1.00	
Incremental Delay, d2		1.0						2.4		6.2	1.3	
Delay (s)		4.9						22.9		27.4	21.0	
Level of Service		A						C		C	C	
Approach Delay (s)		4.9			0.0			22.9			23.7	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	10.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	73.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	131	1641	81	0	0	0	0	98	117	39	176	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	10	12	12	12	12	14	12	12	16	12
Grade (%)		-2%			0%			2%			-5%	
Right Turn on Red			No			No			No			No
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		302			697			354			319	
Travel Time (s)		8.2			19.0			9.7			8.7	
Confl. Peds. (#/hr)	15		50	50		15	80		68	68		80
Confl. Bikes (#/hr)			1						1			
Peak Hour Factor	0.78	0.96	0.66	0.92	0.92	0.92	0.73	0.82	0.67	0.75	0.84	0.83
Heavy Vehicles (%)	7%	4%	4%	0%	0%	0%	0%	3%	10%	3%	12%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2000	0	0	0	0	0	295	0	0	262	0
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Minimum Split (s)	45.0	45.0						29.0		29.0	29.0	
Total Split (s)	47.0	47.0						33.0		33.0	33.0	
Total Split (%)	58.8%	58.8%						41.3%		41.3%	41.3%	
Maximum Green (s)	42.0	42.0						28.0		28.0	28.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0						2.0		2.0	2.0	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.0						5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	30.0	30.0						14.0		14.0	14.0	
Flash Dont Walk (s)	10.0	10.0						10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0						0		0	0	
Act Effct Green (s)		42.0						28.0			28.0	
Actuated g/C Ratio		0.52						0.35			0.35	
v/c Ratio		0.83						0.51			0.43	
Control Delay		19.7						24.5			22.6	
Queue Delay		0.0						0.0			0.0	
Total Delay		19.7						24.5			22.6	
LOS		B						C			C	
Approach Delay		19.7						24.5			22.6	
Approach LOS		B						C			C	
Queue Length 50th (ft)		287						115			99	
Queue Length 95th (ft)		357						168			150	
Internal Link Dist (ft)		222			617			274			239	
Turn Bay Length (ft)												
Base Capacity (vph)		2417						574			614	
Starvation Cap Reductn		0						0			0	
Spillback Cap Reductn		0						0			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.83						0.51			0.43	

Intersection Summary		
Area Type:	Other	
Cycle Length: 80		
Actuated Cycle Length: 80		
Offset: 48 (60%), Referenced to phase 2:EBTL, Start of Yellow		
Natural Cycle: 75		
Control Type: Pretimed		
Maximum v/c Ratio: 0.83		
Intersection Signal Delay: 20.6		Intersection LOS: C
Intersection Capacity Utilization 89.6%		ICU Level of Service E
Analysis Period (min) 15		

Splits and Phases: 6: Halket Street & Forbes Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	131	1641	81	0	0	0	0	98	117	39	176	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	10	12	12	12	12	14	12	12	16	12
Grade (%)		-2%			0%			2%			-5%	
Total Lost time (s)		5.0						5.0			5.0	
Lane Util. Factor		0.91						1.00			1.00	
Frpb, ped/bikes		1.00						0.95			1.00	
Flpb, ped/bikes		1.00						1.00			0.99	
Frt		0.99						0.92			1.00	
Flt Protected		1.00						1.00			0.99	
Satd. Flow (prot)		4602						1642			1967	
Flt Permitted		1.00						1.00			0.88	
Satd. Flow (perm)		4602						1642			1755	
Peak-hour factor, PHF	0.78	0.96	0.66	0.92	0.92	0.92	0.73	0.82	0.67	0.75	0.84	0.83
Adj. Flow (vph)	168	1709	123	0	0	0	0	120	175	52	210	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	2000	0	0	0	0	0	295	0	0	262	0
Confl. Peds. (#/hr)	15		50	50		15	80		68	68		80
Confl. Bikes (#/hr)			1						1			
Heavy Vehicles (%)	7%	4%	4%	0%	0%	0%	0%	3%	10%	3%	12%	0%
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		42.0						28.0			28.0	
Effective Green, g (s)		42.0						28.0			28.0	
Actuated g/C Ratio		0.52						0.35			0.35	
Clearance Time (s)		5.0						5.0			5.0	
Lane Grp Cap (vph)		2416						574			614	
v/s Ratio Prot								c0.18				
v/s Ratio Perm		0.43									0.15	
v/c Ratio		0.83						0.51			0.43	
Uniform Delay, d1		16.0						20.6			19.9	
Progression Factor		1.00						1.00			1.00	
Incremental Delay, d2		3.4						3.3			2.2	
Delay (s)		19.4						23.9			22.0	
Level of Service		B						C			C	
Approach Delay (s)		19.4			0.0			23.9			22.0	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	20.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	89.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	326	1466	65	0	0	0	0	221	55	78	183	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	10	12	12	12	12	10	12	11	11	12
Grade (%)		1%			0%			2%			-5%	
Right Turn on Red			No			No			Yes			No
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		697			420			318			328	
Travel Time (s)		19.0			11.5			8.7			8.9	
Confl. Peds. (#/hr)	86		196	196		86	106		144	144		106
Confl. Bikes (#/hr)									1			1
Peak Hour Factor	0.95	0.94	0.84	0.92	0.92	0.92	0.92	0.88	0.84	0.77	0.84	0.92
Heavy Vehicles (%)	1%	5%	3%	0%	0%	0%	0%	2%	9%	9%	3%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1980	0	0	0	0	0	316	0	101	218	0
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Minimum Split (s)	50.0	50.0						24.0		24.0	24.0	
Total Split (s)	53.0	53.0						27.0		27.0	27.0	
Total Split (%)	66.3%	66.3%						33.8%		33.8%	33.8%	
Maximum Green (s)	48.0	48.0						22.0		22.0	22.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0						2.0		2.0	2.0	
Lost Time Adjust (s)		0.0						0.0		0.0	0.0	
Total Lost Time (s)		5.0						5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	35.0	35.0						9.0		9.0	9.0	
Flash Dont Walk (s)	10.0	10.0						10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0						0		0	0	
Act Effct Green (s)		48.0						22.0		22.0	22.0	
Actuated g/C Ratio		0.60						0.28		0.28	0.28	
v/c Ratio		0.74						0.71		0.62	0.43	
Control Delay		5.7						35.4		44.8	27.2	
Queue Delay		0.0						0.0		0.0	0.0	
Total Delay		5.7						35.4		44.8	27.2	
LOS		A						D		D	C	
Approach Delay		5.7						35.4			32.7	
Approach LOS		A						D			C	
Queue Length 50th (ft)		49						136		44	89	
Queue Length 95th (ft)		55						#225		81	140	
Internal Link Dist (ft)		617			340			238			248	
Turn Bay Length (ft)												
Base Capacity (vph)		2675						445		163	502	
Starvation Cap Reductn		0						0		0	0	
Spillback Cap Reductn		0						0		0	0	
Storage Cap Reductn		0						0		0	0	
Reduced v/c Ratio		0.74						0.71		0.62	0.43	

