TRAFFIC IMPACT REPORT

June 11, 2024

20243889.0001

GATEWAY BUILDING DEVELOPMENT

TOWN OF HAMBURG, NY

PREPARED FOR:
3556 Lake Shore Development
Attn: Mr. Andrew Tzanides
517 Wittich Terrace
River Vale, NJ 07675

TABLE OF CONTENTS

APPENDICES

1.0 EXECUTIVE SUMMARY

The purpose of this report is to evaluate the potential traffic impacts related to the proposed Gateway Building development located at 3556 Lakeshore Road in the Town of Hamburg, NY. Within this report, the operating characteristics of the proposed access point and impacts to the adjacent roadway network are evaluated and mitigating measures are identified (if needed) to minimize operational concerns. To define traffic impact, this analysis establishes existing baseline traffic conditions, projects background traffic flow including area growth, and determines the traffic operations that would result from the proposed project.

Project Location and Description

The project site is located at 3556 Lakeshore Road in Hamburg, NY. The site is bounded by Lakeshore Road to the east, Gateway Blvd to the west and south, and single family homes along 7th St to the north. The project site is currently occupied by the existing Gateway Building. Land uses within the vicinity of the project site are generally commercial, residential, and recreational.

The proposed Gateway Building Development consists of constructing 16 five-story townhome buildings containing 8 units each with attached garages for a total of 128 townhome units. The existing seven-story building will be renovated to contain a 35-room hotel with a lobby and two restaurants on the first and second floor, ten apartments on the third, fourth, sixth, and seventh floor, and the fifth floor will contain an office, which is currently in use. Access to the site will be provided via the existing enter only, exit only, and full access driveways along Gateway Blvd, and there will be a proposed full access driveway along the southern edge of the proposed project, to the west of the exit only driveway. The overall site plan is provided at the end of this report.

Study Area

To ensure a comprehensive analysis of potential traffic impacts, a study area was selected consisting of the following two (2) intersections:

1. Gateway Blvd/Main Enter Driveway/Southtowns Office Driveway
2. Gateway Blvd/Main Exit Driveway

Existing Conditions

Turning movement traffic counts were collected by Passero Associates on Wednesday, May 29th, 2024, at the study intersection for the weekday AM and PM peak hour periods. Traffic counts were conducted between 7:00-9:00 AM for the weekday AM peak period and 4:00-6:00 PM for the weekday PM peak period. The peak hour traffic periods occurred between 7:15-8:15 AM and 4:00-5:00 PM.

Background Conditions

Background traffic volumes represent the traffic conditions during the proposed build year without development of the project. Construction of the proposed project is anticipated to reach full completion in approximately five years. The widely accepted methodology for preparing traffic impact studies requires that any projects in the study area that are currently approved and/or under construction must be considered in the traffic analysis. Projects that are contemplated but not yet approved are not included in a traffic analysis. Local municipal personnel were contacted to discuss any other specific projects that are currently approved or under construction that would generate additional traffic in the study area. No nearby projects were identified.

A review of available historical NYSDOT traffic volume data in the vicinity of the site indicates that traffic has decreased between 2010 and 2019. To account for normal increases in background traffic growth, including any unforeseen developments, a growth rate of 0.25% was applied to the existing traffic volumes for the five-year build out period.

Conclusions and Recommendations

This Traffic Impact Study identified and evaluated the potential traffic impacts that can be expected from the proposed Gateway Building development located at 3556 Lakeshore Road in the Town of Hamburg, NY. The results of this study determined that the existing transportation network can adequately accommodate the projected traffic volumes and resulting minor impacts to study area. The following sets forth the conclusions and recommendations based upon the results of the analyses:

Conclusions

1. The proposed project is expected to generate approximately 96 entering/90 exiting vehicle trips during the AM peak hour and 111 entering/140 exiting vehicle trips during the PM peak hour.

2. However, given that the office is currently in operation and that the same operations will continue once the project is complete, the proposed project is expected to generate approximately 22 entering/55 exiting new vehicle trips during the AM peak hour and 64 entering/46 exiting new vehicle trips during the PM peak hour. Based on the site generated trips for the old office land use and the projected site generated trips for the proposed project, there will be a decrease of 33 site generated trips during the AM peak hour and an increase of 35 site generated trips during the PM peak hour.

3. All movements operate at an acceptable LOS "A" under existing, projected background, and full build conditions during both peak hours studied at all study intersections.

4. No changes in level of service are anticipated during either peak hour at any of the study intersections between background and full build conditions.

5. During both the parking with special event and parking without special event parking scenarios, the anticipated parking demands can be sufficiently accommodated by the proposed parking supply.

6. The detailed analysis contained in this Traffic Impact Study demonstrates the proposed project will not result in any potentially significant adverse environmental impacts for the purpose of the environmental review of the project pursuant to the State Environmental Quality Review Act ("SEQRA").

