September 11, 2018
PK# 2067-18.149
Z178-260

TRAFFIC IMPACT ANALYSIS

Project:
DISD L.G. Pinkston High School
In Dallas, Texas

Prepared for:
City of Dallas

On behalf of:
Dallas Independent School District

Prepared by:

Hunter W. Lemley, P.E.

Pacheco Koch

7557 Rambler Road, Suite 1400
Dallas, Texas 75231-2388
(972) 235-3031 www.pkce.com
TX.REG: ENGINEERING FIRM F-469
TX. REG. SURVEYING FIRM LS-100080-00

EXECUTIVE SUMMARY

The services of **Pacheco Koch** were retained by Masterplan, on behalf of the **Dallas Independent School District** (DISD), to prepare a Traffic Impact Analysis (TIA) for *L.G. Pinkston High School* (the "School") located at 2200 Dennison Street in Dallas, Texas. The School currently consists of 900 students from grades 9th-12th. Upon completion of the proposed site, the enrollment is not expected to increase. Site improvements are anticipated to be complete by the 2021-2022 school year. A TIA is required for review by the City of Dallas as part of the Owner's request for amend the Planned Development District for the property.

The purpose of this report is to estimate the incremental impact on the background traffic operational conditions caused by the proposed development within a specific study area as determined by standardized engineering analyses. The study parameters used in this TIA are based upon the requirements of the City and are consistent with the standard industry practices used in similar studies.

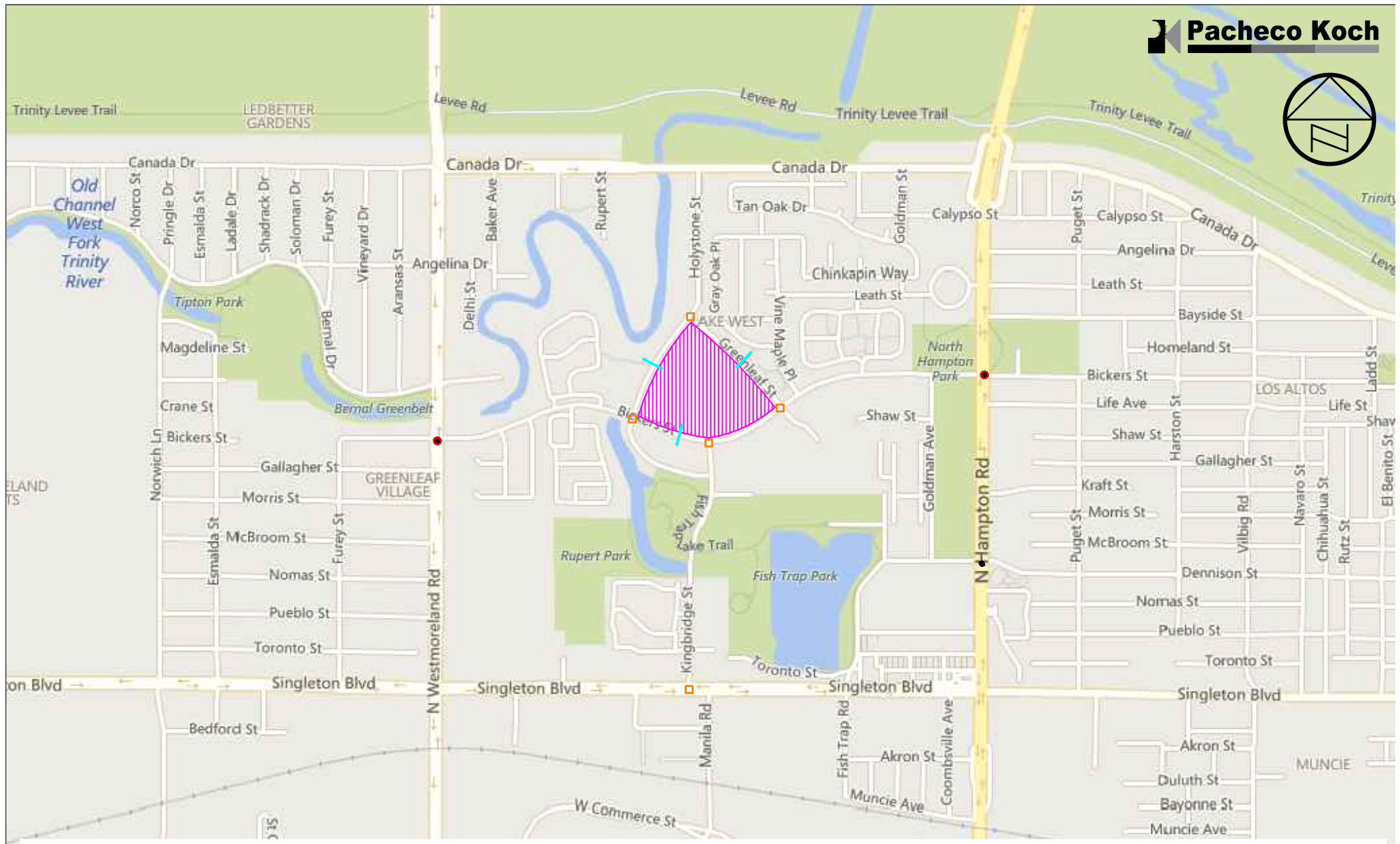
Based upon the analyses performed herein, Pacheco Koch developed the following findings and recommendations.

FINDING: Existing traffic operations at the study area intersections during peak school traffic periods achieve good Levels of Service. With the addition of estimated background traffic growth and traffic generated by the new school, average delays will increase, however acceptable Levels of Service will be maintained.

FINDING: In order to facilitate traffic during school hours for the existing schools on the subject site, Greenleaf Street was previously designated as one-way traffic flow as a result of the schools' primary access via Greenleaf Street.

- RECOMMENDATION: Traffic operations for the future L.G. High School will no longer benefit from the one-way traffic flow, therefore it is recommended that Greenleaf Street be converted to a permanent two-way operation.

END

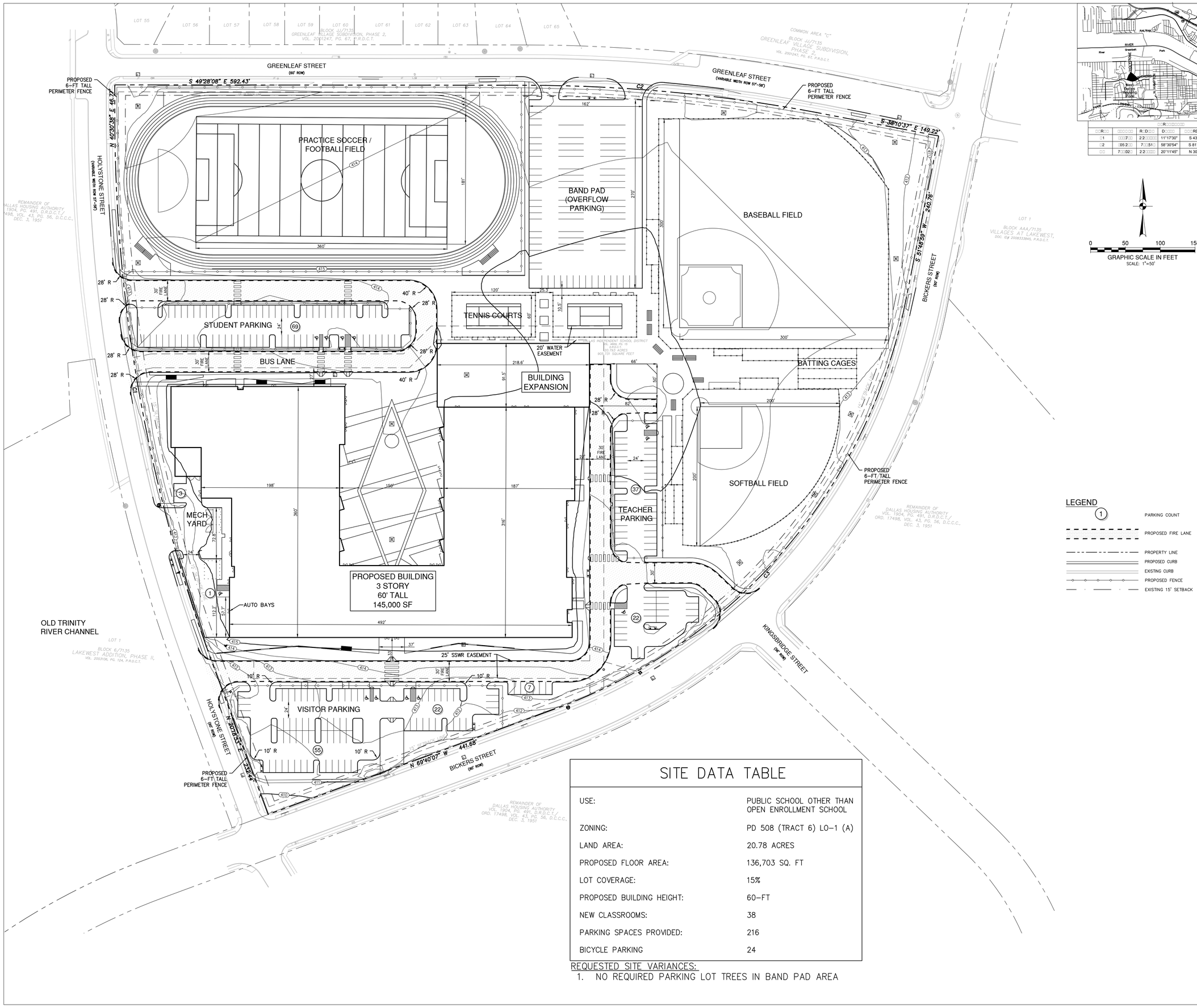


Site Location Map

DISD L.G. Pinkston High School, Dallas, Texas

PK #2067-18.149 (HWL: 05/08/18)

EXHIBIT **1**



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□1	□□□7□□	2 2□□□□□□	11°17'30"	S 43°49'23" E	□□□02□
□2	□05 2□□	7□□51□	58°30'54"	S 81°04'26" W	770.75□
□□	7□□02□	2 2□□□□□	20°11'45"	N 30°24'46" E	7□□□□□

LEGEND

(1)	PARKING COUNT
	PROPOSED FIRE LANE
	PROPERTY LINE
	PROPOSED CURB
	EXISTING CURB
	PROPOSED FENCE
	EXISTING 15' SETBACK

SITE DATA TABLE

USE:	PUBLIC SCHOOL OTHER THAN OPEN ENROLLMENT SCHOOL
ZONING:	PD 508 (TRACT 6) LO-1 (A)
LAND AREA:	20.78 ACRES
PROPOSED FLOOR AREA:	136,703 SQ. FT
LOT COVERAGE:	15%
PROPOSED BUILDING HEIGHT:	60-FT
NEW CLASSROOMS:	38
PARKING SPACES PROVIDED:	216
BICYCLE PARKING	24

REQUESTED SITE VARIANCES:

1. NO REQUIRED PARKING LOT TREES IN BAND PAD AREA

muñoz
1017 NORTH MAIN, SUITE 300
SAN ANTONIO, TEXAS 78212
0.210.349.1163 • F.210.525.1038

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PAPE-DAWSON ENGINEERS
DALLAS I SAN ANTONIO I AUSTIN I HOUSTON I FORT WORTH
5700 W PLANO PKWY, STE 2500 I PLANO, TX 75093 I 214.420.8494
TEXAS BOARD OF PROFESSIONAL ENGINEERS FIRM REGISTRATION #470

DALLAS INDEPENDENT SCHOOL DISTRICT

L.G. PINKSTON HIGH SCHOOL

DALLAS, TEXAS

DESIGN DEVELOPMENT

DALLAS ISD BOND PROGRAM 2015

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DEVELOPMENT PLAN

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EX-1

TRAFFIC IMPACT ANALYSIS
DISD L.G. Pinkston High School
Dallas, Texas

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INTRODUCTION

The services of **Pacheco Koch** (PK) were retained by Masterplan on behalf of **Dallas Independent School District** (DISD) to prepare a Traffic Impact Analysis for L.G. Pinkston High School located at 2200 Dennison Street in Dallas, Texas. A proposed site plan for the School, provided by Munoz Company, and a site location map (**Exhibit *1***) are provided following the EXECUTIVE SUMMARY section of this report.

In order to facilitate development of the Project, Dallas Independent School District (the "Applicant") has made a request to the City of Dallas (the "Approving Agency") for amend the Planned Development District for the property. As part of application process for this request, submittal of a TIA by the Applicant to the Approving Agency is required.

This TIA was prepared by traffic engineers at Pacheco Koch (the "Engineer") in accordance with industry and local standards. Pacheco Koch is a licensed engineering firm based in Dallas, Texas, that provides professional engineering and related services.

Purpose

A Traffic Impact Analysis (TIA) is an engineering study used to provide information on the projected off-site impacts produced by a specific "Project" on the traffic operations of public traffic facilities. Commissioning a TIA may be required by an "Approving Agency" when an "Applicant" is seeking approvals or entitlements for the Project, such as a change in zoning rights. Using standardized analysis methodologies, if the findings of the TIA indicate that the direct impacts attributed to a Project result in degradation of the conditions that would otherwise occur from an "acceptable" condition to an "unacceptable" condition, the Approving Agency may, within certain legal parameters, require the Applicant to fund the improvement(s) needed to mitigate the impacts. A TIA is used to identify when such instances are projected to occur.

A TIA should be prepared by a licensed "Engineer" skilled in the principles of traffic and transportation engineering and planning. The general methodologies, processes, and guidelines used in a TIA are established by industry standards—which are maintained by organizations such as the Institute of Transportation Engineers (ITE) and others—although, the project-specific parameters of the study (e.g., study locations, analysis scenarios, analytical assumptions, etc.) may be advised by technical staff of the Approving Agency.

When applicable the Engineer may provide recommendations or suggested modifications that, in the Engineer's opinion could improve overall traffic operations, safety, site access, circulation, etc. Such recommendations may or may not be directly related to the Project. However, implementation of any modifications is subject to approval of the respective agency that is responsible for the operation of the facilities. Also, the Engineer's suggested or recommended

modifications should not be considered mandatory and are not intended to assign or imply funding responsibility.

A TIA is not a detailed site plan review nor a substitute for local or regional transportation planning.

School Description

The School consists of an existing high school with grades 9th through 12th. The School currently is located at 2200 Dennison Street and will be relocated to the subject site with complete new construction. The new school building is anticipated to be complete by the 2021-2022 school year. Existing uses on the site include two vacant elementary schools (previously DISD George W. Carver Elementary School and DISD Dallas Environmental Academy), which will be razed, and the sites incorporated into the new high school building.

School starts at 9:15 AM and ends at 4:15 PM. Enrollment at the existing campus is 900 students; enrollment at the new campus is expected to remain at the existing level. A summary of the proposed development program, by phase, is provided in **Table 1**. Calculations for vehicle accumulation and parking numbers are based upon previously city-staff-approved ratios and validated by on-site dismissal observations conducted on Monday, April 16th, 2018.

Table 1. Development Program Summary

GRADES	EXISTING	PROPOSED
9th Grade	--	--
10th Grade	--	--
11th Grade	--	--
12th Grade	--	--
TOTAL	900	900

NOTE: The enrollment data provided above is based upon the most current and complete information available at the time of this study publication.

Access to the campus will be provided by Bickers Street and Holystone Street. Bickers Street, a local street, intersects with Kingbridge Street, a local street, just south of the property. Land uses surrounding the site are exclusively single family residential.

The 20.78-acre subject site is currently zoned PD 508 (Tract 6) LO-1 (A).

Study Parameters

The study parameters used in this TIA are based upon industry standard practices and requirements of the City of Dallas. Project-specific study parameters were reviewed with the City staff at the outset of the study.

This TIA analyzed the day-to-day traffic operations at time periods that have the greatest combined traffic volume on the public roadway system resulting from both background traffic and site-related traffic. Due to the predominant influence

of background traffic, the weekday AM and PM peak hours of adjacent street traffic are typically analyzed.

The analysis scenarios addressed in this study include the following:

- at existing conditions ("Existing" scenario)
- at site buildout year without site-generated traffic ("Background" scenario)
- at site buildout year with site-generated traffic ("Buildout" scenario)
- at Horizon with site-generated traffic ("Horizon" or "Regional" scenario)

NOTE: Analyses of all future conditions scenarios utilize projected traffic volumes derived by Pacheco Koch using reasonable and customary assumptions that are based upon existing conditions where possible. ITE appropriately points out that, due to natural changes in traffic patterns that occur over time, the margin of error for projected traffic volumes increases as the length of time of the projection increases; and, any projection of hourly turning movement volumes beyond five years inherently contain significant assumptions.

The following technical assumptions were also made in this analysis.

- Background traffic is expected to increase at a rate of 1.0 percent per year based upon professional judgment
- Possible deductions from the existing L.G. Pinkston High School traffic utilizing N Westmoreland Road and N Hampton Road was not considered in this analysis.

Study Area

The study area for a TIA is typically defined to allow an assessment of the most relevant traffic impacts to the local area. The extent of the study area is discretionary but is generally commensurate with the scale of the proposed development. Special localized factors may also be considered. The specific locations included in the study area of this TIA are listed below and depicted in **Exhibit *1***.

Traffic-Signal-Controlled Intersections:

(a) N Westmoreland Road and Bickers Street
(b) N Hampton Road and Bickers Street

STOP-Sign-Controlled Intersections:

(c) Bickers Street and Holystone Street
(d) Bickers Street and Kingbridge Street
(e) Bickers Street and Greenleaf Street
(f) Singleton Boulevards and Kingbridge Street
(g) Holystone Street and Greenleaf Street

Roadway Links:

(A) Bickers Street between Holystone Street and Greenleaf Street

- Existing operation and cross-section: *two lanes, two-way operation, no median*
- City of Dallas Thoroughfare Plan Designation: *none (local street)*
- Current Daily Traffic Volume: *5,481 (Tuesday, April 17th, 2018)*

TRAFFIC IMPACT ANALYSIS

The following is a description of the analyses performed as part of this Traffic Impact Analysis.

Approach

The TIA presented in this report analyzed the operational conditions for the peak hours and study area as defined above using standardized analytical methodologies where applicable. Current (or recent) traffic volume data were collected on a typical day throughout the study area to represent existing traffic conditions. Where applicable, growth factors were applied to the existing volumes to project future background traffic at the site buildout year conditions. Then, traffic generated by the proposed development was projected using the standard three-step approach: Trip Generation, Trip Distribution, and Traffic Assignment. By adding the site-generated traffic to the background traffic, the resulting site-plus-background traffic impact to operational conditions may be assessed from which approach mitigation measures may be recommended, if needed.

Background Traffic Volume Data

Existing Volumes

Current traffic volumes were collected during the analysis periods at the study area intersections on Tuesday, April 17th, 2018. Traffic volumes are graphically summarized in **Appendix A**; detailed data sheets are provided in **Appendix B**.

Projected Background Traffic Volumes

Background traffic growth is defined as the normal growth of traffic that is not directly related to the subject development of this study. By applying the assumed growth rate(s) described previously, future background traffic volumes at the Project buildout year were calculated for the study area intersections. These volumes are graphically summarized in **Appendix A.**

Site-Related Traffic

Trip Generation

Trip generation is calculated in terms of "trip ends" – a trip end is a one-way vehicular trip entering or exiting a site driveway (i.e., a single vehicle entering and exiting a site represents two trip ends). Trip generation for this Project was calculated using the Institute of Transportation Engineers (ITE) *Trip Generation* manual (10th Edition). ITE *Trip Generation* is a compilation of actual, vehicular traffic volume generation data and statistics by land use as collected over several decades by creditable sources across the country. Using the ITE equations and

rates is an accepted methodology to calculate the projected site-generated traffic volumes for many land uses (though engineering judgment is strongly advised).

The base trip generation data from ITE generally reflect average conditions for a standalone use on a typical day. However, in some cases, the Engineer may judge that other factors may be of sufficient significance to warrant adjusting the base ITE calculations in order to more accurately reflect Project-specific conditions. For this analysis no adjustments to the base ITE data were applied.

Table 2 provides a summary of the calculated trip ends generated by the project. Supplemental information used in the trip generation calculations is provided in **Appendix C.**

Table 2. Projected Trip Generation Summary

SCENARIO	DAILY TRIP ENDS (WEEKDAY)	AM PEAK HOUR TRIP ENDS (GENERATOR PEAK)	PM PEAK HOUR TRIP ENDS (GENERATOR PEAK)
		Total (In/Out)	**Total** (In/Out)
Proposed Uses	2,059	**533** (362/171)	**319** (102/217)

Trip Distribution and Assignment

The distribution and assignment of site-generated trip ends to the surrounding roadway system is determined by proportionally estimating the orientation of travel via various travel routes. This is a subjective exercise based upon professional judgment considering such factors as directional characteristics of existing local traffic, trip attributes (e.g., trip purpose, trip length, travel time, etc.), roadway features (e.g., capacity, operational conditions, character of environment), regional demographics, etc.

Traffic for the proposed redevelopment was distributed and assigned to the study area roadway network based upon consideration of the factors listed above. Detailed trip distribution and traffic assignment calculations and results are summarized in **Appendix C**.

Site-Generated Traffic Volumes

Site-generated traffic is calculated by multiplying the trip generation value (from **Table 2**) by the corresponding traffic assignments (from **Appendix C**). The resulting cumulative (for all uses) peak period site-generated traffic volumes at buildout of the Project are graphically summarized in **Appendix A**.

Traffic Operational Analysis —Roadway Intersections

Description

The level of performance of civil infrastructure can often be measured through an analysis of volume and capacity that considers various physical and operational characteristics of the system. For vehicular traffic an operational analysis of roadway intersection capacity over a 60-minute period is the most detailed type

of analysis. An industry-standardized methodology for this type of analysis was developed by the Transportation Research Board and is presented in the Highway Capacity Manual (HCM). HCM uses the term "Level of Service" (or, LOS) to qualitatively describe the efficiency using a letter grade of A through F. Generally, LOS can be described as follows:

LOS *A* = free, unobstructed flow
LOS *B* = reasonably free flow
LOS *C* = stable flow
LOS *D* = approaching unstable flow
LOS *E* = unstable flow, operating at design capacity
LOS *F* = operating over design capacity

Traffic operational analysis is typically measured in one-hour periods during day-to-day peak conditions. In most urban settings, LOS C, or better, is desirable, although LOS D is considered to be acceptable in urban conditions; LOS E indicates a facility or maneuver is approaching capacity, while LOS F is theoretically an over-capacity condition. On highly-utilized transportation facilities, brief periods of LOS E or F conditions are not uncommon for during peak periods. In some cases measures to increase capacity, either through operational changes and/or physical improvements, can be identified to improve efficiency and sometimes raise Level of Service.

For traffic-signal-controlled ("signalized") intersections and STOP-controlled ("unsignalized") intersections, LOS is determined based upon the calculated average seconds of delay per vehicle. For signalized intersections the average delay per vehicle can be effectively calculated for the entire intersection; however, for unsignalized intersections the average delay per vehicle is calculated only by approach or by individual traffic maneuvers that must stop or yield right-of-way.

NOTE: The HCM unsignalized intersection analysis methodology was developed and calibrated for low-to-moderate volume intersections. When applied to intersections with one or more high-volume or high-capacity approaches, the analyses often reflect poor results (i.e., low Level of Service). However, the actual delay/operational conditions are typical of similar locations and do not necessarily represent unique conditions. Low-performing, high-volume, unsignalized intersections cannot be analytically mitigated unless a traffic signal is installed. (Traffic signal installation is subject to a detailed analysis of established criteria AND approval of the responsible agency. Neither Level of Service nor vehicle delay is a warrant for traffic signal installation.)