Intersection Summary		
Area Type:	Other	
Cycle Length: 80		
Actuated Cycle Length: 80		
Offset: 72 (90%), Referenced to phase 2:EBTL, Start of Yellow		
Natural Cycle: 75		
Control Type: Pretimed		
Maximum v/c Ratio: 0.74		
Intersection Signal Delay: 12.6	Intersection LOS: B	
Intersection Capacity Utilization 73.5%	ICU Level of Service D	
Analysis Period (min) 15		
# 95th percentile volume exceeds capacity, queue may be longer.		
Queue shown is maximum after two cycles.		

Splits and Phases: 11: McKee Place & Forbes Avenue

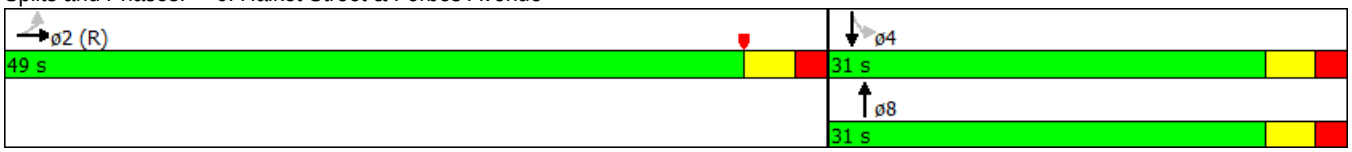
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	326	1466	65	0	0	0	0	221	55	78	183	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	10	12	12	12	12	10	12	11	11	12
Grade (%)		1%			0%			2%			-5%	
Total Lost time (s)		5.0						5.0		5.0	5.0	
Lane Util. Factor		0.91						1.00		1.00	1.00	
Frpb, ped/bikes		0.99						0.96		1.00	1.00	
Flpb, ped/bikes		0.99						1.00		0.91	1.00	
Frt		0.99						0.97		1.00	1.00	
Flt Protected		0.99						1.00		0.95	1.00	
Satd. Flow (prot)		4461						1585		1486	1828	
Flt Permitted		0.99						1.00		0.38	1.00	
Satd. Flow (perm)		4461						1585		592	1828	
Peak-hour factor, PHF	0.95	0.94	0.84	0.92	0.92	0.92	0.92	0.88	0.84	0.77	0.84	0.92
Adj. Flow (vph)	343	1560	77	0	0	0	0	251	65	101	218	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	9	0	0	0	0
Lane Group Flow (vph)	0	1980	0	0	0	0	0	307	0	101	218	0
Confl. Peds. (#/hr)	86		196	196		86	106		144	144		106
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	1%	5%	3%	0%	0%	0%	0%	2%	9%	9%	3%	0%
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		48.0						22.0		22.0	22.0	
Effective Green, g (s)		48.0						22.0		22.0	22.0	
Actuated g/C Ratio		0.60						0.28		0.28	0.28	
Clearance Time (s)		5.0						5.0		5.0	5.0	
Lane Grp Cap (vph)		2676						435		162	502	
v/s Ratio Prot								c0.19			0.12	
v/s Ratio Perm		0.44								0.17		
v/c Ratio		0.74						0.70		0.62	0.43	
Uniform Delay, d1		11.5						26.1		25.4	23.9	
Progression Factor		0.38						1.00		1.00	1.00	
Incremental Delay, d2		1.2						9.2		16.7	2.7	
Delay (s)		5.6						35.3		42.1	26.6	
Level of Service		A						D		D	C	
Approach Delay (s)		5.6			0.0			35.3			31.5	
Approach LOS		A			A			D			C	