The following table summarizes the LOS criteria for signalized and unsignalized intersections as defined in the latest edition of the *Highway Capacity Manual*.

	Signalized Intersection (Average Delay per Vehicle)	Unsignalized Intersection (Average Delay per Vehicle)
LOS *A*	≤ 10	≤ 10
LOS *B*	> 10 - ≤ 20	> 10 - ≤ 15
LOS *C*	> 20 - ≤ 35	> 15 - ≤ 25
LOS *D*	> 35 - ≤ 55	> 25 - ≤ 35
LOS *E*	> 55 - ≤ 80	> 35 - ≤ 50
LOS *F*	> 80	> 50

Analysis Traffic Volumes

Determination of the traffic impact associated with the Project is measured by comparing the incremental change in operational conditions during peak periods with and without site-related traffic. **Appendix A** provides exhibits summarizing the following:

- Existing traffic volumes during study peak hours
- Projected Background traffic volumes at the Site Buildout Year during study peak hours
- Projected Site-Generated traffic volumes during study peak hours
- Projected Background-plus-Site-Generated traffic volumes at the Site Buildout Year during study peak hours
- Projected Horizon traffic volumes, including Site-Generated traffic during study peak hours

A summary of the existing intersection/roadway geometry and traffic control devices is also graphically summarized in **Appendix A**.

Summary of Results

Intersection capacity analyses presented in this study were performed using the *Synchro* software package. **Table 3** and **Table 4** provide a summary of the peak period intersection operational conditions under the analysis conditions presented previously. Detailed software output is provided in **Appendix D**.

NOTE: Traffic signal operational parameters used in this analysis were based upon actual, existing traffic signal operational characteristics observed in the field at the time of traffic data collection.

See specific recommendations in the *SUMMARY OF FINDINGS AND RECOMMENDATIONS* section of this report.

Table 3. Peak Hour Intersection Capacity Analysis Results Summary
(Signalized Intersections)

INTERSECTION	EXISTING CONDITIONS		BACKGROUND CONDITIONS		BUILDOUT CONDITIONS		HORIZON CONDITIONS	
	AM	PM	AM	PM	AM	PM	AM	PM
N Westmoreland Road @ Bickers Street	A (7.0)	A (9.9)	A (7.0)	A (9.9)	B (12.4)	B (12.8)	B (13.0)	B (13.5)
N Hampton Road @ Bickers Street	B (11.4)	C (22.7)	B (11.4)	C (23.0)	D (37.4)	C (29.0)	D (38.0)	C (29.6)

NOTE: Traffic signal operational parameters used in this analysis were based upon actual traffic signal operational characteristics observed in the field at the time of data collection.

Table 4. Peak Hour Intersection Capacity Analysis Results Summary
(Unsignalized Intersections)

INTERSECTION	TRAFFIC MANEUVER	EXISTING CONDITIONS		BACKGROUND CONDITIONS		BUILDOUT CONDITIONS	
		AM	PM	AM	PM	AM	PM
Bickers Street @ Holystone Street	NBLTR	A (9.4)	B (12.7)	A (9.4)	B (12.7)	A (10.0)	B (11.8)
	EBL	A (7.5)	A (8.3)	A (7.5)	A (8.3)	--	--
	WBL	A (0.0)	A (0.0)	A (0.0)	A (0.0)	A (0.0)	A (0.0)
	SBLTR	A (9.2)	B (11.4)	A (9.2)	B (11.4)	A (9.9)	B (11.9)
Bickers Street @ Kingbridge Street\ Site Driveway 1	NBLTR	A (9.4)	B (12.5)	A (9.4)	B (12.5)	B (10.2)	B (14.6)
	EBL	--	--	--	--	--	--
	WBL	A (7.5)	A (7.7)	A (7.5)	A (7.7)	A (7.7)	A (7.9)
	SBLTR	--	--	--	--	B (11.0)	C (16.0)
Bickers Street @ Greenleaf Street	NBLTR	A (7.6)	A (8.0)	A (7.6)	A (8.0)	A (8.8)	A (8.6)
	EBLT	A (8.1)	A (8.5)	A (8.1)	A (8.5)	B (12.3)	A (10.0)
	EBTR	A (7.6)	A (8.0)	A (7.6)	A (8.0)	A (8.6)	A (9.1)
	WBLT	A (7.9)	A (8.7)	A (7.9)	A (8.7)	A (8.5)	A (9.9)
	WBTR	A (7.9)	A (9.7)	A (7.9)	A (9.7)	A (9.5)	A (10.0)
	SBLTR	A (7.7)	A (8.3)	A (7.7)	A (8.3)	A (8.9)	A (9.0)
Singleton Boulevard @ Kingbridge Street	EBL	B (10.1)	B (12.8)	B (10.2)	B (13.0)	B (10.8)	B (13.3)
	SBLTR	B (13.8)	C (24.4)	B (14.0)	D (25.6)	C (16.3)	D (31.3)
Holystone Street @ Greenleaf Street	NBTR	A (5.0)	A (5.0)	A (5.0)	A (5.0)	A (7.7)	A (7.7)
	WBLR	--	--	--	--	B (11.0)	A (8.5)
	SBLT	A (5.0)	A (5.0)	A (5.0)	A (5.0)	A (8.1)	A (8.0)
Holystone Street @ Site Driveway 2	SBL	--	--	--	--	A (7.7)	A (7.6)
Holystone Street @ Site Driveway 3	SBL	--	--	--	--	A (7.3)	A (7.5)
Holystone Street @ Site Driveway 4	WBL	--	--	--	--	A (8.6)	A (9.3)
	SBL	--	--	--	--	A (7.4)	A (7.5)

KEY:
A, B, C, D, E, F = Level-of-Service
NB-, SB-, EB-, WB- = intersection approach
AM = AM Peak Hour of Adjacent Street
(##.#) = Average Seconds of Delay Per Vehicle
-L, -T, -R = Left, Through, Right turning movement
PM = PM Peak Hour of Adjacent Street

Traffic Operational Analysis —Roadway Links

Description

A roadway link is a segment of roadway between two intersections. Roadway link capacity analysis is a comparison of actual or forecasted traffic volumes to the theoretically optimum roadway capacity. The capacity of the roadway link is predominantly a function of the roadway's cross-section (i.e., number of lanes, lane widths, type of center divider, etc.). However, other more theoretical factors also apply, such as the character of environment and the functional classification of the roadway. Generally, roadway link capacity is less critical than intersection capacity; however, it can provide a gage of the utilization of given roadway.

A specific industry standard for roadway link capacity does not exist, but the typical concept is derived from a base saturation flow rate (i.e., the maximum theoretical rate of continuous flow under ideal, unobstructed conditions -- in the traffic engineering industry, this value is generally considered to range between 1,900-2,100 vehicles per lane per hour). A series of adjustment factors are then applied to the saturation flow rate to reflect the characteristics of a given location.

The North Central Texas Council of Governments (NCTCOG) – the metropolitan planning agency for the Dallas-Fort Worth region – has derived internal "hourly service volume" guidelines used for transportation modelling purposes. The NCTCOG values were based upon the principals presented in the *Highway Capacity Manual* with "regional calibration" factors applied. Though these per-lane capacities, or "Service Volumes" (summarized in the table below), are intended for modelling purposes, they do provide a reasonable gage of theoretical capacity.

Area Type	Hourly Service Volumes By Roadway Function					
	Principal Arterial		Minor Arterial & Frontage Road		Collector & Local Street	
	Median-Divided or One-Way	Undivided Two-Way	Median-Divided or One-Way	Undivided Two-Way	Median-Divided or One-Way	Undivided Two-Way
CBD	725	650	725	650	475	425
Urban/ Commercial	850	775	825	750	525	475
Residential	925	875	900	825	575	525
Rural	1,025	925	975	875	600	550

To determine the utilization of a roadway, the volume:capacty ratio can be calculated – a v/c ratio of less than 1.0 indicates that the roadway is operating under capacity. NCTCOG's Level of Service denominations are as follows:

Volume:Capacity Ratio $\leq$ 25% is LOS *A*,
Volume:Capacity Ratio > 25% and $\leq$ 45% is LOS *B*,
Volume:Capacity Ratio > 45% and $\leq$ 65% is LOS *C*,
Volume:Capacity Ratio > 65% and $\leq$ 80% is LOS *D*,

Volume:Capacity Ratio > 80% and ≤ 100% is LOS *E*,
Volume:Capacity Ratio ≥ 100% is LOS *F*

Summary of Results

For roadways adjacent to or in the vicinity of the subject site, the volume/capacity ratio was calculated for existing and site buildout conditions. A summary of the link capacity analysis is provided in **Table 5**. See specific recommendations in the *Recommendations* section of this report.

Table 5. Roadway Link Capacity Analysis Results Summary

ROADWAY/ SCENARIO	DAILY VOLUME	THEORETICAL DAILY CAPACITY	V:C RATIO/ LEVEL OF SERVICE
Bickers Street			
Existing Conditions	5,481	19,000	0.29 – *B*
Buildout Year-Buildout Conditions	5,996	19,000	0.32 – *B*

SUMMARY OF FINDINGS AND RECOMMENDATIONS

NOTE: Recommendations presented in this report reflect the opinion of Pacheco Koch based solely upon technical analysis and professional judgment but are not intended to infer mandates or funding responsibility. Any proposed improvements in the public right-of-way are subject to approval of the responsible agency(-ies). Should the approving agency determine that any off-site improvements are required for approval of the Project, legal precedents apply with regard to jurisdiction and funding allocation.

The following findings and recommendations are based upon buildout of the subject property in accordance with the hypothetical development scenario outlined in the School Description section of this report.

FINDING: Existing traffic operations at the study area intersections during peak school traffic periods achieve good Levels of Service. With the addition of estimated background traffic growth and traffic generated by the new school, average delays will increase, however acceptable Levels of Service will be maintained.

FINDING: In order to facilitate traffic during school hours for the existing schools on the subject site, Greenleaf Street was previously designated as one-way traffic flow as a result of the schools' primary access via Greenleaf Street.

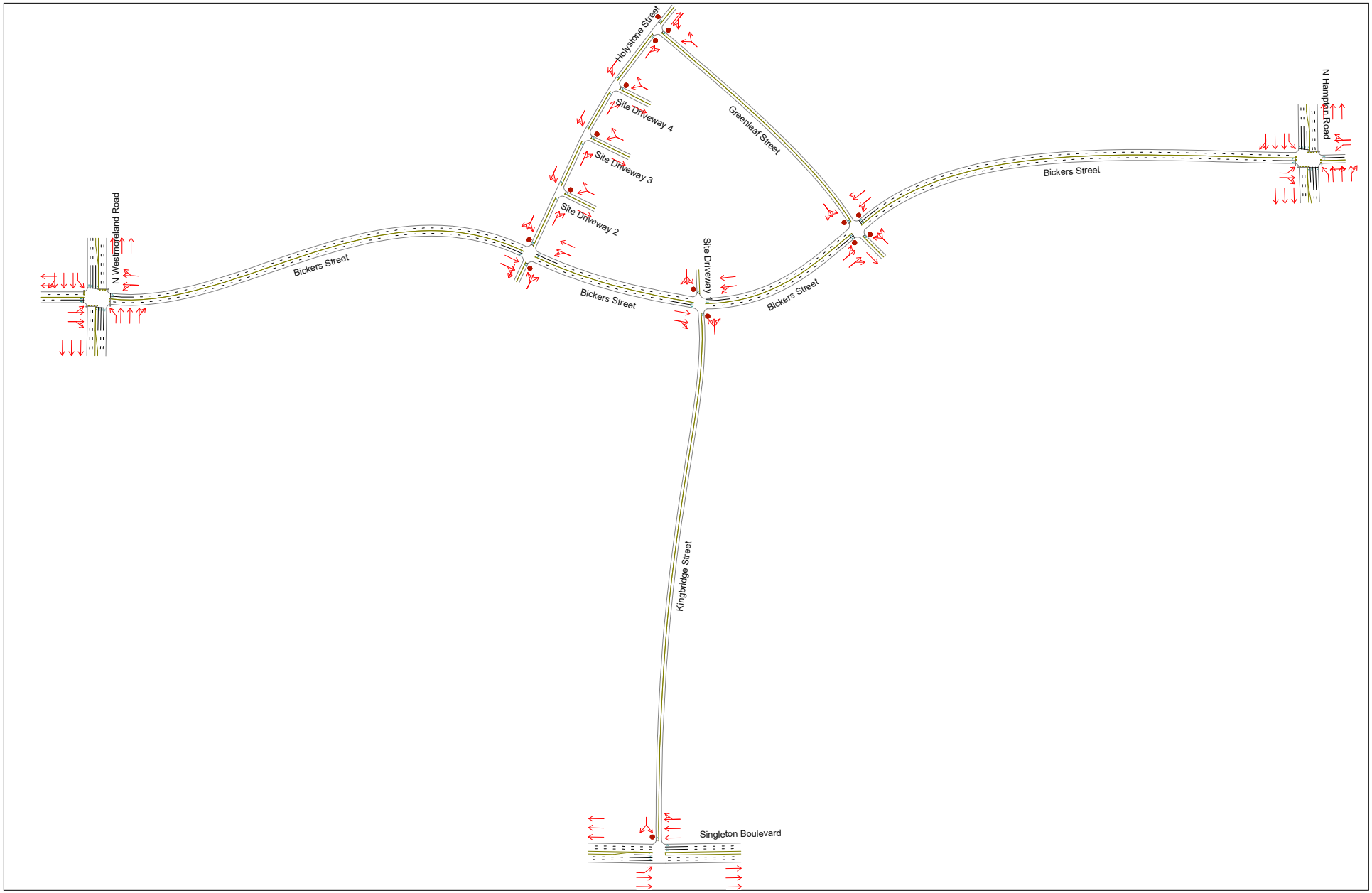
- ❖ RECOMMENDATION: Traffic operations for the future L.G. High School will no longer benefit from the one-way traffic flow, therefore it is recommended that Greenleaf Street be converted to a permanent two-way operation.

END OF MEMO

Appendix A. Traffic Volume Exhibits

Appendix A1 - Roadway Geometry

North ^
Not to Scale



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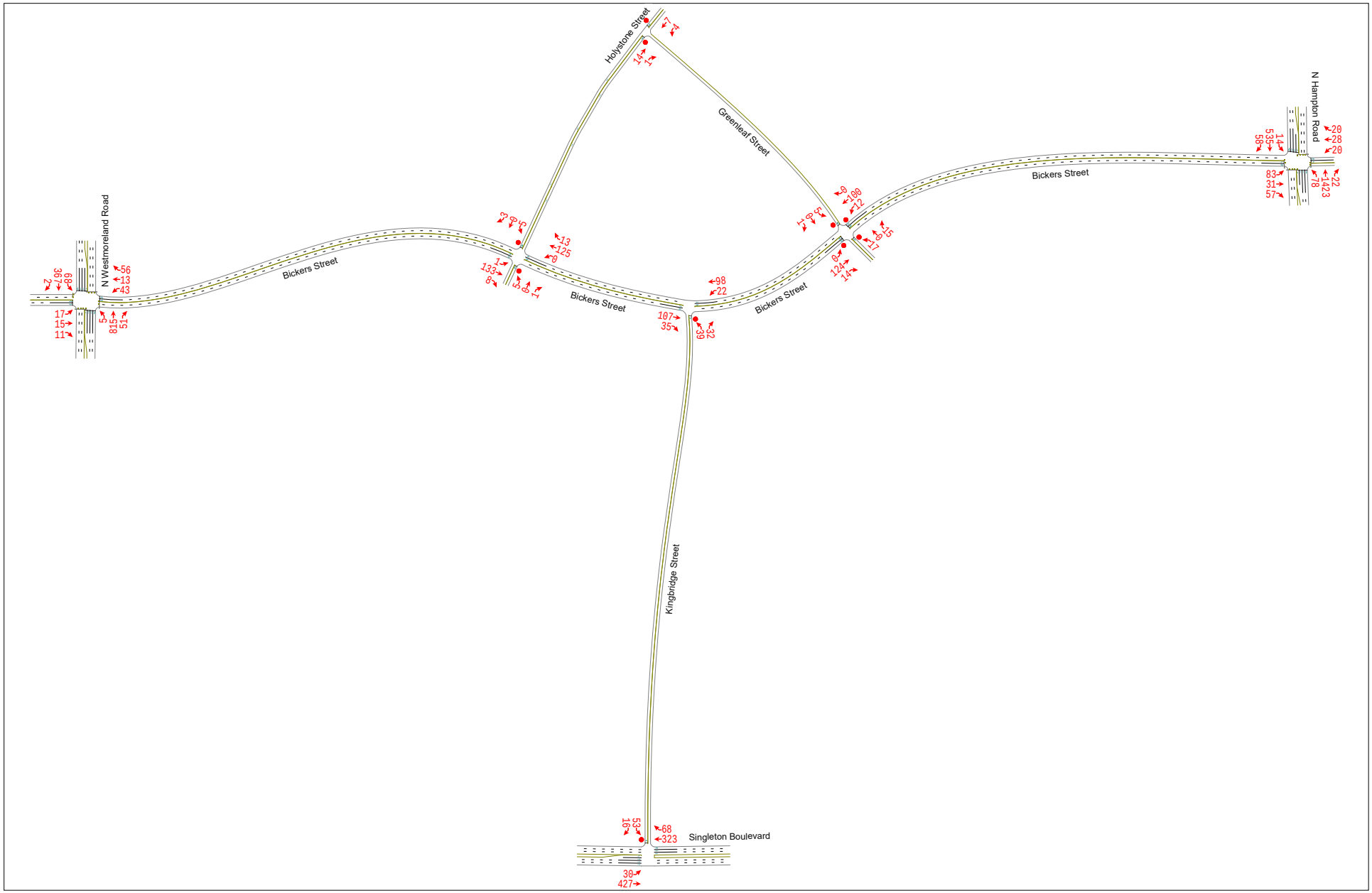
Pacheco Koch

Appendix A2 - Existing AM Peak Hour Traffic Volumes

North ^

Not to Scale



2067-18.149

HWL

05/08/2018

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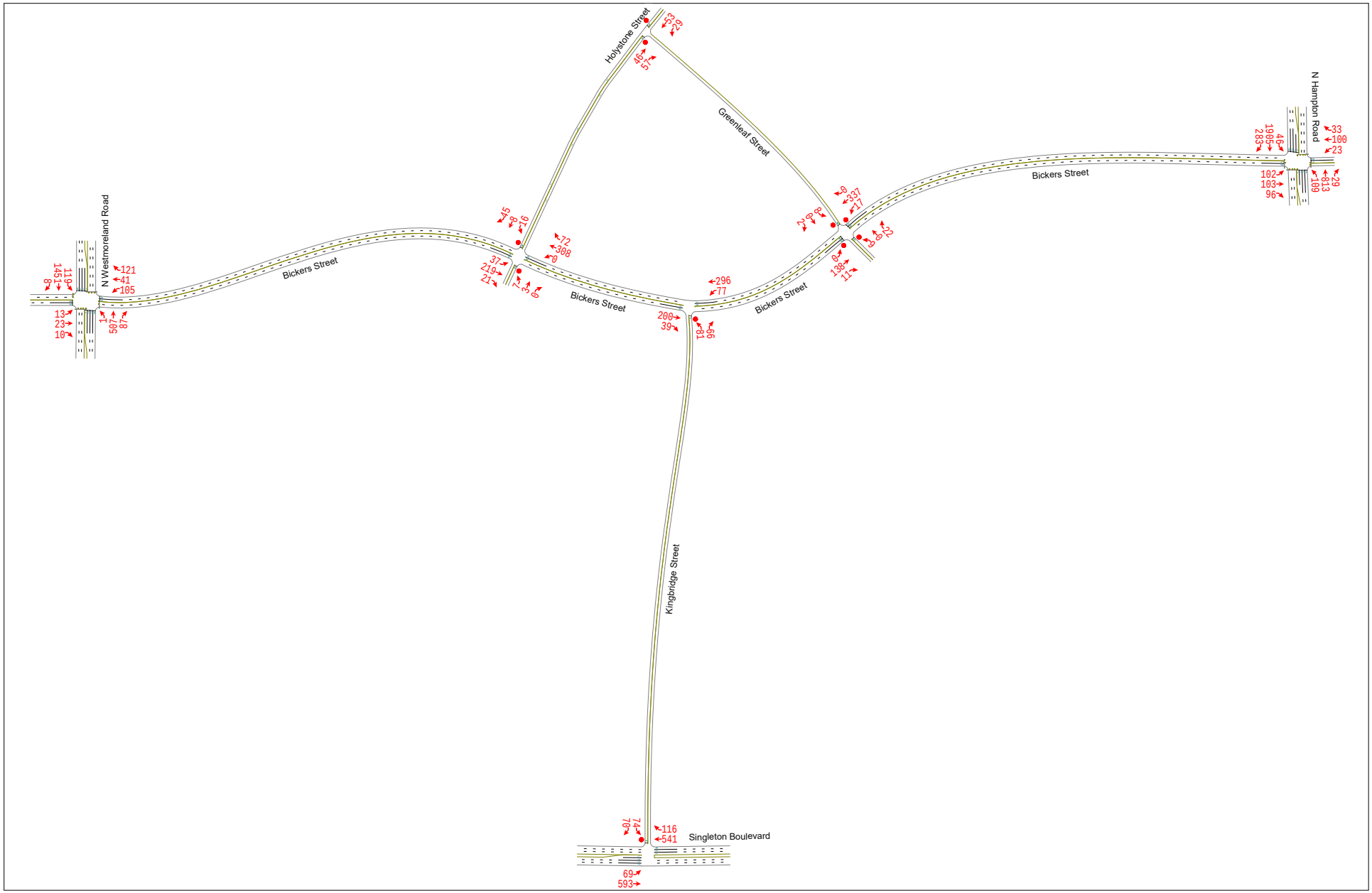
Appendix A3 - Existing PM Peak Hour Traffic Volumes

North ^

Not to Scale



2067-18.149

HWL

05/08/2018

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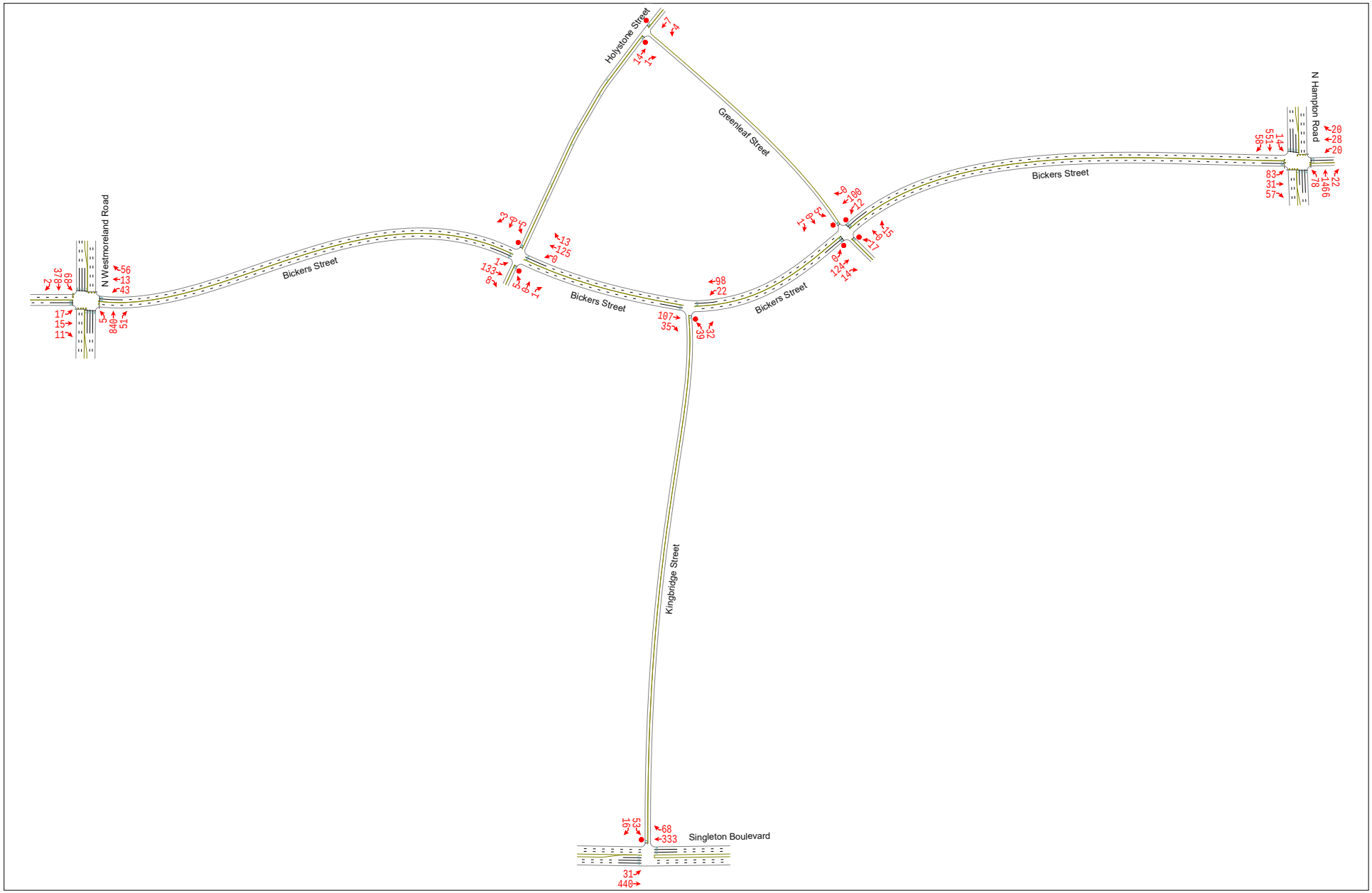
Appendix A4 - Background AM Peak Hour Traffic Volumes

North ^

Not to Scale



2067-18.149

HWL

05/08/2018

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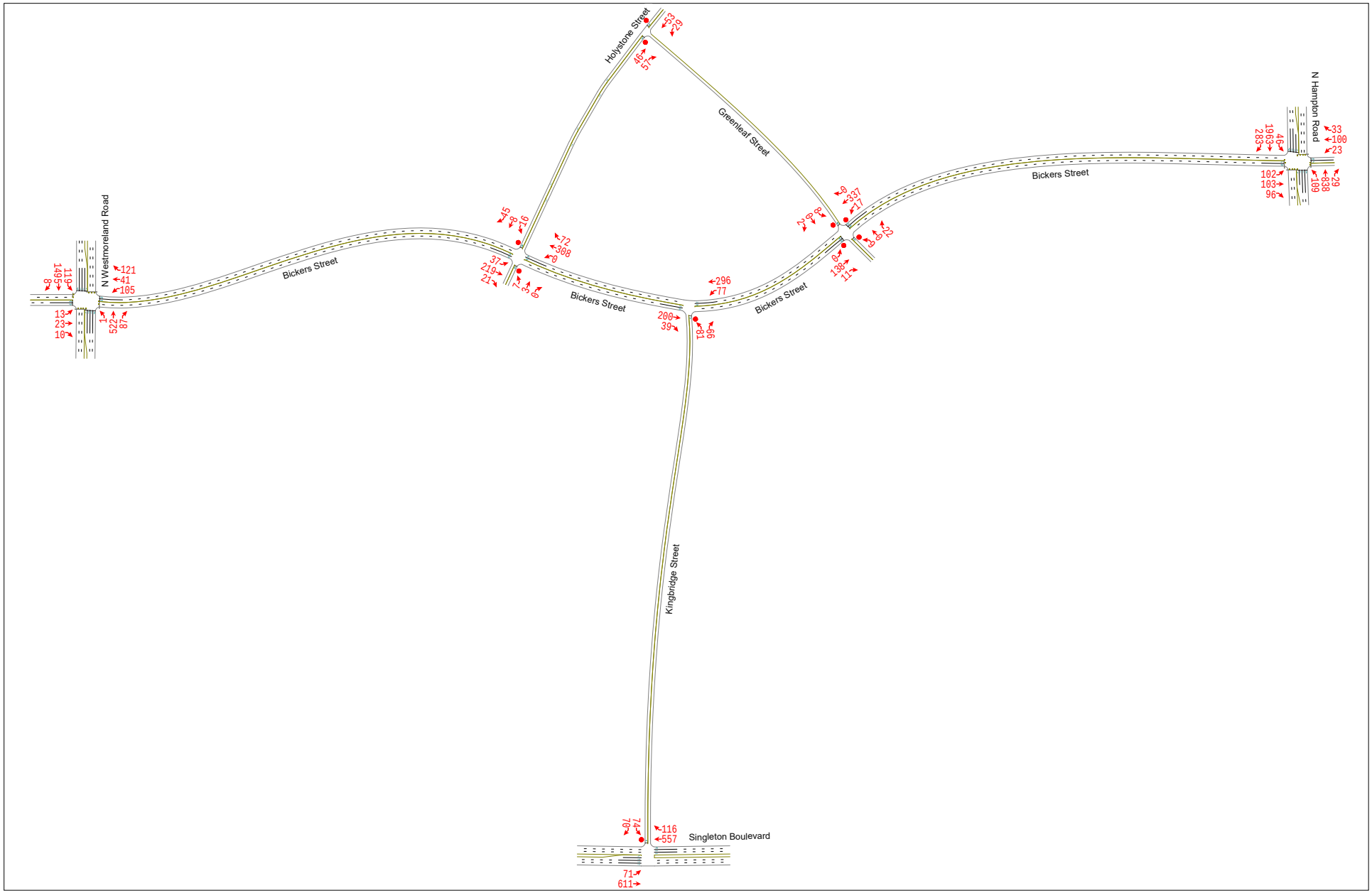
Appendix A5 - Background PM Peak Hour Traffic Volumes

North ^

Not to Scale



2067-18.149

HWL

05/08/2018

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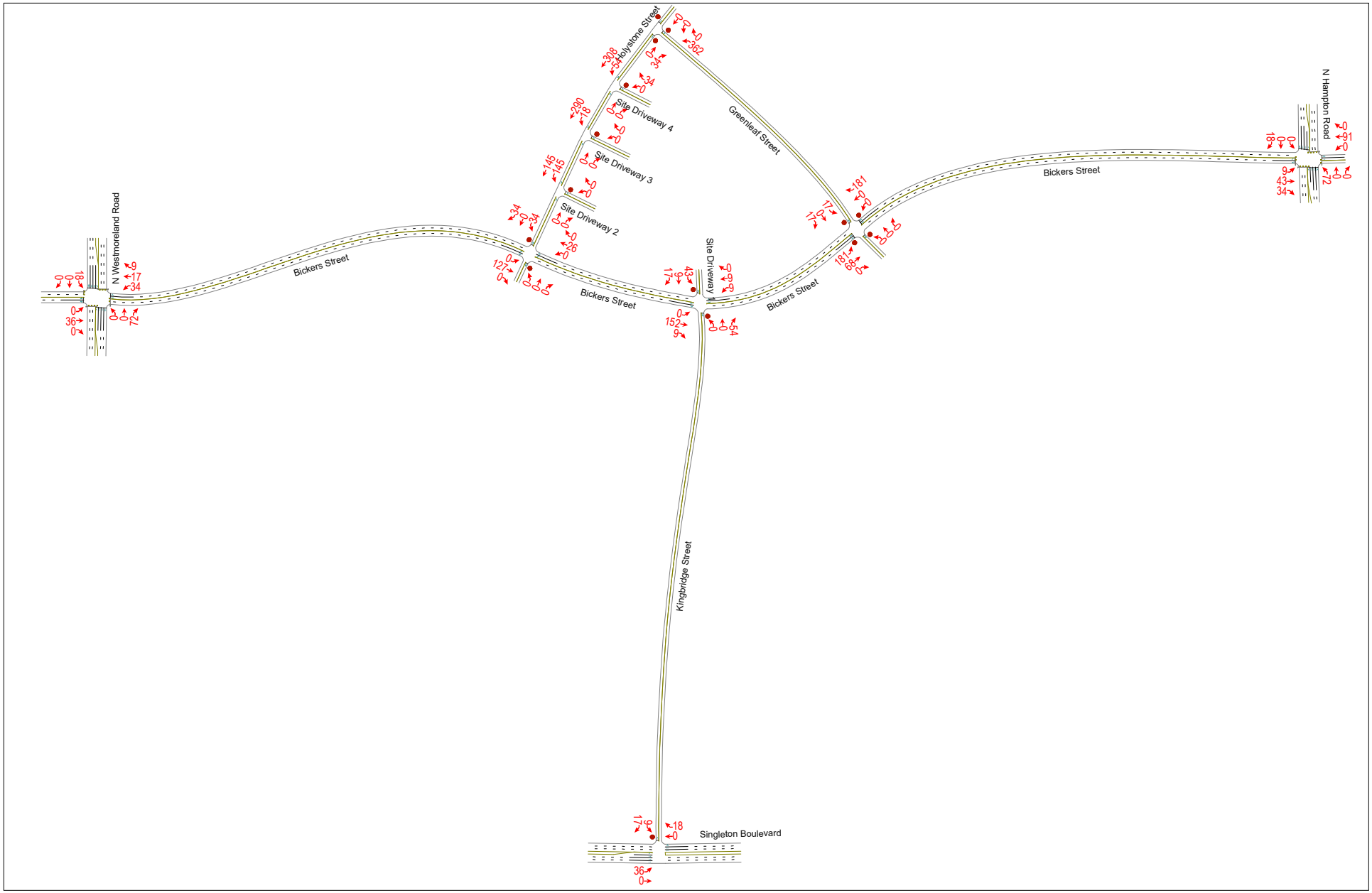
Appendix A6 - Site Generated AM Peak Hour Traffic Volumes

North ^

Not to Scale



2067-18.149

HWL

09/11/2018

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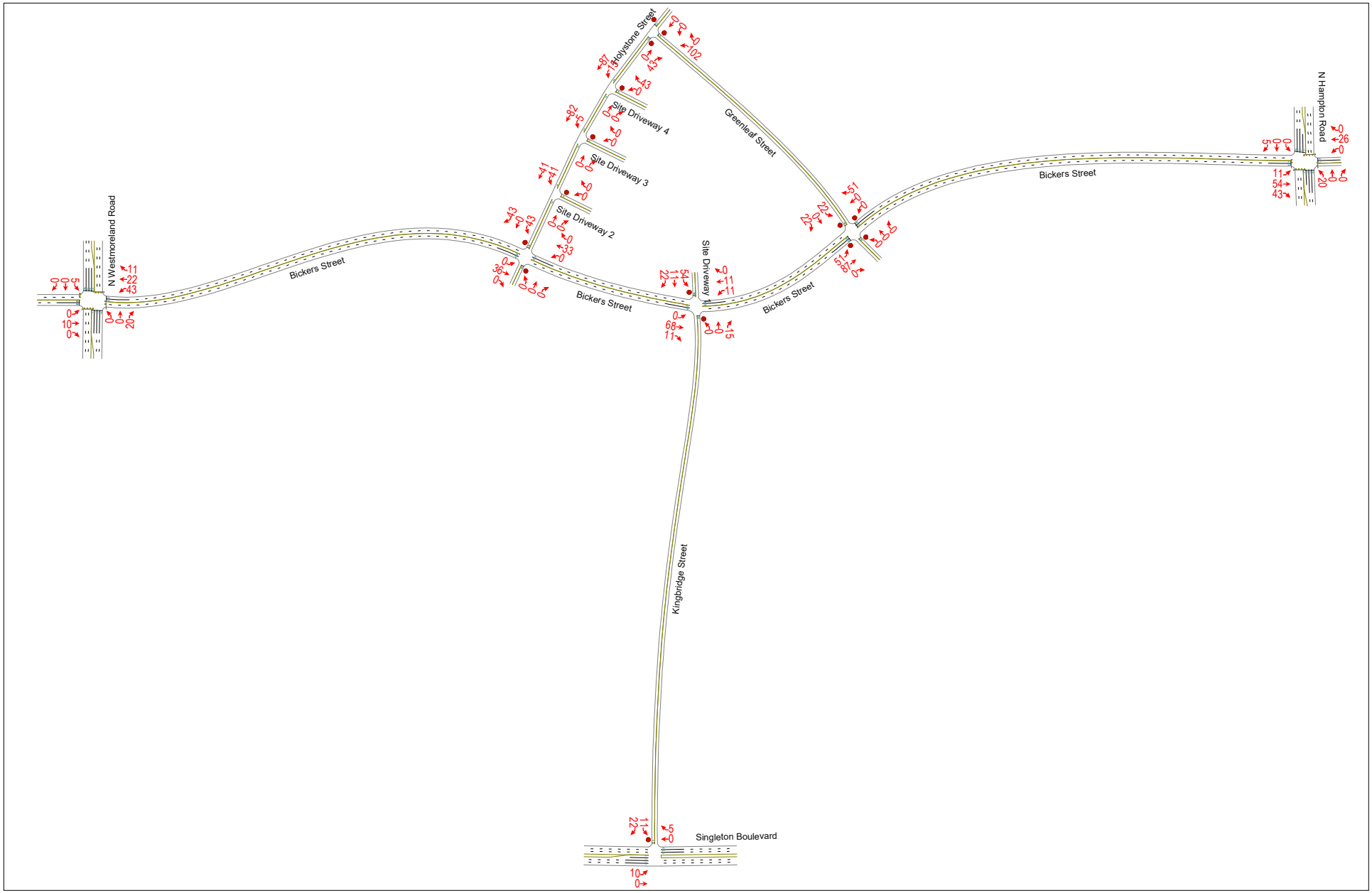
Appendix A7 - Site Generated PM Peak Hour Traffic Volumes

North ^

Not to Scale



2067-18.149

HWL

09/11/2018

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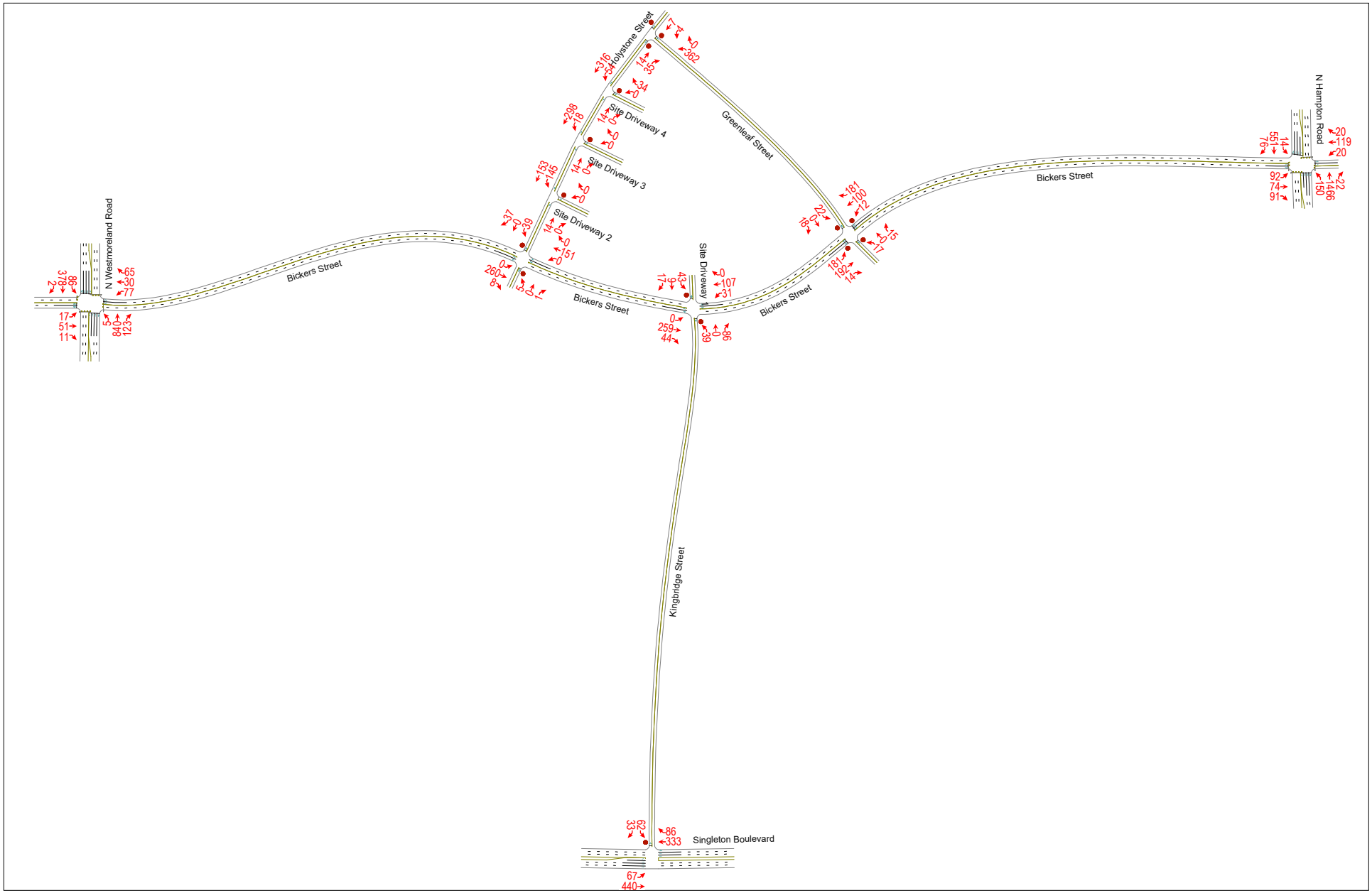
Appendix A8 - Background Plus Site Generated AM Peak Hour Traffic Volumes

North ^

Not to Scale



2067-18.149

HWL

09/11/2018

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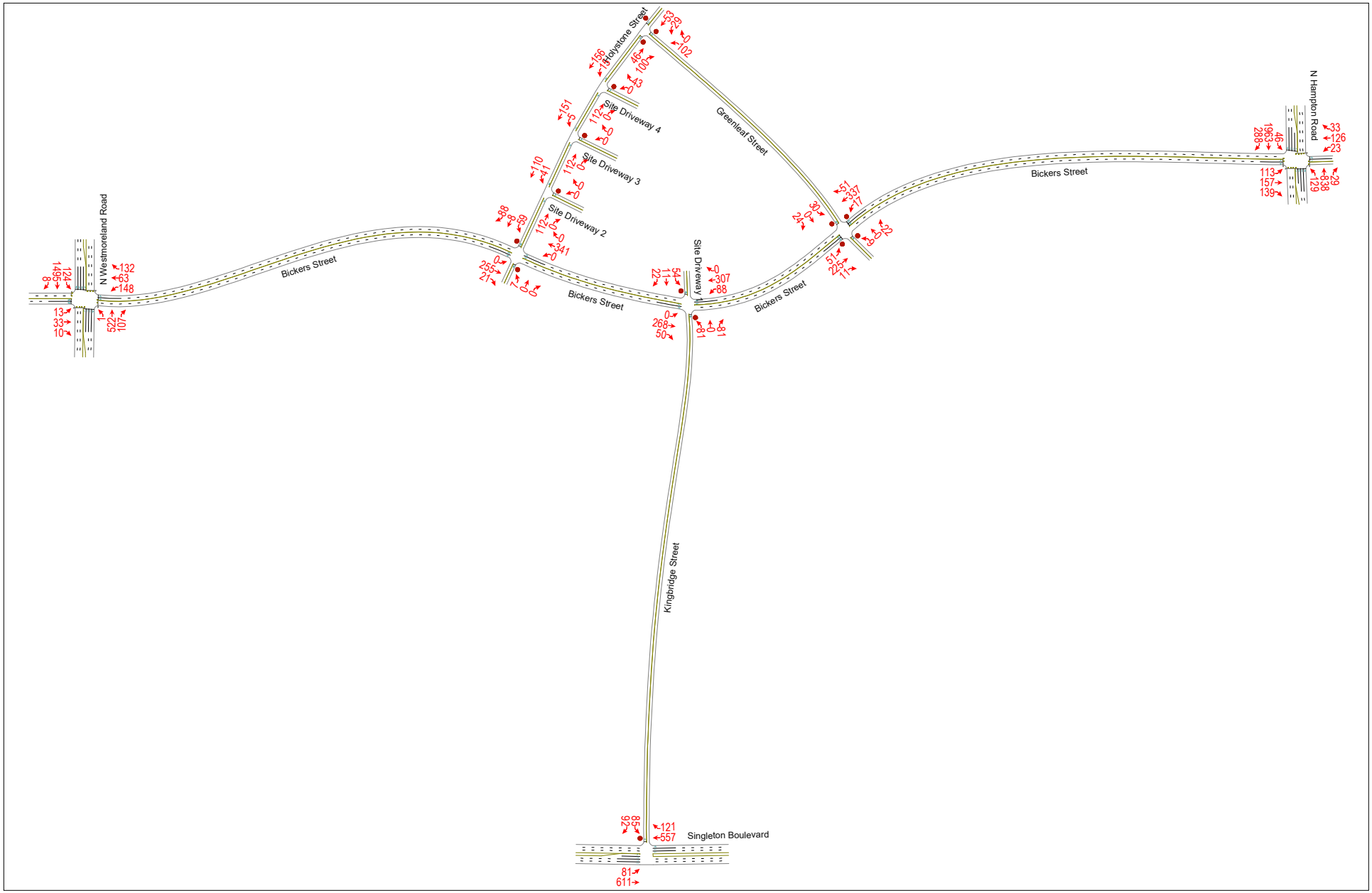
Appendix A9 - Background Plus Site Generated PM Peak Hour Traffic Volumes