Intersection Summary			
HCM 2000 Control Delay	12.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	73.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	57	1557	154	0	0	0	0	103	132	54	197	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	10	12	12	12	12	14	12	12	16	12
Grade (%)		-2%			0%			2%			-5%	
Right Turn on Red			No			No			No			No
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		486			697			354			375	
Travel Time (s)		13.3			19.0			9.7			10.2	
Confl. Peds. (#/hr)	54		103	103		54	93		96	96		93
Confl. Bikes (#/hr)			2						1			4
Peak Hour Factor	0.64	0.91	0.84	0.92	0.92	0.92	0.86	0.81	0.84	0.78	0.90	0.89
Heavy Vehicles (%)	0%	3%	1%	0%	0%	0%	0%	1%	10%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1983	0	0	0	0	0	284	0	0	288	0
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Minimum Split (s)	45.0	45.0						29.0		29.0	29.0	
Total Split (s)	49.0	49.0						31.0		31.0	31.0	
Total Split (%)	61.3%	61.3%						38.8%		38.8%	38.8%	
Maximum Green (s)	44.0	44.0						26.0		26.0	26.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0						2.0		2.0	2.0	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.0						5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	30.0	30.0						14.0		14.0	14.0	
Flash Dont Walk (s)	10.0	10.0						10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0						0		0	0	
Act Effct Green (s)		44.0						26.0			26.0	
Actuated g/C Ratio		0.55						0.32			0.32	
v/c Ratio		0.78						0.53			0.51	
Control Delay		17.0						26.4			25.7	
Queue Delay		0.0						0.0			0.0	
Total Delay		17.0						26.4			25.7	
LOS		B						C			C	
Approach Delay		17.0						26.4			25.7	
Approach LOS		B						C			C	
Queue Length 50th (ft)		265						114			115	
Queue Length 95th (ft)		328						165			189	
Internal Link Dist (ft)		406			617			274			295	
Turn Bay Length (ft)												
Base Capacity (vph)		2542						535			565	
Starvation Cap Reductn		0						0			0	
Spillback Cap Reductn		0						0			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.78						0.53			0.51	

Intersection Summary		
Area Type:	Other	
Cycle Length: 80		
Actuated Cycle Length: 80		
Offset: 52 (65%), Referenced to phase 2:EBTL, Start of Yellow		
Natural Cycle: 75		
Control Type: Pretimed		
Maximum v/c Ratio: 0.78		
Intersection Signal Delay: 19.0		Intersection LOS: B
Intersection Capacity Utilization 89.9%		ICU Level of Service E
Analysis Period (min) 15		

Splits and Phases: 6: Halket Street & Forbes Avenue



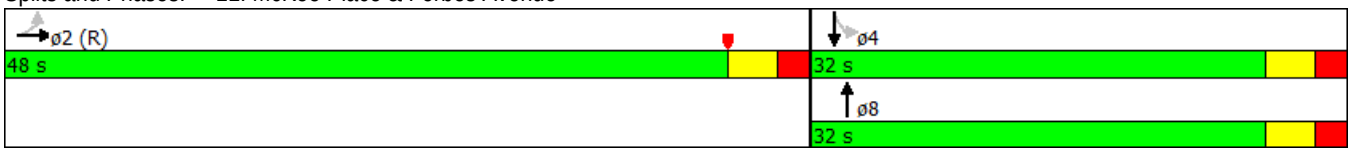
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	57	1557	154	0	0	0	0	103	132	54	197	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	10	12	12	12	12	14	12	12	16	12
Grade (%)		-2%			0%			2%			-5%	
Total Lost time (s)		5.0						5.0			5.0	
Lane Util. Factor		0.91						1.00			1.00	
Frpb, ped/bikes		0.99						0.94			1.00	
Flpb, ped/bikes		1.00						1.00			0.99	
Frt		0.99						0.93			1.00	
Flt Protected		1.00						1.00			0.99	
Satd. Flow (prot)		4621						1649			2151	
Flt Permitted		1.00						1.00			0.80	
Satd. Flow (perm)		4621						1649			1740	
Peak-hour factor, PHF	0.64	0.91	0.84	0.92	0.92	0.92	0.86	0.81	0.84	0.78	0.90	0.89
Adj. Flow (vph)	89	1711	183	0	0	0	0	127	157	69	219	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1983	0	0	0	0	0	284	0	0	288	0
Confl. Peds. (#/hr)	54		103	103		54	93		96	96		93
Confl. Bikes (#/hr)			2						1			4
Heavy Vehicles (%)	0%	3%	1%	0%	0%	0%	0%	1%	10%	0%	0%	0%
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		44.0						26.0			26.0	
Effective Green, g (s)		44.0						26.0			26.0	
Actuated g/C Ratio		0.55						0.32			0.32	
Clearance Time (s)		5.0						5.0			5.0	
Lane Grp Cap (vph)		2541						535			565	
v/s Ratio Prot								c0.17				
v/s Ratio Perm		0.43									0.17	
v/c Ratio		0.78						0.53			0.51	
Uniform Delay, d1		14.2						22.0			21.8	
Progression Factor		1.00						1.00			1.00	
Incremental Delay, d2		2.5						3.7			3.3	
Delay (s)		16.6						25.8			25.1	
Level of Service		B						C			C	
Approach Delay (s)		16.6			0.0			25.8			25.1	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	18.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	89.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	89	1477	72	0	0	0	0	131	54	139	185	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	10	12	12	12	12	10	12	11	11	12
Grade (%)		1%			0%			2%			-5%	
Right Turn on Red			No			No			Yes			No
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		697			420			318			328	
Travel Time (s)		19.0			11.5			8.7			8.9	
Confl. Peds. (#/hr)	161		233	233		161	120		131	131		120
Confl. Bikes (#/hr)			9						1			1
Peak Hour Factor	0.79	0.93	0.89	0.92	0.92	0.92	0.92	0.77	0.83	0.93	0.92	0.92
Heavy Vehicles (%)	0%	4%	0%	0%	0%	0%	0%	2%	2%	9%	1%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1782	0	0	0	0	0	235	0	149	201	0
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Minimum Split (s)	45.0	45.0						29.0		29.0	29.0	
Total Split (s)	48.0	48.0						32.0		32.0	32.0	
Total Split (%)	60.0%	60.0%						40.0%		40.0%	40.0%	
Maximum Green (s)	43.0	43.0						27.0		27.0	27.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0						2.0		2.0	2.0	
Lost Time Adjust (s)		0.0						0.0		0.0	0.0	
Total Lost Time (s)		5.0						5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	30.0	30.0						14.0		14.0	14.0	
Flash Dont Walk (s)	10.0	10.0						10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0						0		0	0	
Act Effct Green (s)		43.0						27.0		27.0	27.0	
Actuated g/C Ratio		0.54						0.34		0.34	0.34	
v/c Ratio		0.74						0.44		0.52	0.32	
Control Delay		5.9						23.2		28.9	21.5	
Queue Delay		0.0						0.0		0.0	0.0	
Total Delay		5.9						23.2		28.9	21.5	
LOS		A						C		C	C	
Approach Delay		5.9						23.2			24.6	
Approach LOS		A						C			C	
Queue Length 50th (ft)		58						88		59	74	
Queue Length 95th (ft)		66						124		119	127	
Internal Link Dist (ft)		617			340			238			248	
Turn Bay Length (ft)												
Base Capacity (vph)		2421						540		289	629	
Starvation Cap Reductn		0						0		0	0	
Spillback Cap Reductn		0						0		0	0	
Storage Cap Reductn		0						0		0	0	
Reduced v/c Ratio		0.74						0.44		0.52	0.32	