North ^

Not to Scale



2067-18.149

HWL

09/11/2018

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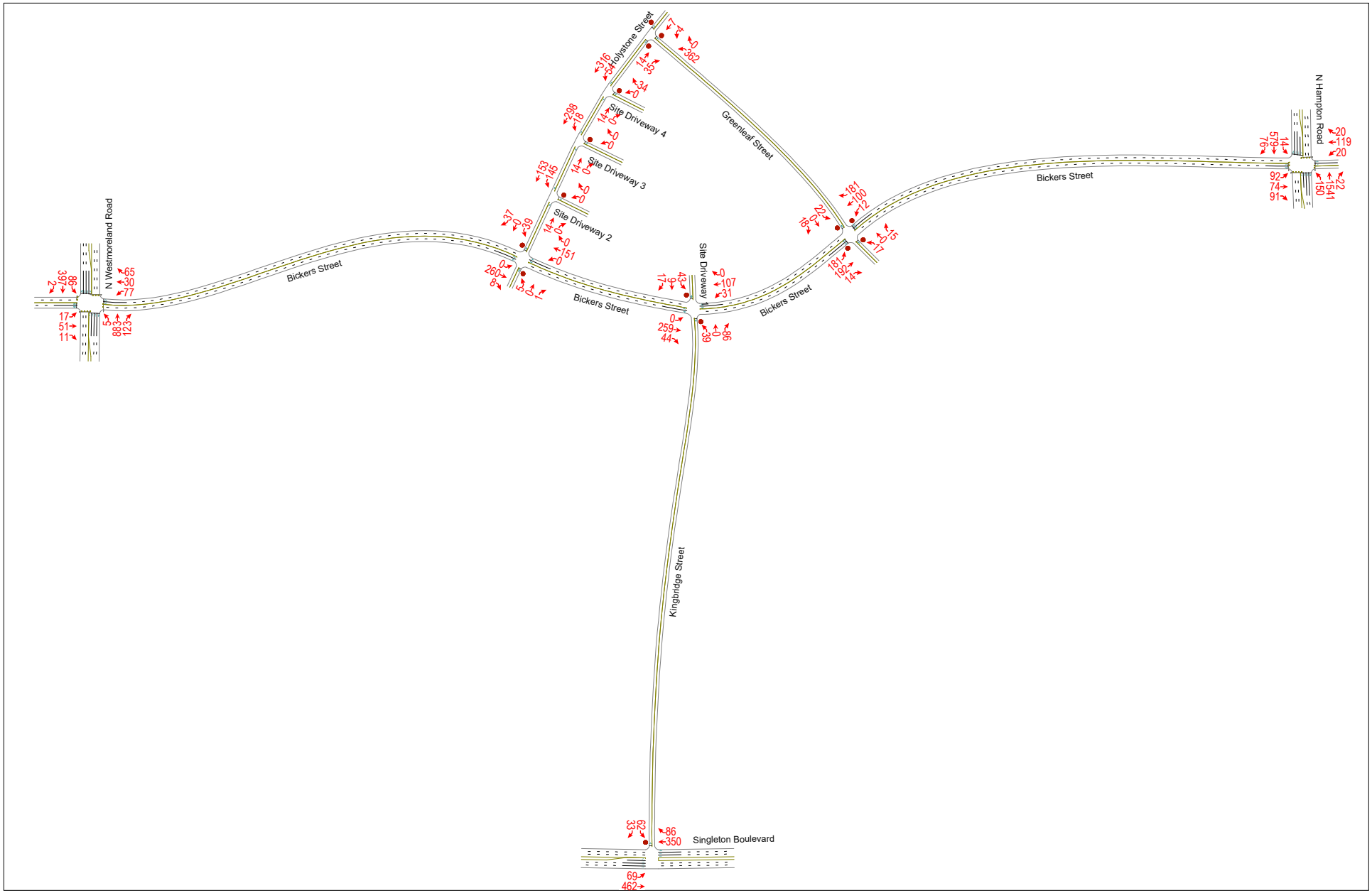
Appendix A10 - Horizon AM Peak Hour Traffic Volumes

North ^

Not to Scale



2067-18.149

HWL

09/11/2018

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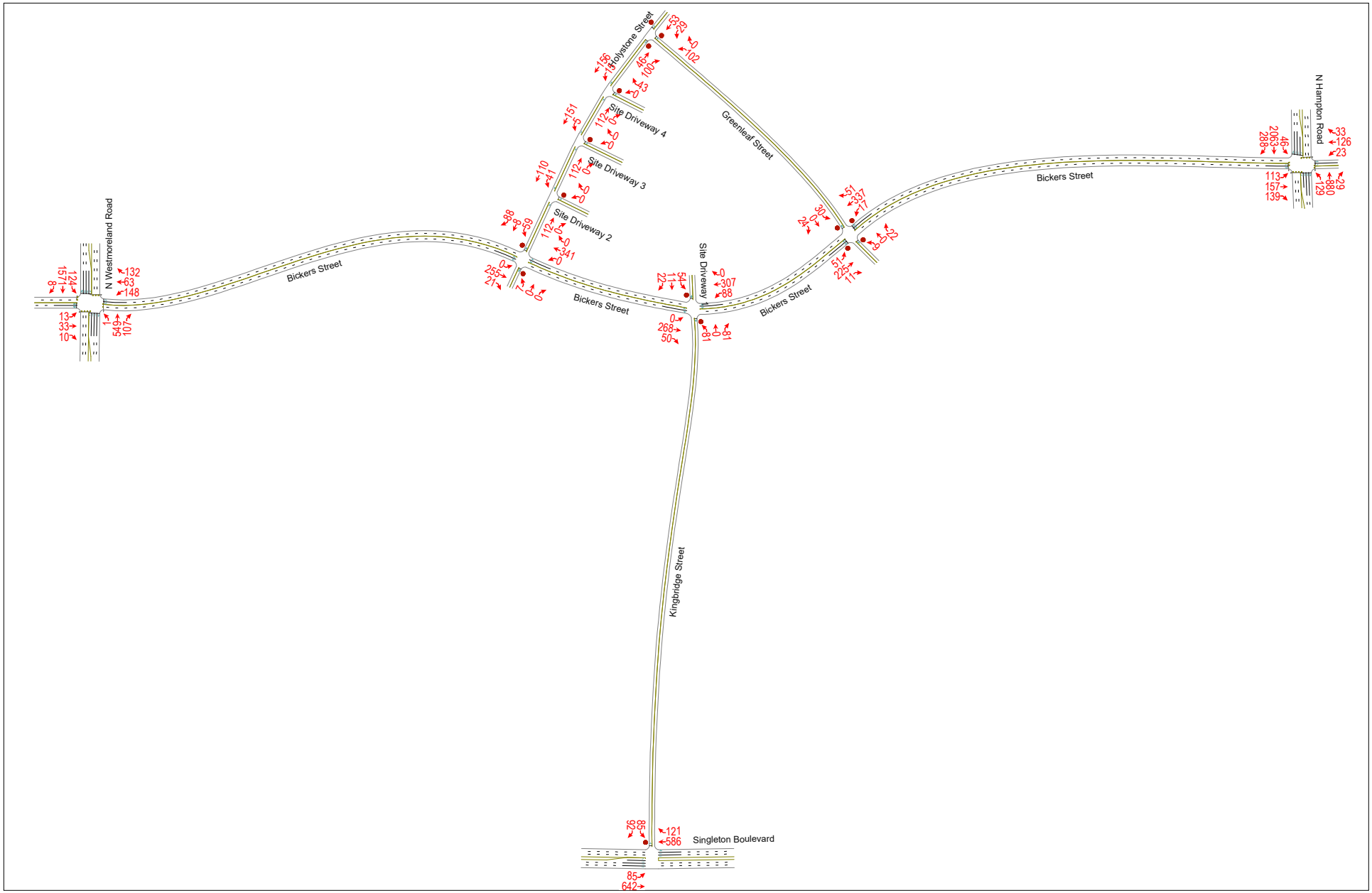
Appendix A11 - Horizon PM Peak Hour Traffic Volumes

North ^

Not to Scale



2067-18.149

HWL

09/11/2018

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Appendix B. Detailed Traffic Volume Data

Intersection Turning Movement Counts

				NORTH LEG						EAST LEG						SOUTH LEG						WEST LEG					
				Southbound Approach on N Westmoreland Road						Westbound Approach on Bickers Street						Northbound Approach on N Westmoreland Road						Eastbound Approach on Bickers Street					
				Vehicles				Peds		Vehicles				Peds		Vehicles				Peds		Vehicles				Peds	
		START	END	U	L	T	R	CCW	CW	U	L	T	R	CCW	CW	U	L	T	R	CCW	CW	U	L	T	R	CCW	CW
City:	Dallas	7:30 AM	7:45 AM		56	104	4				18	6	44				1	282	4				29	23	7		
State:	Texas	7:45 AM	8:00 AM		25	116	2				16	6	37				1	231	3				32	21	19		
Day:	Thursday	8:00 AM	8:15 AM		26	104	4				14	6	35				1	250	9				28	12	23		
Date:	April 19th	8:15 AM	8:30 AM		24	98	1				13	4	31				0	270	10				19	13	32		
Year:	2018	**8:30 AM**	**8:45 AM**		**19**	**94**	**0**				**9**	**2**	**16**				**1**	**299**	**16**				**7**	**4**	**6**		
Data Collector:	Camera	**8:45 AM**	**9:00 AM**		**12**	**83**	**2**				**13**	**3**	**12**				**3**	**197**	**6**				**4**	**4**	**1**		
Data Source:	CJ Hensch	**9:00 AM**	**9:15 AM**		**13**	**85**	**0**				**14**	**6**	**17**				**0**	**159**	**15**				**3**	**5**	**2**		
Traffic Control:	Traffic Signal	**9:15 AM**	**9:30 AM**		**24**	**105**	**0**				**7**	**2**	**11**				**1**	**160**	**14**				**3**	**2**	**2**		
Observations:																											
		3:00 PM	3:15 PM		28	227	2				19	2	20				1	88	15				4	4	0		
		3:15 PM	3:30 PM		29	209	3				19	2	15				0	115	24				2	3	0		
		3:30 PM	3:45 PM		38	301	4				12	4	29				0	110	17				5	6	5		
		3:45 PM	**4:00 PM**		**30**	**289**	**0**				**17**	**5**	**37**				**0**	**132**	**25**				**2**	**12**	**7**		
		4:00 PM	***4:15 PM***		***47***	***365***	***1***				***30***	***13***	***39***				***0***	***108***	***24***				***5***	***2***	***1***		
		4:15 PM	***4:30 PM***		***16***	***385***	***4***				***32***	***16***	***23***				***0***	***127***	***19***				***3***	***5***	***2***		
		4:30 PM	***4:45 PM***		***26***	***412***	***3***				***26***	***7***	***22***				***1***	***140***	***19***				***3***	***4***	***0***		
		4:45 PM	*5:00 PM*		*21*	*386*	*2*				*29*	*10*	*24*				*1*	*137*	*17*				*6*	*7*	*8*		
AM Peak Hour	*Intersection PHF:*	*0.91*	*Intersection PHV:*		*131*	*422*	*11*				*61*	*22*	*147*				*3*	*1,033*	*26*				*108*	*69*	*81*		
	Peak Hour	*7:30 AM - 8:30 AM*	*PHF:*		*0.58*	*0.91*	*0.69*				*0.85*	*0.92*	*0.84*				*0.75*	*0.92*	*0.65*				*0.84*	*0.75*	*0.63*		
	Study Area PHF:	0.77	Study Area PHV:		**68**	**367**	**2**				**43**	**13**	**56**				**5**	**815**	**51**				**17**	**15**	**11**		
	Peak Hour:	8:30 AM - 9:30 AM	PHF:		**0.71**	**0.87**	**0.25**				**0.77**	**0.54**	**0.82**				**0.42**	**0.68**	**0.80**				**0.61**	**0.75**	**0.46**		
PM Peak Hour	*Intersection PHF:*	*0.97*	*Intersection PHV:*		*110*	*1,548*	*10*				*117*	*46*	*108*				*2*	*512*	*79*				*17*	*18*	*11*		
	Peak Hour	*4:00 PM - 5:00 PM*	*PHF:*		*0.59*	*0.94*	*0.63*				*0.91*	*0.72*	*0.69*				*0.50*	*0.91*	*0.82*				*0.71*	*0.64*	*0.34*		
	Study Area PHF:	0.94	Study Area PHV:		**119**	**1,451**	**8**				**105**	**41**	**121**				**1**	**507**	**87**				**13**	**23**	**10**		
	Peak Hour:	3:45 PM - 4:45 PM	PHF:		**0.63**	**0.88**	**0.50**				**0.82**	**0.64**	**0.78**				**0.25**	**0.91**	**0.87**				**0.65**	**0.48**	**0.36**		

Pacheco Koch

PK# 2067-18.149

N Westmoreland Road at Bickers Street

Intersection Turning Movement Counts

				NORTH LEG						EAST LEG						SOUTH LEG						WEST LEG					
				Southbound Approach on N Hampton Road						Westbound Approach on Bickers Street						Northbound Approach on N Hampton Road						Eastbound Approach on Bickers Street					
				Vehicles				Peds		Vehicles				Peds		Vehicles				Peds		Vehicles				Peds	
		START	END	U	L	T	R	CCW	CW	U	L	T	R	CCW	CW	U	L	T	R	CCW	CW	U	L	T	R	CCW	CW
City:	Dallas	7:30 AM	7:45 AM		13	184	92				9	45	4				30	486	16				29	41	19		
State:	Texas	7:45 AM	8:00 AM		13	185	74				12	37	3				33	495	9				22	34	17		
Day:	Tuesday	8:00 AM	8:15 AM		3	151	24				10	18	7				21	435	6				16	29	25		
Date:	April 17th	8:15 AM	8:30 AM		1	116	10				1	7	5				22	448	5				16	7	22		
Year:	2018	**8:30 AM**	**8:45 AM**		**2**	**114**	**21**				**4**	**11**	**3**				**32**	**432**	**4**				**20**	**10**	**24**		
Data Collector:	Camera	**8:45 AM**	**9:00 AM**		**2**	**153**	**12**				**5**	**6**	**4**				**26**	**335**	**5**				**18**	**3**	**12**		
Data Source:	CJ Hensch	**9:00 AM**	**9:15 AM**		**5**	**135**	**15**				**5**	**8**	**5**				**10**	**322**	**3**				**24**	**13**	**12**		
Traffic Control:	Traffic Signal	**9:15 AM**	**9:30 AM**		**5**	**133**	**10**				**6**	**3**	**8**				**10**	**334**	**10**				**21**	**5**	**9**		
Observations:																											
		3:00 PM	3:15 PM		8	322	22				4	11	3				34	200	6				27	11	19		
		3:15 PM	3:30 PM		10	364	28				2	28	6				33	194	4				21	11	22		
		3:30 PM	3:45 PM		10	405	50				5	17	11				31	200	11				23	22	32		
		3:45 PM	**4:00 PM**		**9**	**409**	**101**				**4**	**33**	**8**				**35**	**200**	**11**				**25**	**23**	**21**		
		4:00 PM	***4:15 PM***		***15***	***469***	***87***				***14***	***35***	***9***				***30***	***200***	***4***				***23***	***24***	***25***		
		4:15 PM	***4:30 PM***		***8***	***508***	***60***				***4***	***15***	***8***				***18***	***196***	***4***				***28***	***34***	***33***		
		4:30 PM	***4:45 PM***		***14***	***519***	***35***				***1***	***17***	***8***				***26***	***217***	***10***				***26***	***22***	***17***		
		4:45 PM	*5:00 PM*		*10*	*534*	*42*				*6*	*16*	*8*				*21*	*198*	*10*				*31*	*16*	*21*		
AM Peak Hour	*Intersection PHF:*	*0.85*	*Intersection PHV:*		*30*	*636*	*200*				*32*	*107*	*19*				*106*	*1,864*	*36*				*83*	*111*	*83*		
	Peak Hour	*7:30 AM - 8:30 AM*	*PHF:*		*0.58*	*0.86*	*0.54*				*0.67*	*0.59*	*0.68*				*0.80*	*0.94*	*0.56*				*0.72*	*0.68*	*0.83*		
	Study Area PHF:	0.87	Study Area PHV:		**14**	**535**	**58**				**20**	**28**	**20**				**78**	**1,423**	**22**				**83**	**31**	**57**		
	Peak Hour:	8:30 AM - 9:30 AM	PHF:		**0.70**	**0.87**	**0.69**				**0.83**	**0.64**	**0.63**				**0.61**	**0.82**	**0.55**				**0.86**	**0.60**	**0.59**		
PM Peak Hour	*Intersection PHF:*	*0.98*	*Intersection PHV:*		*47*	*2,030*	*224*				*25*	*83*	*33*				*95*	*811*	*28*				*108*	*96*	*96*		
	Peak Hour	*4:00 PM - 5:00 PM*	*PHF:*		*0.78*	*0.95*	*0.64*				*0.45*	*0.59*	*0.92*				*0.79*	*0.93*	*0.70*				*0.87*	*0.71*	*0.73*		
	Study Area PHF:	0.97	Study Area PHV:		**46**	**1,905**	**283**				**23**	**100**	**33**				**109**	**813**	**29**				**102**	**103**	**96**		
	Peak Hour:	3:45 PM - 4:45 PM	PHF:		**0.77**	**0.92**	**0.70**				**0.41**	**0.71**	**0.92**				**0.78**	**0.94**	**0.66**				**0.91**	**0.76**	**0.73**		

Intersection Turning Movement Counts

				NORTH LEG						EAST LEG						SOUTH LEG						WEST LEG					
				Southbound Approach on Holystone Street						Westbound Approach on Bickers Street						Northbound Approach on Holystone Street						Eastbound Approach on Bickers Street					
				Vehicles				Peds		Vehicles				Peds		Vehicles				Peds		Vehicles				Peds	
		START	END	U	L	T	R	CCW	CW	U	L	T	R	CCW	CW	U	L	T	R	CCW	CW	U	L	T	R	CCW	CW
City:	*Dallas*	*7:30 AM*	*7:45 AM*		*0*	*0*	*5*				*0*	*69*	*23*				*5*	*3*	*0*				*18*	*81*	*5*		
State:	*Texas*	*7:45 AM*	*8:00 AM*		*0*	*1*	*4*				*0*	*78*	*22*				*3*	*2*	*0*				*11*	*50*	*1*		
Day:	*Tuesday*	*8:00 AM*	*8:15 AM*		*4*	*3*	*5*				*0*	*79*	*13*				*3*	*4*	*0*				*8*	*45*	*4*		
Date:	*April 17th*	*8:15 AM*	*8:30 AM*		*0*	*1*	*2*				*1*	*53*	*15*				*1*	*5*	*0*				*2*	*31*	*5*		
Year:	*2018*	**8:30 AM**	**8:45 AM**		**1**	**0**	**2**				**0**	**39**	**5**				**1**	**0**	**1**				**1**	**35**	**2**		
Data Collector:	*Camera*	**8:45 AM**	**9:00 AM**		**1**	**0**	**0**				**0**	**30**	**4**				**1**	**0**	**0**				**0**	**29**	**4**		
Data Source:	*CJ Hensch*	**9:00 AM**	**9:15 AM**		**0**	**0**	**0**				**0**	**32**	**2**				**1**	**0**	**0**				**0**	**38**	**1**		
Traffic Control:	*Minor Approach Stop*	**9:15 AM**	**9:30 AM**		**3**	**0**	**1**				**0**	**24**	**2**				**2**	**0**	**0**				**0**	**31**	**1**		
Observations:																											
		3:00 PM	3:15 PM		0	0	1				1	39	1				2	0	0				0	55	4		
		3:15 PM	3:30 PM		1	1	0				0	41	2				3	0	0				1	46	2		
		3:30 PM	3:45 PM		0	1	0				0	58	7				3	0	0				2	56	4		
		3:45 PM	***4:00 PM***		***0***	***0***	***1***				***0***	***74***	***25***				***2***	***0***	***0***				***14***	***65***	***4***		
		4:00 PM	***4:15 PM***		***8***	***1***	***18***				***0***	***94***	***36***				***1***	***0***	***0***				***15***	***54***	***3***		
		4:15 PM	***4:30 PM***		***5***	***5***	***16***				***0***	***69***	***9***				***0***	***0***	***0***				***5***	***54***	***6***		
		4:30 PM	***4:45 PM***		***3***	***2***	***10***				***0***	***71***	***2***				***4***	***3***	***0***				***3***	***46***	***8***		
		4:45 PM	5:00 PM		0	2	3				1	58	2				3	0	1				1	56	7		
AM Peak Hour	*Intersection PHF:*	*0.80*	*Intersection PHV:*		*4*	*5*	*16*				*1*	*279*	*73*				*12*	*14*	*0*				*39*	*207*	*15*		
	Peak Hour	*7:30 AM - 8:30 AM*	*PHF:*		*0.25*	*0.42*	*0.80*				*0.25*	*0.88*	*0.79*				*0.60*	*0.70*	*0.00*				*0.54*	*0.64*	*0.75*		
	Study Area PHF:	0.84	Study Area PHV:		**5**	**0**	**3**				**0**	**125**	**13**				**5**	**0**	**1**				**1**	**133**	**8**		
	Peak Hour:	8:30 AM - 9:30 AM	PHF:		**0.42**	**0.00**	**0.38**				**0.00**	**0.80**	**0.65**				**0.63**	**0.00**	**0.25**				**0.25**	**0.88**	**0.50**		
PM Peak Hour	*Intersection PHF:*	*0.80*	*Intersection PHV:*		*16*	*8*	*45*				*0*	*308*	*72*				*7*	*3*	*0*				*37*	*219*	*21*		
	Peak Hour	*3:45 PM - 4:45 PM*	*PHF:*		*0.50*	*0.40*	*0.63*				*0.00*	*0.82*	*0.50*				*0.44*	*0.25*	*0.00*				*0.62*	*0.84*	*0.66*		
	Study Area PHF:	0.80	Study Area PHV:		**16**	**8**	**45**				**0**	**308**	**72**				**7**	**3**	**0**				**37**	**219**	**21**		
	Peak Hour:	3:45 PM - 4:45 PM	PHF:		**0.50**	**0.40**	**0.63**				**0.00**	**0.82**	**0.50**				**0.44**	**0.25**	**0.00**				**0.62**	**0.84**	**0.66**		

Pacheco Koch

PK# 2067-18.149

Holystone Street at Bickers Street

Intersection Turning Movement Counts

										EAST LEG						**SOUTH LEG**						**WEST LEG**					
										Westbound Approach on Bickers Street						Northbound Approach on Kingbridge Street						Eastbound Approach on Bickers Street					
										Vehicles				Peds		Vehicles				Peds		Vehicles				Peds	
		START	**END**							U	L	T	R	CCW	CW	U	L	T	R	CCW	CW	U	L	T	R	CCW	CW
City:	***Dallas***	*7:30 AM*	*7:45 AM*								*14*	*66*	-				*30*	-	*40*				-	*75*	*9*		
State:	***Texas***	*7:45 AM*	*8:00 AM*								*26*	*62*	-				*34*	-	*43*				-	*41*	*9*		
Day:	***Tuesday***	*8:00 AM*	*8:15 AM*								*14*	*42*	-				*50*	-	*26*				-	*42*	*9*		
Date:	***April 17th***	*8:15 AM*	*8:30 AM*								*14*	*34*	-				*35*	-	*14*				-	*25*	*4*		
Year:	***2018***	**8:30 AM**	**8:45 AM**								**4**	**29**	**-**				**15**	**-**	**11**				**-**	**33**	**6**		
Data Collector:	***Camera***	**8:45 AM**	**9:00 AM**								**9**	**26**	**-**				**9**	**-**	**6**				**-**	**22**	**8**		
Data Source:	***CJ Hensch***	**9:00 AM**	**9:15 AM**								**5**	**24**	**-**				**9**	**-**	**8**				**-**	**30**	**10**		
Traffic Control:	***Minor Approach Stop***	**9:15 AM**	**9:30 AM**								**4**	**19**	**-**				**6**	**-**	**7**				**-**	**22**	**11**		
Observations:																											
		3:00 PM	3:15 PM								6	23	-				15	-	12				-	48	7		
		3:15 PM	3:30 PM								8	39	-				5	-	10				-	39	7		
		3:30 PM	*3:45 PM*								*9*	*51*	-				*12*	-	*15*				-	*57*	*9*		
		3:45 PM	***4:00 PM***								***13***	***86***	**-**				***16***	**-**	***20***				**-**	***60***	***9***		
		4:00 PM	***4:15 PM***								***27***	***104***	**-**				***20***	**-**	***19***				**-**	***50***	***10***		
		4:15 PM	***4:30 PM***								***22***	***61***	**-**				***17***	**-**	***11***				**-**	***56***	***7***		
		4:30 PM	**4:45 PM**								**15**	**45**	**-**				**28**	**-**	**16**				**-**	**34**	**13**		
		4:45 PM	5:00 PM								17	47	-				13	-	22				-	47	11		
AM Peak Hour	*Intersection PHF:*	*0.81*		*Intersection PHV:*							*68*	*204*	*0*				*149*	*0*	*123*				*0*	*183*	*31*		
	Peak Hour	*7:30 AM - 8:30 AM*		*PHF:*							*0.65*	*0.77*	*0.00*				*0.75*	*0.00*	*0.72*				*0.00*	*0.61*	*0.86*		
	Study Area PHF:	0.85		Study Area PHV:							**22**	**98**	**0**				**39**	**0**	**32**				**0**	**107**	**35**		
	Peak Hour:	8:30 AM - 9:30 AM		PHF:							**0.61**	**0.84**	**0.00**				**0.65**	**0.00**	**0.73**				**0.00**	**0.81**	**0.80**		
PM Peak Hour	*Intersection PHF:*	*0.83*		*Intersection PHV:*							*71*	*302*	*0*				*65*	*0*	*65*				*0*	*223*	*35*		
	Peak Hour	*3:30 PM - 4:30 PM*		*PHF:*							*0.66*	*0.73*	*0.00*				*0.81*	*0.00*	*0.81*				*0.00*	*0.93*	*0.88*		
	Study Area PHF:	0.83		Study Area PHV:							**77**	**296**	**0**				**81**	**0**	**66**				**0**	**200**	**39**		
	Peak Hour:	3:45 PM - 4:45 PM		PHF:							**0.71**	**0.71**	**0.00**				**0.72**	**0.00**	**0.83**				**0.00**	**0.83**	**0.75**		

Kingbridge Street at Bickers Street

Intersection Turning Movement Counts

				NORTH LEG						EAST LEG						SOUTH LEG						WEST LEG					
				Southbound Approach on Greenleaf Street						Westbound Approach on Bickers Street						Northbound Approach on Greenleaf Street						Eastbound Approach on Bickers Street					
				Vehicles				Peds		Vehicles				Peds		Vehicles				Peds		Vehicles				Peds	
		START	END	U	L	T	R	CCW	CW	U	L	T	R	CCW	CW	U	L	T	R	CCW	CW	U	L	T	R	CCW	CW
City:	*Dallas*	*7:30 AM*	*7:45 AM*		*26*	*0*	*4*				*2*	*78*	-				*1*	-	*3*				-	*116*	*3*		
State:	*Texas*	*7:45 AM*	*8:00 AM*		*15*	*0*	*5*				*4*	*79*	-				*2*	-	*2*				-	*83*	*1*		
Day:	*Tuesday*	*8:00 AM*	*8:15 AM*		*13*	*0*	*2*				*2*	*56*	-				*1*	-	*3*				-	*65*	*4*		
Date:	*April 17th*	*8:15 AM*	*8:30 AM*		*3*	*0*	*1*				*3*	*45*	-				*2*	-	*4*				-	*35*	*4*		
Year:	*2018*	**8:30 AM**	**8:45 AM**		**2**	**0**	**1**				**1**	**31**	**-**				**0**	**-**	**6**				**-**	**43**	**0**		
Data Collector:	*Camera*	**8:45 AM**	**9:00 AM**		**0**	**0**	**0**				**3**	**29**	**-**				**5**	**-**	**4**				**-**	**27**	**1**		
Data Source:	*CJ Hensch*	**9:00 AM**	**9:15 AM**		**3**	**0**	**0**				**4**	**22**	**-**				**8**	**-**	**3**				**-**	**33**	**6**		
Traffic Control:	*All-Way Stop*	**9:15 AM**	**9:30 AM**		**0**	**0**	**0**				**4**	**18**	**-**				**4**	**-**	**2**				**-**	**21**	**7**		
Observations:																											
		3:00 PM	*3:15 PM*		*26*	*0*	*4*				*8*	*26*	-				*2*	-	*10*				-	*116*	*3*		
		3:15 PM	*3:30 PM*		*15*	*0*	*5*				*10*	*44*	-				*3*	-	*11*				-	*83*	*1*		
		3:30 PM	*3:45 PM*		*13*	*0*	*2*				*3*	*63*	-				*2*	-	*6*				-	*65*	*4*		
		3:45 PM	***4:00 PM***		***3***	***0***	***1***				***5***	***94***	**-**				***1***	**-**	***2***				**-**	***35***	***4***		
		4:00 PM	**4:15 PM**		**2**	**0**	**1**				**5**	**116**	**-**				**3**	**-**	**8**				**-**	**43**	**0**		
		4:15 PM	**4:30 PM**		**0**	**0**	**0**				**0**	**70**	**-**				**3**	**-**	**4**				**-**	**27**	**1**		
		4:30 PM	**4:45 PM**		**3**	**0**	**0**				**7**	**57**	**-**				**2**	**-**	**8**				**-**	**33**	**6**		
		4:45 PM	5:00 PM		0	0	0				4	62	-				2	-	5				-	21	7		
AM Peak Hour	*Intersection PHF:*	*0.72*	*Intersection PHV:*		*57*	*0*	*12*				*11*	*258*	*0*				*6*	*0*	*12*				*0*	*299*	*12*		
	Peak Hour	*7:30 AM - 8:30 AM*	*PHF:*		*0.55*	*0.00*	*0.60*				*0.69*	*0.82*	*0.00*				*0.75*	*0.00*	*0.75*				*0.00*	*0.64*	*0.75*		
	Study Area PHF:	0.86	Study Area PHV:		**5**	**0**	**1**				**12**	**100**	**0**				**17**	**0**	**15**				**0**	**124**	**14**		
	Peak Hour:	8:30 AM - 9:30 AM	PHF:		**0.42**	**0.00**	**0.25**				**0.75**	**0.81**	**0.00**				**0.53**	**0.00**	**0.63**				**0.00**	**0.72**	**0.50**		
PM Peak Hour	*Intersection PHF:*	*0.86*	*Intersection PHV:*		*57*	*0*	*12*				*26*	*227*	*0*				*8*	*0*	*29*				*0*	*299*	*12*		
	Peak Hour	*3:00 PM - 4:00 PM*	*PHF:*		*0.55*	*0.00*	*0.60*				*0.65*	*0.60*	*0.00*				*0.67*	*0.00*	*0.66*				*0.00*	*0.64*	*0.75*		
	Study Area PHF:	0.76	Study Area PHV:		**8**	**0**	**2**				**17**	**337**	**0**				**9**	**0**	**22**				**0**	**138**	**11**		
	Peak Hour:	3:45 PM - 4:45 PM	PHF:		**0.67**	**0.00**	**0.50**				**0.61**	**0.73**	**0.00**				**0.75**	**0.00**	**0.69**				**0.00**	**0.80**	**0.46**		

Pacheco Koch

PK# 2067-18.149

Greenleaf Street at Bickers Street

Intersection Turning Movement Counts

				NORTH LEG						EAST LEG												WEST LEG					
				Southbound Approach on Kingbridge Street						Westbound Approach on Singleton Boulevard												Eastbound Approach on Singleton Boulevard					
				Vehicles				Peds		Vehicles				Peds								Vehicles				Peds	
		START	END	U	L	T	R	CCW	CW	U	L	T	R	CCW	CW							U	L	T	R	CCW	CW
City:	*Dallas*	*7:30 AM*	*7:45 AM*		*16*	*-*	*19*				*-*	*127*	*46*										*39*	*170*	*-*		
State:	*Texas*	*7:45 AM*	*8:00 AM*		*12*	*-*	*28*				*-*	*128*	*40*										*44*	*156*	*-*		
Day:	*Tuesday*	*8:00 AM*	*8:15 AM*		*14*	*-*	*18*				*-*	*120*	*51*										*35*	*149*	*-*		
Date:	*April 17th*	*8:15 AM*	*8:30 AM*		*10*	*-*	*17*				*-*	*107*	*27*										*22*	*141*	*-*		
Year:	*2018*	**8:30 AM**	**8:45 AM**		**11**	**-**	**5**				**-**	**72**	**22**										**12**	**104**	**-**		
Data Collector:	*Camera*	**8:45 AM**	**9:00 AM**		**16**	**-**	**4**				**-**	**82**	**18**										**8**	**146**	**-**		
Data Source:	*CJ Hensch*	**9:00 AM**	**9:15 AM**		**10**	**-**	**3**				**-**	**100**	**16**										**5**	**108**	**-**		
Traffic Control:	*Minor Approach Stop*	**9:15 AM**	**9:30 AM**		**16**	**-**	**4**				**-**	**69**	**12**										**5**	**69**	**-**		
Observations:																											
		3:00 PM	3:15 PM		16	-	3				-	85	18										11	96	-		
		3:15 PM	3:30 PM		16	-	9				-	89	10										5	95	-		
		3:30 PM	3:45 PM		11	-	8				-	98	17										12	98	-		
		3:45 PM	**4:00 PM**		**16**	**-**	**12**				**-**	**97**	**27**										**11**	**100**	**-**		
		4:00 PM	***4:15 PM***		***15***	***-***	***20***				***-***	***105***	***38***										***14***	***145***	***-***		
		4:15 PM	***4:30 PM***		***23***	***-***	***19***				***-***	***178***	***27***										***19***	***154***	***-***		
		4:30 PM	***4:45 PM***		***20***	***-***	***19***				***-***	***161***	***24***										***25***	***194***	***-***		
		4:45 PM	*5:00 PM*		*22*	*-*	*11*				*-*	*138*	*22*										*14*	*156*	*-*		
AM Peak Hour	*Intersection PHF:*	*0.92*		*Intersection PHV:*	*52*	*0*	*82*				*0*	*482*	*164*										*140*	*616*	*0*		
	Peak Hour	*7:30 AM - 8:30 AM*		*PHF:*	*0.81*	*0.00*	*0.73*				*0.00*	*0.94*	*0.80*										*0.80*	*0.91*	*0.00*		
	Study Area PHF:	0.84		Study Area PHV:	**53**	**0**	**16**				**0**	**323**	**68**										**30**	**427**	**0**		
	Peak Hour:	8:30 AM - 9:30 AM		PHF:	**0.83**	**0.00**	**0.80**				**0.00**	**0.81**	**0.77**										**0.63**	**0.73**	**0.00**		
PM Peak Hour	*Intersection PHF:*	*0.88*		*Intersection PHV:*	*80*	*0*	*69*				*0*	*582*	*111*										*72*	*649*	*0*		
	Peak Hour	*4:00 PM - 5:00 PM*		*PHF:*	*0.87*	*0.00*	*0.86*				*0.00*	*0.82*	*0.73*										*0.72*	*0.84*	*0.00*		
	Study Area PHF:	0.83		Study Area PHV:	**74**	**0**	**70**				**0**	**541**	**116**										**69**	**593**	**0**		
	Peak Hour:	3:45 PM - 4:45 PM		PHF:	**0.80**	**0.00**	**0.88**				**0.00**	**0.76**	**0.76**										**0.69**	**0.76**	**0.00**		

Pacheco Koch

PK# 2067-18.149

Kingbridge Street at Singleton Boulevard

Intersection Turning Movement Counts

				NORTH LEG						EAST LEG						SOUTH LEG											
				Southbound Approach on Holystone Street						Westbound Approach on Greenleaf Street						Northbound Approach on Holystone Street											
				Vehicles				Peds		Vehicles				Peds		Vehicles				Peds							
		START	END	U	L	T	R	CCW	CW	U	L	T	R	CCW	CW	U	L	T	R	CCW	CW						
City:	*Dallas*	*7:30 AM*	*7:45 AM*		*0*	*1*	*-*				*0*	*-*	*0*				*-*	*15*	*30*								
State:	*Texas*	*7:45 AM*	*8:00 AM*		*2*	*2*	*-*				*0*	*-*	*0*				*-*	*7*	*22*								
Day:	*Tuesday*	*8:00 AM*	*8:15 AM*		*9*	*11*	*-*				*0*	*-*	*1*				*-*	*26*	*2*								
Date:	*April 17th*	*8:15 AM*	*8:30 AM*		*2*	*3*	*-*				*0*	*-*	*0*				*-*	*19*	*2*								
Year:	*2018*	**8:30 AM**	**8:45 AM**		**2**	**2**	**-**				**0**	**-**	**0**				**-**	**6**	**1**								
Data Collector:	*Camera*	**8:45 AM**	**9:00 AM**		**0**	**1**	**-**				**0**	**-**	**1**				**-**	**4**	**0**								
Data Source:	*CJ Hensch*	**9:00 AM**	**9:15 AM**		**2**	**0**	**-**				**0**	**-**	**1**				**-**	**2**	**0**								
Traffic Control:	*All-Way Stop*	**9:15 AM**	**9:30 AM**		**0**	**4**	**-**				**0**	**-**	**0**				**-**	**2**	**0**								
Observations:																											
		3:00 PM	3:15 PM		2	1	-				0	-	0				-	1	0								
		3:15 PM	3:30 PM		0	1	-				1	-	0				-	2	1								
		3:30 PM	3:45 PM		0	1	-				0	-	0				-	2	5								
		3:45 PM	***4:00 PM***		***0***	***2***	***-***				***0***	***-***	***0***				***-***	***10***	***11***								
		4:00 PM	***4:15 PM***		***16***	***17***	***-***				***0***	***-***	***0***				***-***	***18***	***40***								
		4:15 PM	***4:30 PM***		***3***	***20***	***-***				***1***	***-***	***0***				***-***	***10***	***6***								
		4:30 PM	***4:45 PM***		***10***	***14***	***-***				***1***	***-***	***2***				***-***	***8***	***0***								
		4:45 PM	5:00 PM		7	6	-				0	-	1				-	3	0								

AM Peak Hour	*Intersection PHF:*	*0.79*	*Intersection PHV:*		*13*	*17*	*0*				*0*	*0*	*1*				*0*	*67*	*56*								
	Peak Hour	*7:30 AM - 8:30 AM*	*PHF:*		*0.36*	*0.39*	*0.00*				*0.00*	*0.00*	*0.25*				*0.00*	*0.64*	*0.47*								
	Study Area PHF:	0.64	Study Area PHV:		**4**	**7**	**0**				**0**	**0**	**2**				**0**	**14**	**1**								
	Peak Hour:	8:30 AM - 9:30 AM	PHF:		**0.50**	**0.44**	**0.00**				**0.00**	**0.00**	**0.50**				**0.00**	**0.58**	**0.25**								
PM Peak Hour	*Intersection PHF:*	*0.52*	*Intersection PHV:*		*29*	*53*	*0*				*2*	*0*	*2*				*0*	*46*	*57*								
	Peak Hour	*3:45 PM - 4:45 PM*	*PHF:*		*0.45*	*0.66*	*0.00*				*0.50*	*0.00*	*0.25*				*0.00*	*0.64*	*0.36*								
	Study Area PHF:	0.52	Study Area PHV:		**29**	**53**	**0**				**2**	**0**	**2**				**0**	**46**	**57**								
	Peak Hour:	3:45 PM - 4:45 PM	PHF:		**0.45**	**0.66**	**0.00**				**0.50**	**0.00**	**0.25**				**0.00**	**0.64**	**0.36**								

ROADWAY: Bickers Street
LOCATION: Between Holystone and Kingbridge Street
DAY: Tuesday
DATE: April 17th
YEAR: 2018
SOURCE: CJ Hensch

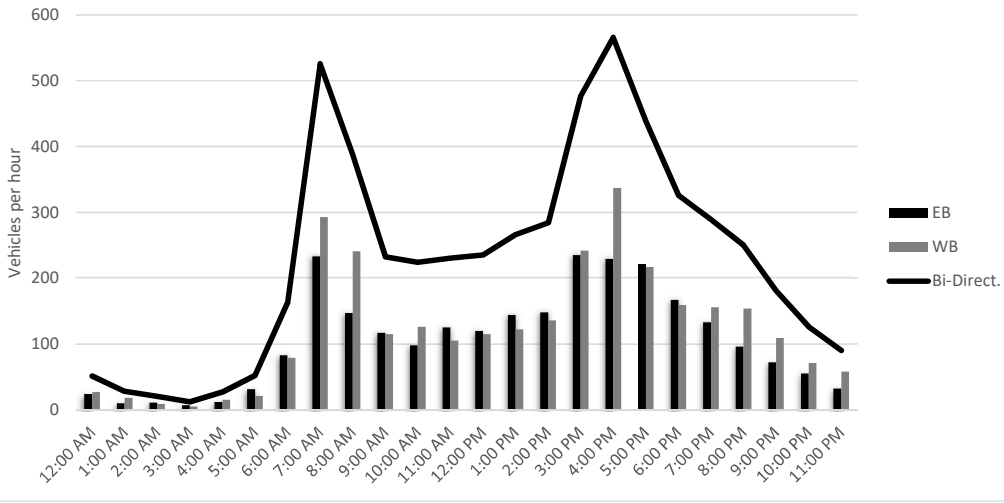
24-HOUR, BI-DIRECTIONAL VOLUME
5,481
(WEEKDAY)

Bickers Street

	Eastbound				Westbound				Totals		
START TIME	0:00	0:15	0:30	0:45	0:00	0:15	0:30	0:45	EB	WB	Bi-Direct.
12:00 AM	12	8	2	2	10	7	8	2	24	27	51
1:00 AM	7	2	1	0	8	3	4	3	10	18	28
2:00 AM	3	3	2	3	1	1	2	5	11	9	20
3:00 AM	1	2	3	1	1	0	2	2	7	5	12
4:00 AM	6	2	1	3	3	3	5	4	12	15	27
5:00 AM	3	8	7	13	2	7	5	7	31	21	52
6:00 AM	16	14	26	27	17	16	16	30	83	79	162
7:00 AM	36	66	80	51	39	63	92	99	233	293	526
8:00 AM	48	31	38	30	92	69	45	35	147	241	388
9:00 AM	40	34	20	23	36	26	17	36	117	115	232
10:00 AM	19	32	29	18	24	28	34	40	98	126	224
11:00 AM	30	28	35	32	22	26	25	32	125	105	230
12:00 PM	33	32	29	26	22	36	27	30	120	115	235
1:00 PM	40	26	32	46	38	26	28	30	144	122	266
2:00 PM	31	38	49	30	34	39	29	34	148	136	284
3:00 PM	54	49	64	68	39	44	62	97	235	242	477
4:00 PM	62	60	50	57	130	77	70	60	229	337	566
5:00 PM	66	52	52	52	54	53	57	53	222	217	439
6:00 PM	42	39	44	42	49	37	32	41	167	159	326
7:00 PM	31	34	35	33	39	50	40	27	133	156	289
8:00 PM	27	25	23	21	41	31	48	34	96	154	250
9:00 PM	18	22	17	15	23	30	28	28	72	109	181
10:00 PM	18	22	9	6	23	22	17	9	55	71	126
11:00 PM	10	8	8	6	19	13	12	14	32	58	90

			EB	WB	Bi-Direct.
		24-Hour Total:	2,551	2,930	5,481
7:15 AM	8:15 AM	(Bi-Direct.) AM Peak Hour Total:	245	346	591
3:30 PM	4:30 PM	(Bi-Direct.) PM Peak Hour Total:	254	366	620
3:30 PM	4:30 PM	Highest By Direction (EB):	254		
3:45 PM	4:45 PM	Highest By Direction (WB):		374	