Intersection Summary		
Area Type:	Other	
Cycle Length: 80		
Actuated Cycle Length: 80		
Offset: 67 (84%), Referenced to phase 2:EBTL, Start of Yellow		
Natural Cycle: 75		
Control Type: Pretimed		
Maximum v/c Ratio: 0.74		
Intersection Signal Delay: 10.4		Intersection LOS: B
Intersection Capacity Utilization 74.7%		ICU Level of Service D
Analysis Period (min) 15		

Splits and Phases: 11: McKee Place & Forbes Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	89	1477	72	0	0	0	0	131	54	139	185	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	10	12	12	12	12	10	12	11	11	12
Grade (%)		1%			0%			2%			-5%	
Total Lost time (s)		5.0						5.0		5.0	5.0	
Lane Util. Factor		0.91						1.00		1.00	1.00	
Frpb, ped/bikes		0.99						0.96		1.00	1.00	
Flpb, ped/bikes		0.99						1.00		0.91	1.00	
Frt		0.99						0.96		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		4505						1592		1495	1864	
Flt Permitted		1.00						1.00		0.55	1.00	
Satd. Flow (perm)		4505						1592		858	1864	
Peak-hour factor, PHF	0.79	0.93	0.89	0.92	0.92	0.92	0.92	0.77	0.83	0.93	0.92	0.92
Adj. Flow (vph)	113	1588	81	0	0	0	0	170	65	149	201	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	1782	0	0	0	0	0	232	0	149	201	0
Confl. Peds. (#/hr)	161		233	233		161	120		131	131		120
Confl. Bikes (#/hr)			9						1			1
Heavy Vehicles (%)	0%	4%	0%	0%	0%	0%	0%	2%	2%	9%	1%	0%
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		43.0						27.0		27.0	27.0	
Effective Green, g (s)		43.0						27.0		27.0	27.0	
Actuated g/C Ratio		0.54						0.34		0.34	0.34	
Clearance Time (s)		5.0						5.0		5.0	5.0	
Lane Grp Cap (vph)		2421						537		289	629	
v/s Ratio Prot								0.15			0.11	
v/s Ratio Perm		0.40								c0.17		
v/c Ratio		0.74						0.43		0.52	0.32	
Uniform Delay, d1		14.2						20.5		21.3	19.7	
Progression Factor		0.32						1.00		1.00	1.00	
Incremental Delay, d2		1.3						2.5		6.4	1.3	
Delay (s)		5.8						23.1		27.7	21.0	
Level of Service		A						C		C	C	
Approach Delay (s)		5.8			0.0			23.1			23.9	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	10.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	74.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	3	1797	0	0	14	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	12	12	11	12
Grade (%)		1%	0%		0%	
Link Speed (mph)		25	25		25	
Link Distance (ft)		225	473		180	
Travel Time (s)		6.1	12.9		4.9	
Confl. Peds. (#/hr)	61				61	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	2000	0	0	16	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	44.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	3	1797	0	0	14	0
Sign Control		Free	Free		Stop	
Grade		1%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	3	1997	0	0	16	0
Pedestrians			61		61	
Lane Width (ft)			0.0		11.0	
Walking Speed (ft/s)			4.0		4.0	
Percent Blockage			0		5	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		225	473			
pX, platoon unblocked					0.66	
vC, conflicting volume	61				794	61
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	61				0	61
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				98	100
cM capacity (veh/h)	1469				640	945

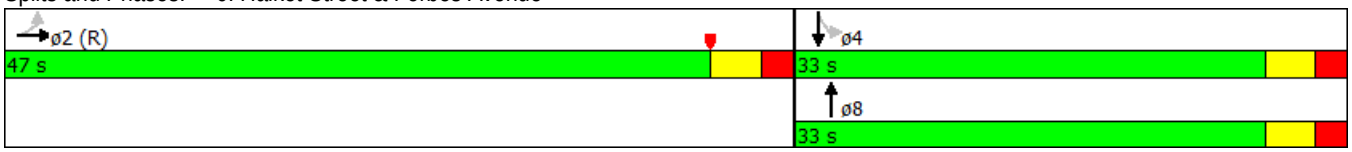
Direction, Lane #	EB 1	EB 2	EB 3	SB 1
Volume Total	403	799	799	16
Volume Left	3	0	0	16
Volume Right	0	0	0	0
cSH	1469	1700	1700	640
Volume to Capacity	0.00	0.47	0.47	0.02
Queue Length 95th (ft)	0	0	0	2
Control Delay (s)	0.1	0.0	0.0	10.8
Lane LOS	A			B
Approach Delay (s)	0.0			10.8
Approach LOS				B

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	44.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	131	1643	81	0	0	0	0	98	117	40	176	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	10	12	12	12	12	14	12	12	16	12
Grade (%)		-2%			0%			2%			-5%	
Right Turn on Red			No			No			No			No
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		302			225			354			319	
Travel Time (s)		8.2			6.1			9.7			8.7	
Confl. Peds. (#/hr)	25		58	58		25	88		77	77		88
Confl. Bikes (#/hr)			1						1			
Peak Hour Factor	0.78	0.96	0.66	0.92	0.92	0.92	0.73	0.82	0.67	0.75	0.84	0.83
Heavy Vehicles (%)	7%	4%	4%	0%	0%	0%	0%	3%	10%	3%	12%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2002	0	0	0	0	0	295	0	0	263	0
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Minimum Split (s)	45.0	45.0						29.0		29.0	29.0	
Total Split (s)	47.0	47.0						33.0		33.0	33.0	
Total Split (%)	58.8%	58.8%						41.3%		41.3%	41.3%	
Maximum Green (s)	42.0	42.0						28.0		28.0	28.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0						2.0		2.0	2.0	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.0						5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	30.0	30.0						14.0		14.0	14.0	
Flash Dont Walk (s)	10.0	10.0						10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0						0		0	0	
Act Effct Green (s)		42.0						28.0			28.0	
Actuated g/C Ratio		0.52						0.35			0.35	
v/c Ratio		0.83						0.52			0.43	
Control Delay		19.8						24.6			22.6	
Queue Delay		0.0						0.0			0.0	
Total Delay		19.8						24.6			22.6	
LOS		B						C			C	
Approach Delay		19.8						24.6			22.6	
Approach LOS		B						C			C	
Queue Length 50th (ft)		289						115			99	
Queue Length 95th (ft)		357						168			151	
Internal Link Dist (ft)		222			145			274			239	
Turn Bay Length (ft)												
Base Capacity (vph)		2413						571			612	
Starvation Cap Reductn		0						0			0	
Spillback Cap Reductn		0						0			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.83						0.52			0.43	

Intersection Summary		
Area Type:	Other	
Cycle Length: 80		
Actuated Cycle Length: 80		
Offset: 48 (60%), Referenced to phase 2:EBTL, Start of Yellow		
Natural Cycle: 75		
Control Type: Pretimed		
Maximum v/c Ratio: 0.83		
Intersection Signal Delay: 20.7		Intersection LOS: C
Intersection Capacity Utilization 90.6%		ICU Level of Service E
Analysis Period (min) 15		