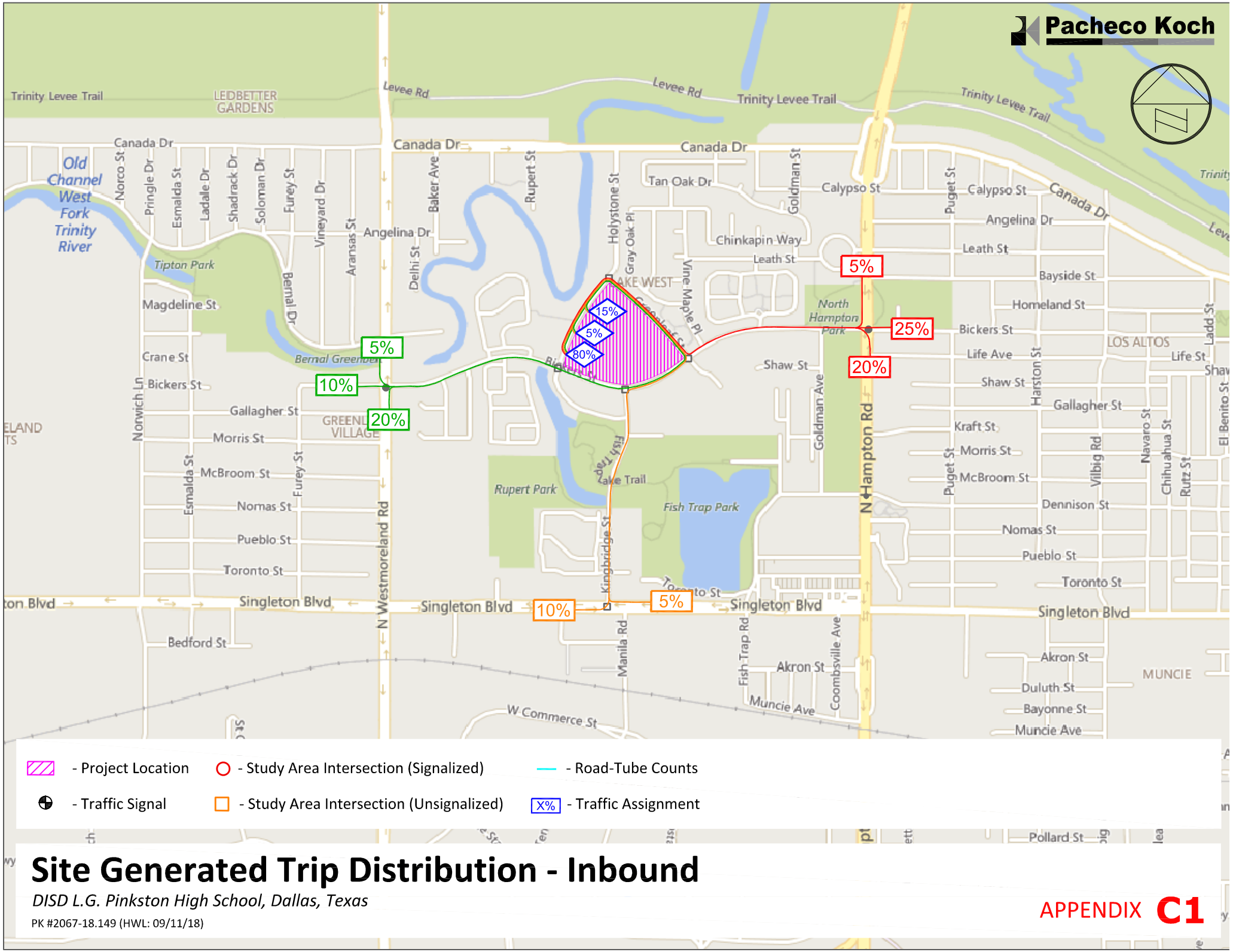
Graph



PK# 2067-18.149

Pacheco Koch

Appendix C. Site-Generated Traffic Supplement

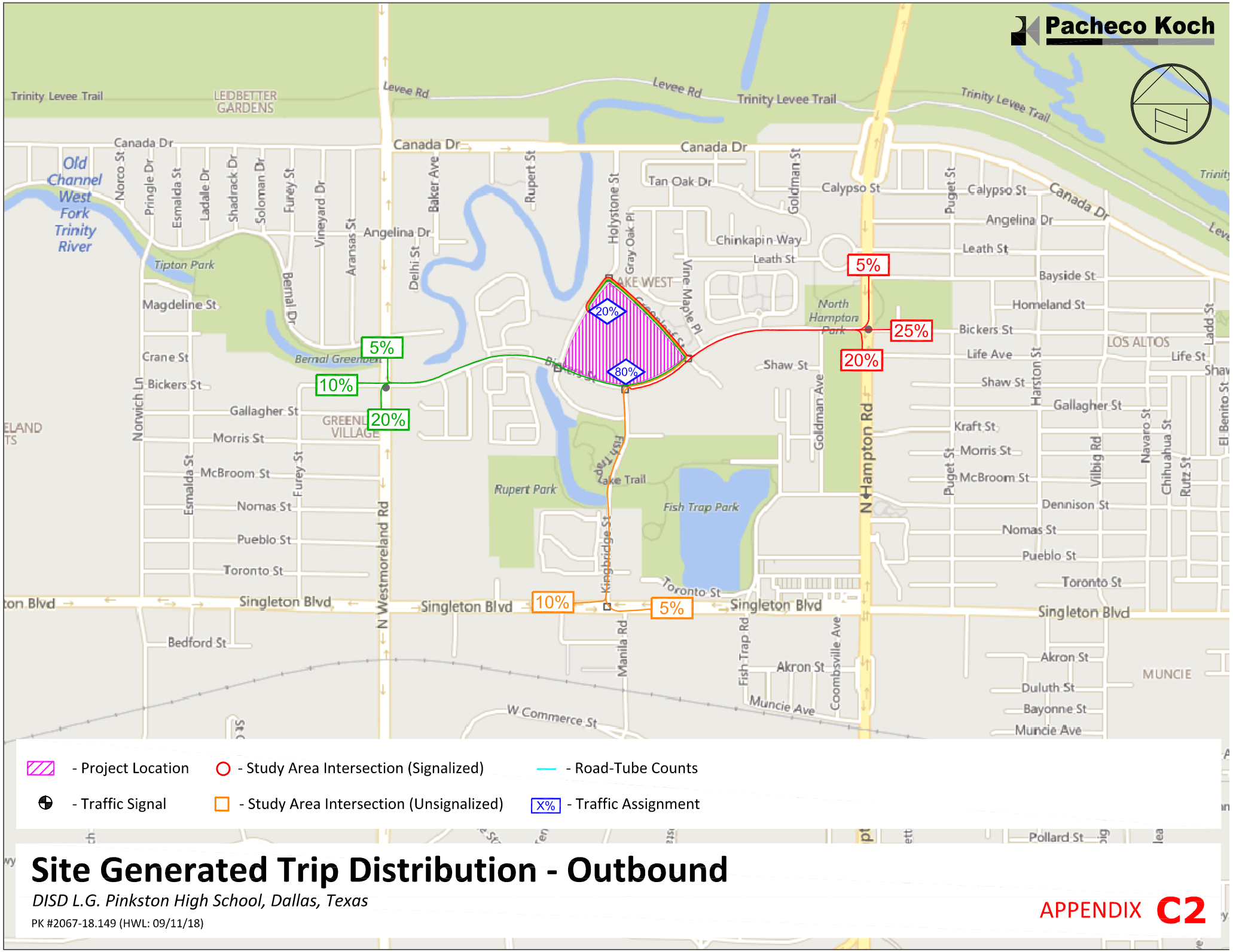


Site Generated Trip Distribution - Inbound

DISD L.G. Pinkston High School, Dallas, Texas

PK #2067-18.149 (HWL: 09/11/18)

APPENDIX **C1**



Site Generated Trip Distribution - Outbound

DISD L.G. Pinkston High School, Dallas, Texas

PK #2067-18.149 (HWL: 09/11/18)

APPENDIX **C2**

	Development Program			Weekday Trip Ends						
				Weekday	AM Peak - Generator			PM Peak - Generator		
	Land Use	Quantity	Units	Daily	In	Out	**Total**	In	Out	**Total**
Use "A"	High School	900	Students	2059	362	171	**533**	102	217	**319**
Subtotal (no adjustments)				2059	362	171	533	102	217	319
Ped/Trans Reductions										
Internal Capture										
Subtotal				2059	362	171	533	102	217	319
Pass-by										
Net Driveway Vols				2059	362	171	533	102	217	319

Appendix D. Detailed Intersection Capacity Analysis Results

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	124	14	12	100	0	17	0	15	5	0	1
Future Vol, veh/h	0	124	14	12	100	0	17	0	15	5	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	135	15	13	109	0	18	0	16	5	0	1
Number of Lanes	0	2	0	0	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	7.9	7.9	7.6	7.7
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	53%	0%	0%	26%	0%	83%
Vol Thru, %	0%	100%	75%	74%	100%	0%
Vol Right, %	47%	0%	25%	0%	0%	17%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	32	83	55	45	67	6
LT Vol	17	0	0	12	0	5
Through Vol	0	83	41	33	67	0
RT Vol	15	0	14	0	0	1
Lane Flow Rate	35	90	60	49	72	7
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.042	0.117	0.075	0.066	0.094	0.008
Departure Headway (Hd)	4.393	4.669	4.491	4.816	4.683	4.669
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	820	763	792	739	759	771
Service Time	2.393	2.426	2.249	2.578	2.446	2.67
HCM Lane V/C Ratio	0.043	0.118	0.076	0.066	0.095	0.009
HCM Control Delay	7.6	8.1	7.6	7.9	7.9	7.7
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0.1	0.4	0.2	0.2	0.3	0

Intersection	
Intersection Delay, s/veh	5
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	14	1	4	7
Future Vol, veh/h	0	0	14	1	4	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	15	1	4	8
Number of Lanes	0	0	1	0	0	1

Approach	NB	SB
Opposing Approach	SB	NB
Opposing Lanes	1	1
Conflicting Approach Left		
Conflicting Lanes Left	0	0
Conflicting Approach Right		
Conflicting Lanes Right	0	0
HCM Control Delay	5	5
HCM LOS	A	A

Lane	NBLn1	SBLn1
Vol Left, %	0%	36%
Vol Thru, %	93%	64%
Vol Right, %	7%	0%
Sign Control	Stop	Stop
Traffic Vol by Lane	15	11
LT Vol	0	4
Through Vol	14	7
RT Vol	1	0
Lane Flow Rate	16	12
Geometry Grp	0	0
Degree of Util (X)	0	0
Departure Headway (Hd)	0	0
Convergence, Y/N	Yes	Yes
Cap	0	0
Service Time	0	0
HCM Lane V/C Ratio	0	0
HCM Control Delay	5	5
HCM Lane LOS	N	N
HCM 95th-tile Q	0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	15	11	43	13	56	5	815	51	68	367	2
Future Volume (vph)	17	15	11	43	13	56	5	815	51	68	367	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	18	16	12	47	14	61	5	886	55	74	399	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	46	0	0	122	0	5	941	0	74	401	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		9.5	22.5	
Total Split (s)	30.0	30.0		30.0	30.0		75.0	75.0		15.0	90.0	
Total Split (%)	25.0%	25.0%		25.0%	25.0%		62.5%	62.5%		12.5%	75.0%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Act Effct Green (s)		8.3			8.3		94.0	94.0		102.7	102.7	
Actuated g/C Ratio		0.07			0.07		0.78	0.78		0.86	0.86	
v/c Ratio		0.23			0.50		0.01	0.24		0.15	0.09	
Control Delay		43.5			37.9		4.0	4.0		2.1	1.5	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		43.5			37.9		4.0	4.0		2.1	1.5	
LOS		D			D		A	A		A	A	
Approach Delay		43.5			37.9			4.0			1.6	
Approach LOS		D			D			A			A	
Queue Length 50th (ft)		13			25		1	63		6	12	
Queue Length 95th (ft)		32			59		4	91		15	21	
Internal Link Dist (ft)		165			1876			177			180	
Turn Bay Length (ft)							100			100		
Base Capacity (vph)		592			629		739	3950		545	4348	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.08			0.19		0.01	0.24		0.14	0.09	

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.50

Intersection Signal Delay: 7.0 — Intersection LOS: A
Intersection Capacity Utilization 41.3% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: N Westmoreland Road & Bickers Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	83	31	57	20	28	20	78	1423	22	14	535	58
Future Volume (vph)	83	31	57	20	28	20	78	1423	22	14	535	58
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	90	34	62	22	30	22	85	1547	24	15	582	63
Shared Lane Traffic (%)												
Lane Group Flow (vph)	90	96	0	22	52	0	85	1571	0	15	645	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	15.0	15.0		15.0	15.0		15.0	75.0		15.0	75.0	
Total Split (%)	12.5%	12.5%		12.5%	12.5%		12.5%	62.5%		12.5%	62.5%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effct Green (s)	18.9	12.6		13.4	7.7		90.2	86.9		86.3	81.6	
Actuated g/C Ratio	0.16	0.10		0.11	0.06		0.75	0.72		0.72	0.68	
v/c Ratio	0.43	0.42		0.13	0.39		0.15	0.43		0.06	0.19	
Control Delay	50.0	29.2		41.0	43.4		5.1	8.4		5.4	8.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	50.0	29.2		41.0	43.4		5.1	8.4		5.4	8.1	
LOS	D	C		D	D		A	A		A	A	
Approach Delay		39.3			42.7			8.2			8.1	
Approach LOS		D			D			A			A	
Queue Length 50th (ft)	61	24		14	23		16	147		3	66	
Queue Length 95th (ft)	106	79		37	63		33	263		9	95	
Internal Link Dist (ft)		1979			82			109			163	
Turn Bay Length (ft)							75			75		
Base Capacity (vph)	218	239		225	172		619	3677		317	3416	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.41	0.40		0.10	0.30		0.14	0.43		0.05	0.19	

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.43

Intersection Signal Delay: 11.4 — Intersection LOS: B
Intersection Capacity Utilization 54.7% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 2: N Hampton Road & Bickers Street

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	133	8	0	125	13	5	0	1	5	0	3
Future Vol, veh/h	1	133	8	0	125	13	5	0	1	5	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	145	9	0	136	14	5	0	1	5	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	150	0	0	153	0	0	219	301	77	217	298	75
Stage 1	-	-	-	-	-	-	151	151	-	143	143	-
Stage 2	-	-	-	-	-	-	68	150	-	74	155	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1429	-	-	1491	-	-	803	661	*1049	*806	664	971
Stage 1	-	-	-	-	-	-	915	818	-	*845	778	-
Stage 2	-	-	-	-	-	-	934	772	-	*989	815	-
Platoon blocked, %		-	-	1	-	-	1	1	1	1	1	
Mov Cap-1 Maneuver	1429	-	-	1491	-	-	800	660	*1049	*805	663	971
Mov Cap-2 Maneuver	-	-	-	-	-	-	800	660	-	*805	663	-
Stage 1	-	-	-	-	-	-	914	817	-	*844	778	-
Stage 2	-	-	-	-	-	-	931	772	-	*987	814	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	9.4	9.2
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	833	1429	-	-	1491	-	-	860
HCM Lane V/C Ratio	0.008	0.001	-	-	-	-	-	0.01
HCM Control Delay (s)	9.4	7.5	0	-	0	-	-	9.2
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

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

Intersection	
Int Delay, s/veh	2.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	107	35	22	98	39	32
Future Vol, veh/h	107	35	22	98	39	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	116	38	24	107	42	35

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	154	0	236	77
Stage 1	-	-	-	-	135	-
Stage 2	-	-	-	-	101	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1490	-	804	*1049
Stage 1	-	-	-	-	944	-
Stage 2	-	-	-	-	912	-
Platoon blocked, %	-	-	1	-	1	1
Mov Cap-1 Maneuver	-	-	1490	-	791	*1049
Mov Cap-2 Maneuver	-	-	-	-	791	-
Stage 1	-	-	-	-	944	-
Stage 2	-	-	-	-	896	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.4	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	890	-	-	1490	-
HCM Lane V/C Ratio	0.087	-	-	0.016	-
HCM Control Delay (s)	9.4	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

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

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	30	427	323	68	53	16
Future Vol, veh/h	30	427	323	68	53	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	80	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	464	351	74	58	17

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	425	0	-	0	639	213
Stage 1	-	-	-	-	388	-
Stage 2	-	-	-	-	251	-
Critical Hdwy	5.34	-	-	-	5.74	7.14
Critical Hdwy Stg 1	-	-	-	-	6.64	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	3.12	-	-	-	3.82	3.92
Pot Cap-1 Maneuver	734	-	-	-	468	674
Stage 1	-	-	-	-	562	-
Stage 2	-	-	-	-	705	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	734	-	-	-	447	674
Mov Cap-2 Maneuver	-	-	-	-	447	-
Stage 1	-	-	-	-	562	-
Stage 2	-	-	-	-	673	-

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	13.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	734	-	-	-	485
HCM Lane V/C Ratio	0.044	-	-	-	0.155
HCM Control Delay (s)	10.1	-	-	-	13.8
HCM Lane LOS	B	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5

Intersection	
Intersection Delay, s/veh	8.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	138	11	17	337	0	9	0	22	8	0	2
Future Vol, veh/h	0	138	11	17	337	0	9	0	22	8	0	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	150	12	18	366	0	10	0	24	9	0	2
Number of Lanes	0	2	0	0	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	8.3	9.3	8	8.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	29%	0%	0%	13%	0%	80%
Vol Thru, %	0%	100%	81%	87%	100%	0%
Vol Right, %	71%	0%	19%	0%	0%	20%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	31	92	57	129	225	10
LT Vol	9	0	0	17	0	8
Through Vol	0	92	46	112	225	0
RT Vol	22	0	11	0	0	2
Lane Flow Rate	34	100	62	141	244	11
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.045	0.138	0.083	0.186	0.319	0.016
Departure Headway (Hd)	4.768	4.964	4.829	4.762	4.696	5.211
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	754	725	745	744	755	689
Service Time	2.778	2.676	2.54	2.553	2.487	3.225
HCM Lane V/C Ratio	0.045	0.138	0.083	0.19	0.323	0.016
HCM Control Delay	8	8.5	8	8.7	9.7	8.3
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0.1	0.5	0.3	0.7	1.4	0

Intersection	
Intersection Delay, s/veh	5
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	46	57	29	53
Future Vol, veh/h	0	0	46	57	29	53
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	50	62	32	58
Number of Lanes	0	0	1	0	0	1

Approach	NB	SB
Opposing Approach	SB	NB
Opposing Lanes	1	1
Conflicting Approach Left		
Conflicting Lanes Left	0	0
Conflicting Approach Right		
Conflicting Lanes Right	0	0
HCM Control Delay	5	5
HCM LOS	A	A

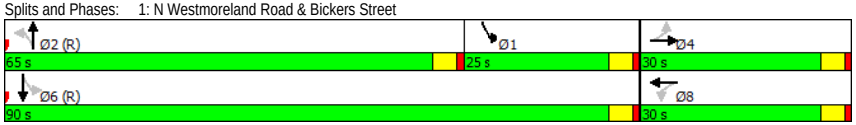
Lane	NBLn1	SBLn1
Vol Left, %	0%	35%
Vol Thru, %	45%	65%
Vol Right, %	55%	0%
Sign Control	Stop	Stop
Traffic Vol by Lane	103	82
LT Vol	0	29
Through Vol	46	53
RT Vol	57	0
Lane Flow Rate	112	89
Geometry Grp	0	0
Degree of Util (X)	0	0
Departure Headway (Hd)	0	0
Convergence, Y/N	Yes	Yes
Cap	0	0
Service Time	0	0
HCM Lane V/C Ratio	0	0
HCM Control Delay	5	5
HCM Lane LOS	N	N
HCM 95th-tile Q	0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	23	10	105	41	121	1	507	87	119	1451	8
Future Volume (vph)	13	23	10	105	41	121	1	507	87	119	1451	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	25	11	114	45	132	1	551	95	129	1577	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	50	0	0	291	0	1	646	0	129	1586	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		9.5	22.5	
Total Split (s)	30.0	30.0		30.0	30.0		65.0	65.0		25.0	90.0	
Total Split (%)	25.0%	25.0%		25.0%	25.0%		54.2%	54.2%		20.8%	75.0%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lead/Lag							Lead	Lead		Lag		
Lead-Lag Optimize?							Yes	Yes		Yes		
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Act Effct Green (s)		12.8			12.8		73.2	73.2		98.2	98.2	
Actuated g/C Ratio		0.11			0.11		0.61	0.61		0.82	0.82	
v/c Ratio		0.17			0.71		0.01	0.21		0.17	0.38	
Control Delay		39.7			41.9		11.0	10.4		3.5	3.4	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		39.7			41.9		11.0	10.4		3.5	3.4	
LOS		D			D		B	B		A	A	
Approach Delay		39.7			41.9			10.4			3.4	
Approach LOS		D			D			B			A	
Queue Length 50th (ft)		14			70		0	71		15	92	
Queue Length 95th (ft)		33			m115		3	104		35	144	
Internal Link Dist (ft)		165			1876			177			180	
Turn Bay Length (ft)							100			100		
Base Capacity (vph)		565			682		154	3050		763	4159	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.09			0.43		0.01	0.21		0.17	0.38	

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 105 (88%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.71

Intersection Signal Delay: 9.9 — Intersection LOS: A
Intersection Capacity Utilization 56.1% — ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: N Westmoreland Road & Bickers Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	102	103	96	23	100	33	109	813	29	46	1905	283
Future Volume (vph)	102	103	96	23	100	33	109	813	29	46	1905	283
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	111	112	104	25	109	36	118	884	32	50	2071	308
Shared Lane Traffic (%)												
Lane Group Flow (vph)	111	216	0	25	145	0	118	916	0	50	2379	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	12.0	20.0		12.0	20.0		12.0	76.0		12.0	76.0	
Total Split (%)	10.0%	16.7%		10.0%	16.7%		10.0%	63.3%		10.0%	63.3%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effct Green (s)	22.9	18.4		20.1	13.4		82.6	76.6		80.2	73.7	
Actuated g/C Ratio	0.19	0.15		0.17	0.11		0.69	0.64		0.67	0.61	
v/c Ratio	0.55	0.74		0.14	0.69		0.69	0.28		0.12	0.77	
Control Delay	53.6	60.4		38.6	64.0		41.9	10.5		6.4	19.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	53.6	60.4		38.6	64.0		41.9	10.5		6.4	19.2	
LOS	D	E		D	E		D	B		A	B	
Approach Delay		58.1			60.3			14.1			19.0	
Approach LOS		E			E			B			B	
Queue Length 50th (ft)	69	135		15	99		39	117		11	482	
Queue Length 95th (ft)	129	#282		39	169		#126	145		23	547	
Internal Link Dist (ft)		1979			82			109			163	
Turn Bay Length (ft)							75			75		
Base Capacity (vph)	202	292		187	241		173	3231		433	3081	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.55	0.74		0.13	0.60		0.68	0.28		0.12	0.77	

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.77

Intersection Signal Delay: 22.7 — Intersection LOS: C
Intersection Capacity Utilization 79.6% — 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: 2: N Hampton Road & Bickers Street

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	37	219	21	0	308	72	7	3	0	16	8	45
Future Vol, veh/h	37	219	21	0	308	72	7	3	0	16	8	45
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	40	238	23	0	335	78	8	3	0	17	9	49

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	413	0	0	261	0	0	502	743	130	575	715	207
Stage 1	-	-	-	-	-	-	330	330	-	374	374	-
Stage 2	-	-	-	-	-	-	172	413	-	201	341	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1142	-	-	1461	-	-	592	407	*997	*520	424	799
Stage 1	-	-	-	-	-	-	823	747	-	*619	616	-
Stage 2	-	-	-	-	-	-	813	592	-	*940	738	-
Platoon blocked, %		-	-	1	-	-	1	1	1	1	1	
Mov Cap-1 Maneuver	1142	-	-	1461	-	-	530	390	*997	*501	406	799
Mov Cap-2 Maneuver	-	-	-	-	-	-	530	390	-	*501	406	-
Stage 1	-	-	-	-	-	-	790	716	-	*594	616	-
Stage 2	-	-	-	-	-	-	752	592	-	*898	707	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	0	12.7	11.4
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	478	1142	-	-	1461	-	-	639
HCM Lane V/C Ratio	0.023	0.035	-	-	-	-	-	0.117
HCM Control Delay (s)	12.7	8.3	0.1	-	0	-	-	11.4
HCM Lane LOS	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.4

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

Intersection	
Int Delay, s/veh	3.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	200	39	77	296	81	66
Future Vol, veh/h	200	39	77	296	81	66
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	217	42	84	322	88	72

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	260	0	567	130
Stage 1	-	-	-	-	239	-
Stage 2	-	-	-	-	328	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1408	-	526	*1023
Stage 1	-	-	-	-	884	-
Stage 2	-	-	-	-	702	-
Platoon blocked, %	-	-	1	-	1	1
Mov Cap-1 Maneuver	-	-	1408	-	488	*1023
Mov Cap-2 Maneuver	-	-	-	-	488	-
Stage 1	-	-	-	-	884	-
Stage 2	-	-	-	-	651	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.8	12.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	638	-	-	1408	-
HCM Lane V/C Ratio	0.25	-	-	0.059	-
HCM Control Delay (s)	12.5	-	-	7.7	0.2
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	1	-	-	0.2	-

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

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	69	593	541	116	74	70
Future Vol, veh/h	69	593	541	116	74	70
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	80	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	75	645	588	126	80	76

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	714	0	-	0	1059	357
Stage 1	-	-	-	-	651	-
Stage 2	-	-	-	-	408	-
Critical Hdwy	5.34	-	-	-	5.74	7.14
Critical Hdwy Stg 1	-	-	-	-	6.64	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	3.12	-	-	-	3.82	3.92
Pot Cap-1 Maneuver	537	-	-	-	290	546
Stage 1	-	-	-	-	393	-
Stage 2	-	-	-	-	586	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	537	-	-	-	249	546
Mov Cap-2 Maneuver	-	-	-	-	249	-
Stage 1	-	-	-	-	393	-
Stage 2	-	-	-	-	504	-

Approach	EB	WB	SB
HCM Control Delay, s	1.3	0	24.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	537	-	-	-	339
HCM Lane V/C Ratio	0.14	-	-	-	0.462
HCM Control Delay (s)	12.8	-	-	-	24.4
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.5	-	-	-	2.3

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	124	14	12	100	0	17	0	15	5	0	1
Future Vol, veh/h	0	124	14	12	100	0	17	0	15	5	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	135	15	13	109	0	18	0	16	5	0	1
Number of Lanes	0	2	0	0	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	7.9	7.9	7.6	7.7
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	53%	0%	0%	26%	0%	83%
Vol Thru, %	0%	100%	75%	74%	100%	0%
Vol Right, %	47%	0%	25%	0%	0%	17%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	32	83	55	45	67	6
LT Vol	17	0	0	12	0	5
Through Vol	0	83	41	33	67	0
RT Vol	15	0	14	0	0	1
Lane Flow Rate	35	90	60	49	72	7
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.042	0.117	0.075	0.066	0.094	0.008
Departure Headway (Hd)	4.393	4.669	4.491	4.816	4.683	4.669
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	820	763	792	739	759	771
Service Time	2.393	2.426	2.249	2.578	2.446	2.67
HCM Lane V/C Ratio	0.043	0.118	0.076	0.066	0.095	0.009
HCM Control Delay	7.6	8.1	7.6	7.9	7.9	7.7
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0.1	0.4	0.2	0.2	0.3	0