Splits and Phases: 6: Halket Street & Forbes Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	131	1643	81	0	0	0	0	98	117	40	176	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	10	12	12	12	12	14	12	12	16	12
Grade (%)		-2%			0%			2%			-5%	
Total Lost time (s)		5.0						5.0			5.0	
Lane Util. Factor		0.91						1.00			1.00	
Frpb, ped/bikes		1.00						0.95			1.00	
Flpb, ped/bikes		1.00						1.00			0.99	
Frt		0.99						0.92			1.00	
Flt Protected		1.00						1.00			0.99	
Satd. Flow (prot)		4596						1633			1965	
Flt Permitted		1.00						1.00			0.88	
Satd. Flow (perm)		4596						1633			1749	
Peak-hour factor, PHF	0.78	0.96	0.66	0.92	0.92	0.92	0.73	0.82	0.67	0.75	0.84	0.83
Adj. Flow (vph)	168	1711	123	0	0	0	0	120	175	53	210	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	2002	0	0	0	0	0	295	0	0	263	0
Confl. Peds. (#/hr)	25		58	58		25	88		77	77		88
Confl. Bikes (#/hr)			1						1			
Heavy Vehicles (%)	7%	4%	4%	0%	0%	0%	0%	3%	10%	3%	12%	0%
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		42.0						28.0			28.0	
Effective Green, g (s)		42.0						28.0			28.0	
Actuated g/C Ratio		0.52						0.35			0.35	
Clearance Time (s)		5.0						5.0			5.0	
Lane Grp Cap (vph)		2412						571			612	
v/s Ratio Prot								c0.18				
v/s Ratio Perm		0.44									0.15	
v/c Ratio		0.83						0.52			0.43	
Uniform Delay, d1		16.0						20.6			19.9	
Progression Factor		1.00						1.00			1.00	
Incremental Delay, d2		3.5						3.3			2.2	
Delay (s)		19.5						23.9			22.1	
Level of Service		B						C			C	
Approach Delay (s)		19.5			0.0			23.9			22.1	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	20.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	90.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	333	1471	67	0	0	0	0	221	55	78	183	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	10	12	12	12	12	10	12	11	11	12
Grade (%)		1%			0%			2%			-5%	
Right Turn on Red			No			No			Yes			No
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		473			420			318			328	
Travel Time (s)		12.9			11.5			8.7			8.9	
Confl. Peds. (#/hr)	107		212	212		107	127		160	160		127
Confl. Bikes (#/hr)									1			1
Peak Hour Factor	0.95	0.94	0.84	0.92	0.92	0.92	0.92	0.88	0.84	0.77	0.84	0.92
Heavy Vehicles (%)	1%	5%	3%	0%	0%	0%	0%	2%	9%	9%	3%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1996	0	0	0	0	0	316	0	101	218	0
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Minimum Split (s)	50.0	50.0						24.0		24.0	24.0	
Total Split (s)	53.0	53.0						27.0		27.0	27.0	
Total Split (%)	66.3%	66.3%						33.8%		33.8%	33.8%	
Maximum Green (s)	48.0	48.0						22.0		22.0	22.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0						2.0		2.0	2.0	
Lost Time Adjust (s)		0.0						0.0		0.0	0.0	
Total Lost Time (s)		5.0						5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	35.0	35.0						9.0		9.0	9.0	
Flash Dont Walk (s)	10.0	10.0						10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0						0		0	0	
Act Effct Green (s)		48.0						22.0		22.0	22.0	
Actuated g/C Ratio		0.60						0.28		0.28	0.28	
v/c Ratio		0.75						0.71		0.63	0.43	
Control Delay		6.0						35.8		45.6	27.2	
Queue Delay		0.0						0.0		0.0	0.0	
Total Delay		6.0						35.8		45.6	27.2	
LOS		A						D		D	C	
Approach Delay		6.0						35.8			33.0	
Approach LOS		A						D			C	
Queue Length 50th (ft)		52						137		44	89	
Queue Length 95th (ft)		58						#228		#83	140	
Internal Link Dist (ft)		393			340			238			248	
Turn Bay Length (ft)												
Base Capacity (vph)		2664						442		161	502	
Starvation Cap Reductn		0						0		0	0	
Spillback Cap Reductn		0						0		0	0	
Storage Cap Reductn		0						0		0	0	
Reduced v/c Ratio		0.75						0.71		0.63	0.43	

Intersection Summary		
Area Type:	Other	
Cycle Length: 80		
Actuated Cycle Length: 80		
Offset: 72 (90%), Referenced to phase 2:EBTL, Start of Yellow		
Natural Cycle: 75		
Control Type: Pretimed		
Maximum v/c Ratio: 0.75		
Intersection Signal Delay: 12.9	Intersection LOS: B	
Intersection Capacity Utilization 73.9%	ICU Level of Service D	
Analysis Period (min) 15		
# 95th percentile volume exceeds capacity, queue may be longer.		
Queue shown is maximum after two cycles.		

Splits and Phases: 11: McKee Place & Forbes Avenue

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	333	1471	67	0	0	0	0	221	55	78	183	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	10	12	12	12	12	10	12	11	11	12
Grade (%)		1%			0%			2%			-5%	
Total Lost time (s)		5.0						5.0		5.0	5.0	
Lane Util. Factor		0.91						1.00		1.00	1.00	
Frpb, ped/bikes		0.99						0.96		1.00	1.00	
Flpb, ped/bikes		0.98						1.00		0.89	1.00	
Frt		0.99						0.97		1.00	1.00	
Flt Protected		0.99						1.00		0.95	1.00	
Satd. Flow (prot)		4441						1579		1468	1828	
Flt Permitted		0.99						1.00		0.38	1.00	
Satd. Flow (perm)		4441						1579		585	1828	
Peak-hour factor, PHF	0.95	0.94	0.84	0.92	0.92	0.92	0.92	0.88	0.84	0.77	0.84	0.92
Adj. Flow (vph)	351	1565	80	0	0	0	0	251	65	101	218	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	9	0	0	0	0
Lane Group Flow (vph)	0	1996	0	0	0	0	0	307	0	101	218	0
Confl. Peds. (#/hr)	107		212	212		107	127		160	160		127
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	1%	5%	3%	0%	0%	0%	0%	2%	9%	9%	3%	0%
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		48.0						22.0		22.0	22.0	
Effective Green, g (s)		48.0						22.0		22.0	22.0	
Actuated g/C Ratio		0.60						0.28		0.28	0.28	
Clearance Time (s)		5.0						5.0		5.0	5.0	
Lane Grp Cap (vph)		2664						434		160	502	
v/s Ratio Prot								c0.19			0.12	
v/s Ratio Perm		0.45								0.17		
v/c Ratio		0.75						0.71		0.63	0.43	
Uniform Delay, d1		11.6						26.1		25.4	23.9	
Progression Factor		0.40						1.00		1.00	1.00	
Incremental Delay, d2		1.3						9.4		17.4	2.7	
Delay (s)		5.9						35.5		42.9	26.6	
Level of Service		A						D		D	C	
Approach Delay (s)		5.9			0.0			35.5			31.8	
Approach LOS		A			A			D			C	

Intersection Summary			
HCM 2000 Control Delay	12.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	73.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	15	1743	0	0	8	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	12	12	11	12
Grade (%)		1%	0%		0%	
Link Speed (mph)		25	25		25	
Link Distance (ft)		225	473		180	
Travel Time (s)		6.1	12.9		4.9	
Confl. Peds. (#/hr)	81				81	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1954	0	0	9	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 44.0%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	15	1743	0	0	8	0
Sign Control		Free	Free		Stop	
Grade		1%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	17	1937	0	0	9	0
Pedestrians			81		81	
Lane Width (ft)			0.0		11.0	
Walking Speed (ft/s)			4.0		4.0	
Percent Blockage			0		6	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		225	473			
pX, platoon unblocked					0.68	
vC, conflicting volume	81				841	81
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	81				0	81
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				99	100
cM capacity (veh/h)	1421				646	903

Direction, Lane #	EB 1	EB 2	EB 3	SB 1
Volume Total	404	775	775	9
Volume Left	17	0	0	9
Volume Right	0	0	0	0
cSH	1421	1700	1700	646
Volume to Capacity	0.01	0.46	0.46	0.01
Queue Length 95th (ft)	1	0	0	1
Control Delay (s)	0.4	0.0	0.0	10.7
Lane LOS	A			B
Approach Delay (s)	0.1			10.7
Approach LOS				B

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	44.0%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	57	1564	154	0	0	0	0	103	133	61	197	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	10	12	12	12	12	14	12	12	16	12
Grade (%)		-2%			0%			2%			-5%	
Right Turn on Red			No			No			No			No
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		486			225			354			375	
Travel Time (s)		13.3			6.1			9.7			10.2	
Confl. Peds. (#/hr)	66		112	112		66	102		109	109		102
Confl. Bikes (#/hr)			2						1			4
Peak Hour Factor	0.64	0.91	0.84	0.92	0.92	0.92	0.86	0.81	0.84	0.78	0.90	0.89
Heavy Vehicles (%)	0%	3%	1%	0%	0%	0%	0%	1%	10%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1991	0	0	0	0	0	285	0	0	297	0
Protected Phases		2						8			4	
Permitted Phases	2									4		
Minimum Split (s)	45.0	45.0						29.0		29.0	29.0	
Total Split (s)	49.0	49.0						31.0		31.0	31.0	
Total Split (%)	61.3%	61.3%						38.8%		38.8%	38.8%	
Maximum Green (s)	44.0	44.0						26.0		26.0	26.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0						2.0		2.0	2.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	30.0	30.0						14.0		14.0	14.0	
Flash Dont Walk (s)	10.0	10.0						10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0						0		0	0	
Act Effct Green (s)		44.0						26.0			26.0	
Actuated g/C Ratio		0.55						0.32			0.32	
v/c Ratio		0.78						0.54			0.56	
Control Delay		17.1						26.6			27.1	
Queue Delay		0.0						0.0			0.0	
Total Delay		17.1						26.6			27.1	
LOS		B						C			C	
Approach Delay		17.1						26.6			27.1	
Approach LOS		B						C			C	
Queue Length 50th (ft)		267						115			121	
Queue Length 95th (ft)		331						166			199	
Internal Link Dist (ft)		406			145			274			295	
Turn Bay Length (ft)												
Base Capacity (vph)		2538						531			534	
Starvation Cap Reductn		0						0			0	
Spillback Cap Reductn		0						0			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.78						0.54			0.56	