Intersection	
Intersection Delay, s/veh	5
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	14	1	4	7
Future Vol, veh/h	0	0	14	1	4	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	15	1	4	8
Number of Lanes	0	0	1	0	0	1

Approach	NB	SB
Opposing Approach	SB	NB
Opposing Lanes	1	1
Conflicting Approach Left		
Conflicting Lanes Left	0	0
Conflicting Approach Right		
Conflicting Lanes Right	0	0
HCM Control Delay	5	5
HCM LOS	A	A

Lane	NBLn1	SBLn1
Vol Left, %	0%	36%
Vol Thru, %	93%	64%
Vol Right, %	7%	0%
Sign Control	Stop	Stop
Traffic Vol by Lane	15	11
LT Vol	0	4
Through Vol	14	7
RT Vol	1	0
Lane Flow Rate	16	12
Geometry Grp	0	0
Degree of Util (X)	0	0
Departure Headway (Hd)	0	0
Convergence, Y/N	Yes	Yes
Cap	0	0
Service Time	0	0
HCM Lane V/C Ratio	0	0
HCM Control Delay	5	5
HCM Lane LOS	N	N
HCM 95th-tile Q	0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	15	11	43	13	56	5	840	51	68	378	2
Future Volume (vph)	17	15	11	43	13	56	5	840	51	68	378	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	18	16	12	47	14	61	5	913	55	74	411	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	46	0	0	122	0	5	968	0	74	413	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		9.5	22.5	
Total Split (s)	30.0	30.0		30.0	30.0		75.0	75.0		15.0	90.0	
Total Split (%)	25.0%	25.0%		25.0%	25.0%		62.5%	62.5%		12.5%	75.0%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Act Effct Green (s)		8.3			8.3		94.0	94.0		102.7	102.7	
Actuated g/C Ratio		0.07			0.07		0.78	0.78		0.86	0.86	
v/c Ratio		0.23			0.50		0.01	0.25		0.15	0.09	
Control Delay		43.5			37.8		4.0	4.1		2.2	1.5	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		43.5			37.8		4.0	4.1		2.2	1.5	
LOS		D			D		A	A		A	A	
Approach Delay		43.5			37.8			4.1			1.6	
Approach LOS		D			D			A			A	
Queue Length 50th (ft)		13			25		1	65		6	12	
Queue Length 95th (ft)		32			59		4	95		15	22	
Internal Link Dist (ft)		165			1876			177			180	
Turn Bay Length (ft)							100			100		
Base Capacity (vph)		592			629		730	3950		532	4348	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.08			0.19		0.01	0.25		0.14	0.09	

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.50

Intersection Signal Delay: 7.0 — Intersection LOS: A
Intersection Capacity Utilization 41.8% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: N Westmoreland Road & Bickers Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	83	31	57	20	28	20	78	1466	22	14	551	58
Future Volume (vph)	83	31	57	20	28	20	78	1466	22	14	551	58
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	90	34	62	22	30	22	85	1593	24	15	599	63
Shared Lane Traffic (%)												
Lane Group Flow (vph)	90	96	0	22	52	0	85	1617	0	15	662	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	15.0	15.0		15.0	15.0		15.0	75.0		15.0	75.0	
Total Split (%)	12.5%	12.5%		12.5%	12.5%		12.5%	62.5%		12.5%	62.5%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effct Green (s)	18.9	12.6		13.4	7.7		90.2	86.9		86.3	81.6	
Actuated g/C Ratio	0.16	0.10		0.11	0.06		0.75	0.72		0.72	0.68	
v/c Ratio	0.43	0.42		0.13	0.39		0.15	0.44		0.06	0.19	
Control Delay	50.0	29.2		41.0	43.4		5.2	8.5		5.4	8.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	50.0	29.2		41.0	43.4		5.2	8.5		5.4	8.2	
LOS	D	C		D	D		A	A		A	A	
Approach Delay		39.2			42.7			8.3			8.1	
Approach LOS		D			D			A			A	
Queue Length 50th (ft)	61	24		14	23		16	153		3	68	
Queue Length 95th (ft)	106	80		37	63		33	273		9	97	
Internal Link Dist (ft)		1979			82			109			163	
Turn Bay Length (ft)							75			75		
Base Capacity (vph)	218	239		225	172		609	3677		308	3419	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.41	0.40		0.10	0.30		0.14	0.44		0.05	0.19	

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.44

Intersection Signal Delay: 11.4 — Intersection LOS: B
Intersection Capacity Utilization 55.5% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 2: N Hampton Road & Bickers Street

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	133	8	0	125	13	5	0	1	5	0	3
Future Vol, veh/h	1	133	8	0	125	13	5	0	1	5	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	145	9	0	136	14	5	0	1	5	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	150	0	0	153	0	0	219	301	77	217	298	75
Stage 1	-	-	-	-	-	-	151	151	-	143	143	-
Stage 2	-	-	-	-	-	-	68	150	-	74	155	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1429	-	-	1491	-	-	803	661	*1049	*806	664	971
Stage 1	-	-	-	-	-	-	915	818	-	*845	778	-
Stage 2	-	-	-	-	-	-	934	772	-	*989	815	-
Platoon blocked, %		-	-	1	-	-	1	1	1	1	1	
Mov Cap-1 Maneuver	1429	-	-	1491	-	-	800	660	*1049	*805	663	971
Mov Cap-2 Maneuver	-	-	-	-	-	-	800	660	-	*805	663	-
Stage 1	-	-	-	-	-	-	914	817	-	*844	778	-
Stage 2	-	-	-	-	-	-	931	772	-	*987	814	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	9.4	9.2
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	833	1429	-	-	1491	-	-	860
HCM Lane V/C Ratio	0.008	0.001	-	-	-	-	-	0.01
HCM Control Delay (s)	9.4	7.5	0	-	0	-	-	9.2
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

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

Intersection	
Int Delay, s/veh	2.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	107	35	22	98	39	32
Future Vol, veh/h	107	35	22	98	39	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	116	38	24	107	42	35

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	154	0	236	77
Stage 1	-	-	-	-	135	-
Stage 2	-	-	-	-	101	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1490	-	804	*1049
Stage 1	-	-	-	-	944	-
Stage 2	-	-	-	-	912	-
Platoon blocked, %	-	-	1	-	1	1
Mov Cap-1 Maneuver	-	-	1490	-	791	*1049
Mov Cap-2 Maneuver	-	-	-	-	791	-
Stage 1	-	-	-	-	944	-
Stage 2	-	-	-	-	896	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.4	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	890	-	-	1490	-
HCM Lane V/C Ratio	0.087	-	-	0.016	-
HCM Control Delay (s)	9.4	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

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

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	31	440	333	68	53	16
Future Vol, veh/h	31	440	333	68	53	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	80	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	34	478	362	74	58	17

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	436	0	-	0	658	218
Stage 1	-	-	-	-	399	-
Stage 2	-	-	-	-	259	-
Critical Hdwy	5.34	-	-	-	5.74	7.14
Critical Hdwy Stg 1	-	-	-	-	6.64	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	3.12	-	-	-	3.82	3.92
Pot Cap-1 Maneuver	726	-	-	-	459	670
Stage 1	-	-	-	-	554	-
Stage 2	-	-	-	-	698	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	726	-	-	-	438	670
Mov Cap-2 Maneuver	-	-	-	-	438	-
Stage 1	-	-	-	-	554	-
Stage 2	-	-	-	-	665	-

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	14
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	726	-	-	-	476
HCM Lane V/C Ratio	0.046	-	-	-	0.158
HCM Control Delay (s)	10.2	-	-	-	14
HCM Lane LOS	B	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.6

Intersection	
Intersection Delay, s/veh	8.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	138	11	17	337	0	9	0	22	8	0	2
Future Vol, veh/h	0	138	11	17	337	0	9	0	22	8	0	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	150	12	18	366	0	10	0	24	9	0	2
Number of Lanes	0	2	0	0	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	8.3	9.3	8	8.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	29%	0%	0%	13%	0%	80%
Vol Thru, %	0%	100%	81%	87%	100%	0%
Vol Right, %	71%	0%	19%	0%	0%	20%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	31	92	57	129	225	10
LT Vol	9	0	0	17	0	8
Through Vol	0	92	46	112	225	0
RT Vol	22	0	11	0	0	2
Lane Flow Rate	34	100	62	141	244	11
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.045	0.138	0.083	0.186	0.319	0.016
Departure Headway (Hd)	4.768	4.964	4.829	4.762	4.696	5.211
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	754	725	745	744	755	689
Service Time	2.778	2.676	2.54	2.553	2.487	3.225
HCM Lane V/C Ratio	0.045	0.138	0.083	0.19	0.323	0.016
HCM Control Delay	8	8.5	8	8.7	9.7	8.3
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0.1	0.5	0.3	0.7	1.4	0

Intersection	
Intersection Delay, s/veh	5
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	46	57	29	53
Future Vol, veh/h	0	0	46	57	29	53
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	50	62	32	58
Number of Lanes	0	0	1	0	0	1

Approach	NB	SB
Opposing Approach	SB	NB
Opposing Lanes	1	1
Conflicting Approach Left		
Conflicting Lanes Left	0	0
Conflicting Approach Right		
Conflicting Lanes Right	0	0
HCM Control Delay	5	5
HCM LOS	A	A

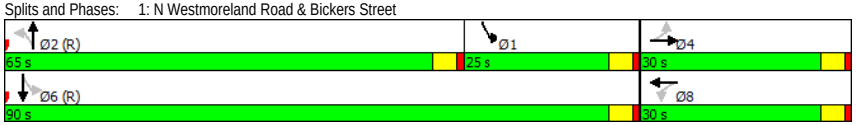
Lane	NBLn1	SBLn1
Vol Left, %	0%	35%
Vol Thru, %	45%	65%
Vol Right, %	55%	0%
Sign Control	Stop	Stop
Traffic Vol by Lane	103	82
LT Vol	0	29
Through Vol	46	53
RT Vol	57	0
Lane Flow Rate	112	89
Geometry Grp	0	0
Degree of Util (X)	0	0
Departure Headway (Hd)	0	0
Convergence, Y/N	Yes	Yes
Cap	0	0
Service Time	0	0
HCM Lane V/C Ratio	0	0
HCM Control Delay	5	5
HCM Lane LOS	N	N
HCM 95th-tile Q	0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	23	10	105	41	121	1	522	87	119	1495	8
Future Volume (vph)	13	23	10	105	41	121	1	522	87	119	1495	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	25	11	114	45	132	1	567	95	129	1625	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	50	0	0	291	0	1	662	0	129	1634	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		9.5	22.5	
Total Split (s)	30.0	30.0		30.0	30.0		65.0	65.0		25.0	90.0	
Total Split (%)	25.0%	25.0%		25.0%	25.0%		54.2%	54.2%		20.8%	75.0%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lead/Lag							Lead	Lead		Lag		
Lead-Lag Optimize?							Yes	Yes		Yes		
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Act Effct Green (s)		12.8			12.8		73.2	73.2		98.2	98.2	
Actuated g/C Ratio		0.11			0.11		0.61	0.61		0.82	0.82	
v/c Ratio		0.17			0.71		0.01	0.22		0.17	0.39	
Control Delay		39.7			41.7		11.0	10.5		3.6	3.5	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		39.7			41.7		11.0	10.5		3.6	3.5	
LOS		D			D		B	B		A	A	
Approach Delay		39.7			41.7			10.5			3.5	
Approach LOS		D			D			B			A	
Queue Length 50th (ft)		14			70		0	73		15	97	
Queue Length 95th (ft)		33			m114		3	106		35	150	
Internal Link Dist (ft)		165			1876			177			180	
Turn Bay Length (ft)							100			100		
Base Capacity (vph)		565			682		145	3050		755	4159	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.09			0.43		0.01	0.22		0.17	0.39	

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 105 (88%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.71

Intersection Signal Delay: 9.8 — Intersection LOS: A
Intersection Capacity Utilization 57.0% — ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: N Westmoreland Road & Bickers Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	102	103	96	23	100	33	109	838	29	46	1963	283
Future Volume (vph)	102	103	96	23	100	33	109	838	29	46	1963	283
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	111	112	104	25	109	36	118	911	32	50	2134	308
Shared Lane Traffic (%)												
Lane Group Flow (vph)	111	216	0	25	145	0	118	943	0	50	2442	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	12.0	20.0		12.0	20.0		12.0	76.0		12.0	76.0	
Total Split (%)	10.0%	16.7%		10.0%	16.7%		10.0%	63.3%		10.0%	63.3%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effct Green (s)	22.9	18.4		20.1	13.4		82.6	76.6		80.2	73.7	
Actuated g/C Ratio	0.19	0.15		0.17	0.11		0.69	0.64		0.67	0.61	
v/c Ratio	0.55	0.74		0.14	0.69		0.69	0.29		0.12	0.79	
Control Delay	53.7	60.3		38.6	64.0		41.9	10.6		6.4	20.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	53.7	60.3		38.6	64.0		41.9	10.6		6.4	20.0	
LOS	D	E		D	E		D	B		A	B	
Approach Delay		58.1			60.3			14.1			19.7	
Approach LOS		E			E			B			B	
Queue Length 50th (ft)	70	135		15	99		39	121		11	508	
Queue Length 95th (ft)	129	#281		39	169		#126	150		23	576	
Internal Link Dist (ft)		1979			82			109			163	
Turn Bay Length (ft)							75			75		
Base Capacity (vph)	202	292		187	241		173	3231		423	3080	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.55	0.74		0.13	0.60		0.68	0.29		0.12	0.79	

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.79

Intersection Signal Delay: 23.0 — Intersection LOS: C
Intersection Capacity Utilization 80.7% — 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: 2: N Hampton Road & Bickers Street

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	37	219	21	0	308	72	7	3	0	16	8	45
Future Vol, veh/h	37	219	21	0	308	72	7	3	0	16	8	45
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	40	238	23	0	335	78	8	3	0	17	9	49

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	413	0	0	261	0	0	502	743	130	575	715	207
Stage 1	-	-	-	-	-	-	330	330	-	374	374	-
Stage 2	-	-	-	-	-	-	172	413	-	201	341	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1142	-	-	1461	-	-	592	407	*997	*520	424	799
Stage 1	-	-	-	-	-	-	823	747	-	*619	616	-
Stage 2	-	-	-	-	-	-	813	592	-	*940	738	-
Platoon blocked, %		-	-	1	-	-	1	1	1	1	1	
Mov Cap-1 Maneuver	1142	-	-	1461	-	-	530	390	*997	*501	406	799
Mov Cap-2 Maneuver	-	-	-	-	-	-	530	390	-	*501	406	-
Stage 1	-	-	-	-	-	-	790	716	-	*594	616	-
Stage 2	-	-	-	-	-	-	752	592	-	*898	707	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	0	12.7	11.4
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	478	1142	-	-	1461	-	-	639
HCM Lane V/C Ratio	0.023	0.035	-	-	-	-	-	0.117
HCM Control Delay (s)	12.7	8.3	0.1	-	0	-	-	11.4
HCM Lane LOS	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.4

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

Intersection	
Int Delay, s/veh	3.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	200	39	77	296	81	66
Future Vol, veh/h	200	39	77	296	81	66
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	217	42	84	322	88	72

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	260	0	567	130
Stage 1	-	-	-	-	239	-
Stage 2	-	-	-	-	328	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1408	-	526	*1023
Stage 1	-	-	-	-	884	-
Stage 2	-	-	-	-	702	-
Platoon blocked, %	-	-	1	-	1	1
Mov Cap-1 Maneuver	-	-	1408	-	488	*1023
Mov Cap-2 Maneuver	-	-	-	-	488	-
Stage 1	-	-	-	-	884	-
Stage 2	-	-	-	-	651	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.8	12.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	638	-	-	1408	-
HCM Lane V/C Ratio	0.25	-	-	0.059	-
HCM Control Delay (s)	12.5	-	-	7.7	0.2
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	1	-	-	0.2	-

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

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	71	611	557	116	74	70
Future Vol, veh/h	71	611	557	116	74	70
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	80	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	77	664	605	126	80	76

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	732	0	-	0	1088	366
Stage 1	-	-	-	-	668	-
Stage 2	-	-	-	-	420	-
Critical Hdwy	5.34	-	-	-	5.74	7.14
Critical Hdwy Stg 1	-	-	-	-	6.64	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	3.12	-	-	-	3.82	3.92
Pot Cap-1 Maneuver	526	-	-	-	280	539
Stage 1	-	-	-	-	384	-
Stage 2	-	-	-	-	577	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	526	-	-	-	239	539
Mov Cap-2 Maneuver	-	-	-	-	239	-
Stage 1	-	-	-	-	384	-
Stage 2	-	-	-	-	493	-

Approach	EB	WB	SB
HCM Control Delay, s	1.4	0	25.6
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	526	-	-	-	328
HCM Lane V/C Ratio	0.147	-	-	-	0.477
HCM Control Delay (s)	13	-	-	-	25.6
HCM Lane LOS	B	-	-	-	D
HCM 95th %tile Q(veh)	0.5	-	-	-	2.5

Intersection	
Intersection Delay, s/veh	10.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	181	192	14	12	100	181	17	0	15	22	0	18
Future Vol, veh/h	181	192	14	12	100	181	17	0	15	22	0	18
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	197	209	15	13	109	197	18	0	16	24	0	20
Number of Lanes	0	2	0	0	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	11.2	9.3	8.8	8.9
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	53%	65%	0%	19%	0%	55%
Vol Thru, %	0%	35%	87%	81%	22%	0%
Vol Right, %	47%	0%	13%	0%	78%	45%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	32	277	110	62	231	40
LT Vol	17	181	0	12	0	22
Through Vol	0	96	96	50	50	0
RT Vol	15	0	14	0	181	18
Lane Flow Rate	35	301	120	67	251	43
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.052	0.446	0.163	0.098	0.32	0.066
Departure Headway (Hd)	5.428	5.329	4.912	5.234	4.585	5.426
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	656	674	729	684	783	657
Service Time	3.49	3.065	2.647	2.971	2.321	3.485
HCM Lane V/C Ratio	0.053	0.447	0.165	0.098	0.321	0.065
HCM Control Delay	8.8	12.3	8.6	8.5	9.5	8.9
HCM Lane LOS	A	B	A	A	A	A
HCM 95th-tile Q	0.2	2.3	0.6	0.3	1.4	0.2

Intersection	
Intersection Delay, s/veh	10.5
Intersection LOS	B

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	362	0	14	35	4	7
Future Vol, veh/h	362	0	14	35	4	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	393	0	15	38	4	8
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	11	7.7	8.1
HCM LOS	B	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	100%	36%
Vol Thru, %	29%	0%	64%
Vol Right, %	71%	0%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	49	362	11
LT Vol	0	362	4
Through Vol	14	0	7
RT Vol	35	0	0
Lane Flow Rate	53	393	12
Geometry Grp	1	1	1
Degree of Util (X)	0.066	0.464	0.017
Departure Headway (Hd)	4.433	4.247	4.987
Convergence, Y/N	Yes	Yes	Yes
Cap	813	842	721
Service Time	2.434	2.296	2.991
HCM Lane V/C Ratio	0.065	0.467	0.017
HCM Control Delay	7.7	11	8.1
HCM Lane LOS	A	B	A
HCM 95th-tile Q	0.2	2.5	0.1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	51	11	77	30	65	5	840	123	86	378	2
Future Volume (vph)	17	51	11	77	30	65	5	840	123	86	378	2
Peak Hour Factor	0.92	0.50	0.92	0.92	0.50	0.92	0.92	0.92	0.75	0.92	0.92	0.92
Adj. Flow (vph)	18	102	12	84	60	71	5	913	164	93	411	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	132	0	0	215	0	5	1077	0	93	413	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		9.5	22.5	
Total Split (s)	30.0	30.0		30.0	30.0		75.0	75.0		15.0	90.0	
Total Split (%)	25.0%	25.0%		25.0%	25.0%		62.5%	62.5%		12.5%	75.0%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Act Effct Green (s)		12.4			12.4		87.4	87.4		98.6	98.6	
Actuated g/C Ratio		0.10			0.10		0.73	0.73		0.82	0.82	
v/c Ratio		0.41			0.65		0.01	0.30		0.22	0.10	
Control Delay		50.3			44.8		5.8	5.9		3.6	2.3	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		50.3			44.8		5.8	5.9		3.6	2.3	
LOS		D			D		A	A		A	A	
Approach Delay		50.3			44.8			5.9			2.6	
Approach LOS		D			D			A			A	
Queue Length 50th (ft)		47			59		1	87		10	17	
Queue Length 95th (ft)		40			40		5	130		25	30	
Internal Link Dist (ft)		165			1876			177			180	
Turn Bay Length (ft)							100			100		
Base Capacity (vph)		649			618		679	3631		466	4175	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.20			0.35		0.01	0.30		0.20	0.10	

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.65

Intersection Signal Delay: 12.4 — Intersection LOS: B
Intersection Capacity Utilization 45.9% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: N Westmoreland Road & Bickers Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	74	91	20	119	20	150	1466	22	14	551	76
Future Volume (vph)	92	74	91	20	119	20	150	1466	22	14	551	76
Peak Hour Factor	0.92	0.75	0.92	0.92	0.50	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	100	99	99	22	238	22	163	1593	24	15	599	83
Shared Lane Traffic (%)												
Lane Group Flow (vph)	100	198	0	22	260	0	163	1617	0	15	682	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	15.0	15.0		15.0	15.0		15.0	75.0		15.0	75.0	
Total Split (%)	12.5%	12.5%		12.5%	12.5%		12.5%	62.5%		12.5%	62.5%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effct Green (s)	24.6	18.3		18.1	11.4		85.3	81.2		78.0	72.2	
Actuated g/C Ratio	0.20	0.15		0.15	0.10		0.71	0.68		0.65	0.60	
v/c Ratio	0.52	0.68		0.12	1.48		0.31	0.47		0.07	0.23	
Control Delay	49.4	54.5		39.6	279.7		7.0	10.3		6.0	10.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	49.4	54.5		39.6	279.7		7.0	10.3		6.0	10.7	
LOS	D	D		D	F		A	B		A	B	
Approach Delay		52.8			261.0			10.0			10.6	
Approach LOS		D			F			A			B	
Queue Length 50th (ft)	65	127		14	~288		36	171		3	79	
Queue Length 95th (ft)	116	#201		37	#194		58	273		9	104	
Internal Link Dist (ft)		1979			82			109			163	
Turn Bay Length (ft)							75			75		
Base Capacity (vph)	204	290		241	176		550	3436		291	3017	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.49	0.68		0.09	1.48		0.30	0.47		0.05	0.23	

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.48

Intersection Signal Delay: 37.4 — Intersection LOS: D
Intersection Capacity Utilization 61.6% — ICU Level of Service B
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: N Hampton Road & Bickers Street

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	260	8	0	151	0	5	0	1	39	0	37
Future Vol, veh/h	0	260	8	0	151	0	5	0	1	39	0	37
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	92	92	92	92	50	92	92	92	50	92	50
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	283	9	0	164	0	5	0	1	78	0	74