Intersection Summary	
Area Type:	Other
Cycle Length: 80	

Actuated Cycle Length: 80	
Offset: 52 (65%), Referenced to phase 2:EBTL, Start of Yellow	
Control Type: Pretimed	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 19.3	Intersection LOS: B
Intersection Capacity Utilization 90.1%	ICU Level of Service E
Analysis Period (min) 15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	57	1564	154	0	0	0	0	103	133	61	197	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	10	12	12	12	12	14	12	12	16	12
Grade (%)		-2%			0%			2%			-5%	
Total Lost time (s)		5.0						5.0			5.0	
Lane Util. Factor		0.91						1.00			1.00	
Frpb, ped/bikes		0.99						0.93			1.00	
Flpb, ped/bikes		1.00						1.00			0.98	
Frt		0.99						0.93			1.00	
Flt Protected		1.00						1.00			0.99	
Satd. Flow (prot)		4616						1635			2141	
Flt Permitted		1.00						1.00			0.76	
Satd. Flow (perm)		4616						1635			1647	
Peak-hour factor, PHF	0.64	0.91	0.84	0.92	0.92	0.92	0.86	0.81	0.84	0.78	0.90	0.89
Adj. Flow (vph)	89	1719	183	0	0	0	0	127	158	78	219	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1991	0	0	0	0	0	285	0	0	297	0
Confl. Peds. (#/hr)	66		112	112		66	102		109	109		102
Confl. Bikes (#/hr)			2						1			4
Heavy Vehicles (%)	0%	3%	1%	0%	0%	0%	0%	1%	10%	0%	0%	0%
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		44.0						26.0			26.0	
Effective Green, g (s)		44.0						26.0			26.0	
Actuated g/C Ratio		0.55						0.32			0.32	
Clearance Time (s)		5.0						5.0			5.0	
Lane Grp Cap (vph)		2538						531			535	
v/s Ratio Prot								0.17				
v/s Ratio Perm		0.43									c0.18	
v/c Ratio		0.78						0.54			0.56	
Uniform Delay, d1		14.2						22.1			22.2	
Progression Factor		1.00						1.00			1.00	
Incremental Delay, d2		2.5						3.9			4.1	
Delay (s)		16.8						25.9			26.4	
Level of Service		B						C			C	
Approach Delay (s)		16.8			0.0			25.9			26.4	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	18.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	90.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	93	1480	73	0	0	0	0	132	54	139	185	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	10	12	12	12	12	10	12	11	11	12
Grade (%)		1%			0%			2%			-5%	
Right Turn on Red			No			No			Yes			No
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		473			420			318			328	
Travel Time (s)		12.9			11.5			8.7			8.9	
Confl. Peds. (#/hr)	189		254	254		189	148		152	152		148
Confl. Bikes (#/hr)			9						1			1
Peak Hour Factor	0.79	0.93	0.89	0.92	0.92	0.92	0.92	0.77	0.83	0.93	0.92	0.92
Heavy Vehicles (%)	0%	4%	0%	0%	0%	0%	0%	2%	2%	9%	1%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1791	0	0	0	0	0	236	0	149	201	0
Protected Phases		2						8			4	
Permitted Phases	2									4		
Minimum Split (s)	45.0	45.0						29.0		29.0	29.0	
Total Split (s)	48.0	48.0						32.0		32.0	32.0	
Total Split (%)	60.0%	60.0%						40.0%		40.0%	40.0%	
Maximum Green (s)	43.0	43.0						27.0		27.0	27.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0						2.0		2.0	2.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	30.0	30.0						14.0		14.0	14.0	
Flash Dont Walk (s)	10.0	10.0						10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0						0		0	0	
Act Effct Green (s)		43.0						27.0		27.0	27.0	
Actuated g/C Ratio		0.54						0.34		0.34	0.34	
v/c Ratio		0.74						0.44		0.52	0.32	
Control Delay		6.1						23.3		29.4	21.5	
Queue Delay		0.0						0.0		0.0	0.0	
Total Delay		6.1						23.3		29.4	21.5	
LOS		A						C		C	C	
Approach Delay		6.1						23.3			24.8	
Approach LOS		A						C			C	
Queue Length 50th (ft)		60						88		59	74	
Queue Length 95th (ft)		68						125		120	127	
Internal Link Dist (ft)		393			340			238			248	
Turn Bay Length (ft)												
Base Capacity (vph)		2413						537		284	629	
Starvation Cap Reductn		0						0		0	0	
Spillback Cap Reductn		0						0		0	0	
Storage Cap Reductn		0						0		0	0	
Reduced v/c Ratio		0.74						0.44		0.52	0.32	

Intersection Summary	
Area Type:	Other
Cycle Length: 80	

Actuated Cycle Length: 80	
Offset: 67 (84%), Referenced to phase 2:EBTL, Start of Yellow	
Control Type: Pretimed	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 10.6	Intersection LOS: B
Intersection Capacity Utilization 74.9%	ICU Level of Service D
Analysis Period (min) 15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	93	1480	73	0	0	0	0	132	54	139	185	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	10	10	12	12	12	12	10	12	11	11	12
Grade (%)		1%			0%			2%			-5%	
Total Lost time (s)		5.0						5.0		5.0	5.0	
Lane Util. Factor		0.91						1.00		1.00	1.00	
Frpb, ped/bikes		0.99						0.96		1.00	1.00	
Flpb, ped/bikes		0.99						1.00		0.90	1.00	
Frt		0.99						0.96		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		4490						1583		1472	1864	
Flt Permitted		1.00						1.00		0.54	1.00	
Satd. Flow (perm)		4490						1583		843	1864	
Peak-hour factor, PHF	0.79	0.93	0.89	0.92	0.92	0.92	0.92	0.77	0.83	0.93	0.92	0.92
Adj. Flow (vph)	118	1591	82	0	0	0	0	171	65	149	201	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	1791	0	0	0	0	0	233	0	149	201	0
Confl. Peds. (#/hr)	189		254	254		189	148		152	152		148
Confl. Bikes (#/hr)			9						1			1
Heavy Vehicles (%)	0%	4%	0%	0%	0%	0%	0%	2%	2%	9%	1%	0%
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		43.0						27.0		27.0	27.0	
Effective Green, g (s)		43.0						27.0		27.0	27.0	
Actuated g/C Ratio		0.54						0.34		0.34	0.34	
Clearance Time (s)		5.0						5.0		5.0	5.0	
Lane Grp Cap (vph)		2413						534		284	629	
v/s Ratio Prot								0.15			0.11	
v/s Ratio Perm		0.40								c0.18		
v/c Ratio		0.74						0.44		0.52	0.32	
Uniform Delay, d1		14.2						20.6		21.3	19.7	
Progression Factor		0.33						1.00		1.00	1.00	
Incremental Delay, d2		1.4						2.6		6.8	1.3	
Delay (s)		6.0						23.2		28.1	21.0	
Level of Service		A						C		C	C	
Approach Delay (s)		6.0			0.0			23.2			24.0	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	10.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	74.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			