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	164	0	0	292	0	0	370	452	146	306	456	82
Stage 1	-	-	-	-	-	-	288	288	-	164	164	-
Stage 2	-	-	-	-	-	-	82	164	-	142	292	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1412	-	-	1421	-	-	747	613	*997	*835	610	961
Stage 1	-	-	-	-	-	-	876	781	-	*822	761	-
Stage 2	-	-	-	-	-	-	917	761	-	*940	778	-
Platoon blocked, %		-	-	1	-	-	1	1	1	1	1	
Mov Cap-1 Maneuver	1412	-	-	1421	-	-	689	613	*997	*834	610	961
Mov Cap-2 Maneuver	-	-	-	-	-	-	689	613	-	*834	610	-
Stage 1	-	-	-	-	-	-	876	781	-	*822	761	-
Stage 2	-	-	-	-	-	-	846	761	-	*939	778	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	10	9.9
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	726	1412	-	-	1421	-	-	891
HCM Lane V/C Ratio	0.009	-	-	-	-	-	-	0.171
HCM Control Delay (s)	10	0	-	-	0	-	-	9.9
HCM Lane LOS	B	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.6

Notes

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

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	259	44	31	107	0	39	0	86	43	9	17
Future Vol, veh/h	0	259	44	31	107	0	39	0	86	43	9	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	92	92	92	92	50	92	50	92	50	50	50
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	282	48	34	116	0	42	0	93	86	18	34

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	116	0	0	330	0	0	441	490	165	325	514	58
Stage 1	-	-	-	-	-	-	306	306	-	184	184	-
Stage 2	-	-	-	-	-	-	135	184	-	141	330	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1470	-	-	1372	-	-	659	582	*997	*808	563	996
Stage 1	-	-	-	-	-	-	853	766	-	*800	746	-
Stage 2	-	-	-	-	-	-	854	746	-	*940	747	-
Platoon blocked, %		-	-	1	-	-	1	1	1	1	1	
Mov Cap-1 Maneuver	1470	-	-	1372	-	-	609	567	*997	*717	548	996
Mov Cap-2 Maneuver	-	-	-	-	-	-	609	567	-	*717	548	-
Stage 1	-	-	-	-	-	-	853	766	-	*800	727	-
Stage 2	-	-	-	-	-	-	784	727	-	*852	747	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.8	10.2	11
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	832	1470	-	-	1372	-	-	738
HCM Lane V/C Ratio	0.163	-	-	-	0.025	-	-	0.187
HCM Control Delay (s)	10.2	0	-	-	7.7	0.1	-	11
HCM Lane LOS	B	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.6	0	-	-	0.1	-	-	0.7

Notes

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

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	67	440	333	86	62	33
Future Vol, veh/h	67	440	333	86	62	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	80	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	75	92	92	92	92	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	89	478	362	93	67	44

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	455	0	-	0	778	228
Stage 1	-	-	-	-	409	-
Stage 2	-	-	-	-	369	-
Critical Hdwy	5.34	-	-	-	5.74	7.14
Critical Hdwy Stg 1	-	-	-	-	6.64	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	3.12	-	-	-	3.82	3.92
Pot Cap-1 Maneuver	711	-	-	-	400	660
Stage 1	-	-	-	-	546	-
Stage 2	-	-	-	-	613	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	711	-	-	-	350	660
Mov Cap-2 Maneuver	-	-	-	-	350	-
Stage 1	-	-	-	-	478	-
Stage 2	-	-	-	-	613	-

Approach	EB	WB	SB
HCM Control Delay, s	1.7	0	16.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	711	-	-	-	430
HCM Lane V/C Ratio	0.126	-	-	-	0.259
HCM Control Delay (s)	10.8	-	-	-	16.3
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.4	-	-	-	1

Intersection	
Int Delay, s/veh	4.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	14	0	145	153
Future Vol, veh/h	0	0	14	0	145	153
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	50	50	92	50	50	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	15	0	290	166

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	761	15	0	0	15	0
Stage 1	15	-	-	-	-	-
Stage 2	746	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	373	1065	-	-	1603	-
Stage 1	1008	-	-	-	-	-
Stage 2	469	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	299	1065	-	-	1603	-
Mov Cap-2 Maneuver	299	-	-	-	-	-
Stage 1	807	-	-	-	-	-
Stage 2	469	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	4.9
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1603	-
HCM Lane V/C Ratio	-	-	-	0.181	-
HCM Control Delay (s)	-	-	0	7.7	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	-	0.7	-

Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	14	0	18	298
Future Vol, veh/h	0	0	14	0	18	298
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	50	50	92	50	50	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	15	0	36	324

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	411	15	0	0	15	0
Stage 1	15	-	-	-	-	-
Stage 2	396	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	597	1065	-	-	1603	-
Stage 1	1008	-	-	-	-	-
Stage 2	680	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	581	1065	-	-	1603	-
Mov Cap-2 Maneuver	581	-	-	-	-	-
Stage 1	981	-	-	-	-	-
Stage 2	680	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1603	-
HCM Lane V/C Ratio	-	-	-	0.022	-
HCM Control Delay (s)	-	-	0	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	-	0.1	-

Intersection	
Int Delay, s/veh	2.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	34	14	0	54	316
Future Vol, veh/h	0	34	14	0	54	316
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	50	50	92	50	50	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	68	15	0	108	343

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	574	15	0	0	15	0
Stage 1	15	-	-	-	-	-
Stage 2	559	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	480	1065	-	-	1603	-
Stage 1	1008	-	-	-	-	-
Stage 2	572	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	440	1065	-	-	1603	-
Mov Cap-2 Maneuver	440	-	-	-	-	-
Stage 1	924	-	-	-	-	-
Stage 2	572	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.6	0	1.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1065	1603	-
HCM Lane V/C Ratio	-	-	0.064	0.067	-
HCM Control Delay (s)	-	-	8.6	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.2	-

Intersection	
Intersection Delay, s/veh	9.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	51	225	11	17	337	51	9	0	22	30	0	24
Future Vol, veh/h	51	225	11	17	337	51	9	0	22	30	0	24
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	55	245	12	18	366	55	10	0	24	33	0	26
Number of Lanes	0	2	0	0	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	9.6	10	8.6	9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	29%	31%	0%	9%	0%	56%
Vol Thru, %	0%	69%	91%	91%	77%	0%
Vol Right, %	71%	0%	9%	0%	23%	44%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	31	164	124	186	220	54
LT Vol	9	51	0	17	0	30
Through Vol	0	113	113	169	169	0
RT Vol	22	0	11	0	51	24
Lane Flow Rate	34	178	134	202	239	59
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.049	0.263	0.191	0.286	0.325	0.088
Departure Headway (Hd)	5.257	5.337	5.117	5.113	4.903	5.421
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	677	672	699	702	732	657
Service Time	3.324	3.084	2.864	2.856	2.646	3.482
HCM Lane V/C Ratio	0.05	0.265	0.192	0.288	0.327	0.09
HCM Control Delay	8.6	10	9.1	9.9	10	9
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0.2	1.1	0.7	1.2	1.4	0.3

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	102	0	46	100	29	53
Future Vol, veh/h	102	0	46	100	29	53
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	111	0	50	109	32	58
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	8.5	7.7	8
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	100%	35%
Vol Thru, %	32%	0%	65%
Vol Right, %	68%	0%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	146	102	82
LT Vol	0	102	29
Through Vol	46	0	53
RT Vol	100	0	0
Lane Flow Rate	159	111	89
Geometry Grp	1	1	1
Degree of Util (X)	0.172	0.143	0.11
Departure Headway (Hd)	3.893	4.658	4.43
Convergence, Y/N	Yes	Yes	Yes
Cap	925	772	812
Service Time	1.902	2.673	2.441
HCM Lane V/C Ratio	0.172	0.144	0.11
HCM Control Delay	7.7	8.5	8
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.6	0.5	0.4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	33	10	148	63	132	1	522	107	124	1495	8
Future Volume (vph)	13	33	10	148	63	132	1	522	107	124	1495	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	36	11	161	68	143	1	567	116	135	1625	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	61	0	0	372	0	1	683	0	135	1634	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		9.5	22.5	
Total Split (s)	30.0	30.0		30.0	30.0		65.0	65.0		25.0	90.0	
Total Split (%)	25.0%	25.0%		25.0%	25.0%		54.2%	54.2%		20.8%	75.0%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lead/Lag							Lead	Lead		Lag		
Lead-Lag Optimize?							Yes	Yes		Yes		
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Act Effct Green (s)		17.9			17.9		68.1	68.1		93.1	93.1	
Actuated g/C Ratio		0.15			0.15		0.57	0.57		0.78	0.78	
v/c Ratio		0.14			0.76		0.01	0.24		0.19	0.41	
Control Delay		35.8			45.2		14.0	12.7		5.4	5.2	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		35.8			45.2		14.0	12.7		5.4	5.2	
LOS		D			D		B	B		A	A	
Approach Delay		35.8			45.2			12.7			5.2	
Approach LOS		D			D			B			A	
Queue Length 50th (ft)		17			107		0	84		21	127	
Queue Length 95th (ft)		36			152		3	123		47	195	
Internal Link Dist (ft)		165			1876			177			180	
Turn Bay Length (ft)							100			100		
Base Capacity (vph)		602			651		128	2834		707	3939	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.10			0.57		0.01	0.24		0.19	0.41	

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 105 (88%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.76

Intersection Signal Delay: 12.8 — Intersection LOS: B
Intersection Capacity Utilization 59.3% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 1: N Westmoreland Road & Bickers Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	113	157	139	23	126	33	129	838	29	46	1963	288
Future Volume (vph)	113	157	139	23	126	33	129	838	29	46	1963	288
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	123	171	151	25	137	36	140	911	32	50	2134	313
Shared Lane Traffic (%)												
Lane Group Flow (vph)	123	322	0	25	173	0	140	943	0	50	2447	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	12.0	20.0		12.0	20.0		12.0	76.0		12.0	76.0	
Total Split (%)	10.0%	16.7%		10.0%	16.7%		10.0%	63.3%		10.0%	63.3%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effct Green (s)	24.9	20.4		22.2	15.5		80.5	74.5		78.0	71.5	
Actuated g/C Ratio	0.21	0.17		0.18	0.13		0.67	0.62		0.65	0.60	
v/c Ratio	0.60	1.01		0.16	0.72		0.81	0.30		0.13	0.82	
Control Delay	52.9	98.3		38.9	65.3		56.7	11.2		6.6	21.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	52.9	98.3		38.9	65.3		56.7	11.2		6.6	21.7	
LOS	D	F		D	E		E	B		A	C	
Approach Delay		85.7			61.9			17.1			21.4	
Approach LOS		F			E			B			C	
Queue Length 50th (ft)	79	~290		15	124		56	121		11	510	
Queue Length 95th (ft)	#143	#485		39	#224		#168	150		23	579	
Internal Link Dist (ft)		1979			82			109			163	
Turn Bay Length (ft)							75			75		
Base Capacity (vph)	204	319		166	240		173	3143		411	2988	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.60	1.01		0.15	0.72		0.81	0.30		0.12	0.82	

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.01

Intersection Signal Delay: 29.0 Intersection LOS: C
Intersection Capacity Utilization 87.4% ICU Level of Service E
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: N Hampton Road & Bickers Street

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	255	21	0	341	0	7	0	0	59	8	88
Future Vol, veh/h	0	255	21	0	341	0	7	0	0	59	8	88
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	92	92	92	92	50	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	277	23	0	371	0	8	0	0	64	9	96

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	371	0	0	300	0	0	479	660	150	510	671	186
Stage 1	-	-	-	-	-	-	289	289	-	371	371	-
Stage 2	-	-	-	-	-	-	190	371	-	139	300	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1184	-	-	1410	-	-	616	458	*997	*584	450	824
Stage 1	-	-	-	-	-	-	874	780	-	*622	618	-
Stage 2	-	-	-	-	-	-	794	618	-	*940	772	-
Platoon blocked, %		-	-	1	-	-	1	1	1	1	1	
Mov Cap-1 Maneuver	1184	-	-	1410	-	-	537	458	*997	*584	450	824
Mov Cap-2 Maneuver	-	-	-	-	-	-	537	458	-	*584	450	-
Stage 1	-	-	-	-	-	-	874	780	-	*622	618	-
Stage 2	-	-	-	-	-	-	692	618	-	*940	772	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	11.8	11.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	537	1184	-	-	1410	-	-	687
HCM Lane V/C Ratio	0.014	-	-	-	-	-	-	0.245
HCM Control Delay (s)	11.8	0	-	-	0	-	-	11.9
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	1

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

Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	268	50	88	307	0	81	0	81	54	11	22
Future Vol, veh/h	0	268	50	88	307	0	81	0	81	54	11	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	92	92	92	92	50	92	50	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	291	54	96	334	0	88	0	88	59	12	24

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	334	0	0	345	0	0	683	844	173	672	871	167
Stage 1	-	-	-	-	-	-	318	318	-	526	526	-
Stage 2	-	-	-	-	-	-	365	526	-	146	345	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1222	-	-	1353	-	-	429	352	*997	*437	339	848
Stage 1	-	-	-	-	-	-	838	756	-	*503	527	-
Stage 2	-	-	-	-	-	-	627	527	-	*940	735	-
Platoon blocked, %		-	-	1	-	-	1	1	1	1	1	
Mov Cap-1 Maneuver	1222	-	-	1353	-	-	378	321	*997	*372	309	848
Mov Cap-2 Maneuver	-	-	-	-	-	-	378	321	-	*372	309	-
Stage 1	-	-	-	-	-	-	838	756	-	*503	481	-
Stage 2	-	-	-	-	-	-	542	481	-	*857	735	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.9	14.6	16
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	548	1222	-	-	1353	-	-	421
HCM Lane V/C Ratio	0.321	-	-	-	0.071	-	-	0.225
HCM Control Delay (s)	14.6	0	-	-	7.9	0.2	-	16
HCM Lane LOS	B	A	-	-	A	A	-	C
HCM 95th %tile Q(veh)	1.4	0	-	-	0.2	-	-	0.9

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

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	81	611	557	121	85	92
Future Vol, veh/h	81	611	557	121	85	92
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	80	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	88	664	605	132	92	100

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	737	0	-	0	1113	369
Stage 1	-	-	-	-	671	-
Stage 2	-	-	-	-	442	-
Critical Hdwy	5.34	-	-	-	5.74	7.14
Critical Hdwy Stg 1	-	-	-	-	6.64	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	3.12	-	-	-	3.82	3.92
Pot Cap-1 Maneuver	523	-	-	-	272	536
Stage 1	-	-	-	-	382	-
Stage 2	-	-	-	-	562	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	523	-	-	-	226	536
Mov Cap-2 Maneuver	-	-	-	-	226	-
Stage 1	-	-	-	-	318	-
Stage 2	-	-	-	-	562	-

Approach	EB	WB	SB
HCM Control Delay, s	1.6	0	31.3
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	523	-	-	-	323
HCM Lane V/C Ratio	0.168	-	-	-	0.596
HCM Control Delay (s)	13.3	-	-	-	31.3
HCM Lane LOS	B	-	-	-	D
HCM 95th %tile Q(veh)	0.6	-	-	-	3.6

Intersection	
Int Delay, s/veh	1.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	112	0	41	110
Future Vol, veh/h	0	0	112	0	41	110
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	50	50	92	50	50	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	122	0	82	120

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	406	122	0	0	122	0
Stage 1	122	-	-	-	-	-
Stage 2	284	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	601	929	-	-	1465	-
Stage 1	903	-	-	-	-	-
Stage 2	764	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	565	929	-	-	1465	-
Mov Cap-2 Maneuver	565	-	-	-	-	-
Stage 1	849	-	-	-	-	-
Stage 2	764	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	3.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1465	-
HCM Lane V/C Ratio	-	-	-	0.056	-
HCM Control Delay (s)	-	-	0	7.6	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	-	0.2	-

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	112	0	5	151
Future Vol, veh/h	0	0	112	0	5	151
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	50	50	92	50	50	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	122	0	10	164

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	306	122	0	0	122	0
Stage 1	122	-	-	-	-	-
Stage 2	184	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	686	929	-	-	1465	-
Stage 1	903	-	-	-	-	-
Stage 2	848	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	681	929	-	-	1465	-
Mov Cap-2 Maneuver	681	-	-	-	-	-
Stage 1	896	-	-	-	-	-
Stage 2	848	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0.4
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1465	-
HCM Lane V/C Ratio	-	-	-	0.007	-
HCM Control Delay (s)	-	-	0	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	2.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	43	112	0	15	156
Future Vol, veh/h	0	43	112	0	15	156
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	50	50	92	50	50	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	86	122	0	30	170

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	352	122	0	0	122	0
Stage 1	122	-	-	-	-	-
Stage 2	230	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	646	929	-	-	1465	-
Stage 1	903	-	-	-	-	-
Stage 2	808	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	631	929	-	-	1465	-
Mov Cap-2 Maneuver	631	-	-	-	-	-
Stage 1	882	-	-	-	-	-
Stage 2	808	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.3	0	1.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	929	1465	-
HCM Lane V/C Ratio	-	-	0.093	0.02	-
HCM Control Delay (s)	-	-	9.3	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	51	11	77	30	65	5	883	123	86	397	2
Future Volume (vph)	17	51	11	77	30	65	5	883	123	86	397	2
Peak Hour Factor	0.92	0.40	0.92	0.92	0.50	0.92	0.92	0.92	0.75	0.92	0.92	0.92
Adj. Flow (vph)	18	128	12	84	60	71	5	960	164	93	432	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	158	0	0	215	0	5	1124	0	93	434	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		9.5	22.5	
Total Split (s)	29.0	29.0		29.0	29.0		76.0	76.0		15.0	91.0	
Total Split (%)	24.2%	24.2%		24.2%	24.2%		63.3%	63.3%		12.5%	75.8%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Act Effct Green (s)		12.5			12.5		87.2	87.2		98.5	98.5	
Actuated g/C Ratio		0.10			0.10		0.73	0.73		0.82	0.82	
v/c Ratio		0.48			0.66		0.01	0.31		0.23	0.10	
Control Delay		53.0			45.6		5.8	6.1		3.8	2.4	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		53.0			45.6		5.8	6.1		3.8	2.4	
LOS		D			D		A	A		A	A	
Approach Delay		53.0			45.6			6.1			2.6	
Approach LOS		D			D			A			A	
Queue Length 50th (ft)		59			59		1	93		11	18	
Queue Length 95th (ft)		37			40		5	138		25	32	
Internal Link Dist (ft)		165			1876			177			180	
Turn Bay Length (ft)							100			100		
Base Capacity (vph)		633			576		663	3628		448	4169	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.25			0.37		0.01	0.31		0.21	0.10	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.66

Intersection Signal Delay: 13.0 — Intersection LOS: B
Intersection Capacity Utilization 46.7% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: N Westmoreland Road & Bickers Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	74	91	20	119	20	150	1541	22	14	579	76
Future Volume (vph)	92	74	91	20	119	20	150	1541	22	14	579	76
Peak Hour Factor	0.92	0.75	0.92	0.92	0.49	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	100	99	99	22	243	22	163	1675	24	15	629	83
Shared Lane Traffic (%)												
Lane Group Flow (vph)	100	198	0	22	265	0	163	1699	0	15	712	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	15.0	15.0		15.0	15.0		15.0	75.0		15.0	75.0	
Total Split (%)	12.5%	12.5%		12.5%	12.5%		12.5%	62.5%		12.5%	62.5%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effct Green (s)	24.6	18.3		18.1	11.4		85.3	81.2		78.0	72.2	
Actuated g/C Ratio	0.20	0.15		0.15	0.10		0.71	0.68		0.65	0.60	
v/c Ratio	0.52	0.68		0.12	1.51		0.31	0.49		0.07	0.24	
Control Delay	49.4	54.5		39.6	291.0		7.1	10.6		6.1	10.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	49.4	54.5		39.6	291.0		7.1	10.6		6.1	10.9	
LOS	D	D		D	F		A	B		A	B	
Approach Delay		52.8			271.7			10.3			10.8	
Approach LOS		D			F			B			B	
Queue Length 50th (ft)	65	127		14	~296		36	184		3	83	
Queue Length 95th (ft)	116	#201		37	#192		58	293		9	109	
Internal Link Dist (ft)		1979			82			109			163	
Turn Bay Length (ft)							75			75		
Base Capacity (vph)	204	290		241	176		536	3436		277	3019	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.49	0.68		0.09	1.51		0.30	0.49		0.05	0.24	

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.51

Intersection Signal Delay: 38.0 Intersection LOS: D
Intersection Capacity Utilization 63.1% ICU Level of Service B
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: N Hampton Road & Bickers Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	33	10	148	63	132	1	549	107	124	1571	8
Future Volume (vph)	13	33	10	148	63	132	1	549	107	124	1571	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.75	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	36	11	161	84	143	1	597	116	135	1708	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	61	0	0	388	0	1	713	0	135	1717	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		9.5	22.5	
Total Split (s)	30.0	30.0		30.0	30.0		65.0	65.0		25.0	90.0	
Total Split (%)	25.0%	25.0%		25.0%	25.0%		54.2%	54.2%		20.8%	75.0%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lead/Lag							Lead	Lead		Lag		
Lead-Lag Optimize?							Yes	Yes		Yes		
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Act Effct Green (s)		19.0			19.0		67.0	67.0		92.0	92.0	
Actuated g/C Ratio		0.16			0.16		0.56	0.56		0.77	0.77	
v/c Ratio		0.13			0.77		0.01	0.26		0.20	0.44	
Control Delay		34.9			47.2		15.0	13.5		5.8	5.7	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		34.9			47.2		15.0	13.5		5.8	5.7	
LOS		C			D		B	B		A	A	
Approach Delay		34.9			47.2			13.5			5.8	
Approach LOS		C			D			B			A	
Queue Length 50th (ft)		17			118		0	91		22	145	
Queue Length 95th (ft)		35			126		4	132		49	216	
Internal Link Dist (ft)		165			1876			177			180	
Turn Bay Length (ft)							100			100		
Base Capacity (vph)		605			645		112	2790		686	3893	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.10			0.60		0.01	0.26		0.20	0.44	

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 105 (88%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.77

Intersection Signal Delay: 13.5 — Intersection LOS: B
Intersection Capacity Utilization 60.8% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 1: N Westmoreland Road & Bickers Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	113	157	139	23	126	33	129	880	29	46	2063	288
Future Volume (vph)	113	157	139	23	126	33	129	880	29	46	2063	288
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	123	171	151	25	137	36	140	957	32	50	2242	313
Shared Lane Traffic (%)												
Lane Group Flow (vph)	123	322	0	25	173	0	140	989	0	50	2555	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	12.0	20.0		12.0	20.0		12.0	76.0		12.0	76.0	
Total Split (%)	10.0%	16.7%		10.0%	16.7%		10.0%	63.3%		10.0%	63.3%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Act Effct Green (s)	24.9	20.4		22.2	15.5		80.5	74.5		78.0	71.5	
Actuated g/C Ratio	0.21	0.17		0.18	0.13		0.67	0.62		0.65	0.60	
v/c Ratio	0.60	1.01		0.16	0.72		0.81	0.31		0.13	0.85	
Control Delay	52.9	98.3		38.9	65.3		56.7	11.4		6.6	23.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	52.9	98.3		38.9	65.3		56.7	11.4		6.6	23.4	
LOS	D	F		D	E		E	B		A	C	
Approach Delay		85.7			61.9			17.0			23.1	
Approach LOS		F			E			B			C	
Queue Length 50th (ft)	79	~290		15	124		56	128		11	556	
Queue Length 95th (ft)	#143	#485		39	#224		#168	158		23	631	
Internal Link Dist (ft)		1979			82			109			163	
Turn Bay Length (ft)							75			75		
Base Capacity (vph)	204	319		166	240		173	3143		393	2990	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.60	1.01		0.15	0.72		0.81	0.31		0.13	0.85	

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.01

Intersection Signal Delay: 29.6 Intersection LOS: C
Intersection Capacity Utilization 89.3% ICU Level of Service E
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: N Hampton Road & Bickers Street