Recommendations

7. The proposed westerly driveway along Gateway Blvd should be designed to provide one entering and one exiting lane.

2.0 INTRODUCTION

2.1 Study Purpose and Objectives

The purpose of this report is to evaluate the potential traffic impacts related to the proposed Gateway Building development located at 3556 Lakeshore Road in the Town of Hamburg, NY. Within this report, the operating characteristics of the proposed access point and impacts to the adjacent roadway network are evaluated and mitigating measures are identified (if needed) to minimize operational concerns. To define traffic impact, this analysis establishes existing baseline traffic conditions and determines the traffic operations that would result from the proposed project. All supporting calculations are included in the Appendices of this report.

2.2 Project Location

The project site is located at 3556 Lakeshore Road in Hamburg, NY. The site is bounded by Lakeshore Road to the east, Gateway Blvd to the west and south, and single family homes along 7th St to the north. The project site is currently occupied by the existing Gateway Building. Land uses within the vicinity of the project site are generally commercial, residential, and recreational.

2.3 Study Area

To ensure a comprehensive analysis of potential traffic impacts, a study area was selected consisting of the following two (2) intersections:

1. Gateway Blvd/Main Enter Driveway/Southtowns Office Driveway
2. Gateway Blvd/Main Exit Driveway

The project site location and study area are illustrated in **Figure 1** (all figures are included at the end of this report).

3.0 TRANSPORTATION SETTING

3.1 Description of Study Area Roadways

The information outlined in **Table 1** provides a description of the existing roadway network within the study area. **Figure 2** illustrates the lane geometry and traffic controls at each of the study intersections and the Annual ADT (AADT) volumes on the study roadways. The AADTs, in vehicles per day (vpd), reflect the most recently collected data obtained from the NYSDOT.

Functional classification of roadways is determined by the NYSDOT and the Federal Highway Administration (FHWA). Both the NYSDOT and FHWA groups roads, streets, and highways into different classes based on how they are used. This is called functional classification. Roads and streets do not work alone to move traffic. Instead, they form a network. Functional classification defines how each road or street fits into this network, how it provides access to nearby properties, and whether it is in an urban or rural area.

In the study area, all the roadways are classified as rural. The primary functional classifications within the study area:

- Urban Local (Class 19)

Table 1: *Existing Highway System*

ROADWAY	CLASS[1]	AGENCY[2]	SPEED LIMIT	TYPICAL CROSS SECTION[3]	AADT
Gateway Blvd	19	City of Buffalo	30 mph	2-lane undivided	1,253 PASSERO (2024)

Notes:
1. Functional Classification.
2. Roadway ownership.
3. Excludes turning lanes at intersections.

3.2 Description of Multimodal Network

The following summarizes the traffic controls, pedestrian, bicycle, and transit accommodations for the study area intersections. **Figure 2** also illustrates the turn lane lengths and traffic controls at the study intersections.

Table 2: *Multimodal Network*

INTERSECTION	TRAFFIC CONTROL	PEDESTRIAN			BICYCLE		TRANSIT
		SIDEWALK	CROSSWALK	PED SIGNAL	LANE	OTHER	
Gateway Blvd/Main Enter Driveway/ Southtowns Office Driveway	Sign	Some presence	No	No	No	No shoulder	No stops
Gateway Blvd/Main Exit Driveway	Sign	Some presence	No	No	No	No shoulder	No stops

3.3 Planned/Programmed Highway Improvements

There are no planned/programmed highway improvement projects in the study area.

4.0 EXISTING CONDITIONS ANALYSIS

4.1 Peak Intervals for Analysis

Given the functional characteristics of the corridors, adjacent land uses, and the proposed land use for the project site, the peak hours selected for analysis are the weekday AM and weekday PM peak periods. The combination of site traffic and adjacent through traffic produces the greatest demand during these time periods.

4.2 Existing Traffic Volume Data

Turning movement traffic counts were collected by Passero Associates on Wednesday, May 29th, 2024, at the study intersection for the weekday AM and PM peak hour periods. Traffic counts were conducted between 7:00-9:00 AM for the weekday AM peak period and 4:00-6:00 PM for the weekday PM peak period. The peak hour traffic periods occurred between 7:15-8:15 AM and 4:00-5:00 PM. The existing peak hour traffic volumes are shown in **Figure 3**.

All turning movement count data was collected on a typical weekday while local schools were in session. No adverse weather conditions impacted the traffic counts. The traffic volumes were reviewed for seasonality and to confirm the accuracy.

4.3 Field Observations

The study intersections were observed during peak intervals to assess current traffic operations. This information was used to support and/or calibrate capacity analysis models described in detail later in this report.

5.0 BACKGROUND (NO BUILD) CONDITIONS

Background traffic volumes represent the traffic conditions during the proposed build year without development of the project. Construction of the proposed project is anticipated to reach full completion in approximately five years. The widely accepted methodology for preparing traffic impact studies requires that any projects in the study area that are currently approved and/or under construction must be considered in the traffic analysis. Projects that are contemplated but not yet approved are not included in a traffic analysis. Local municipal personnel were contacted to discuss any other specific projects that are currently approved or under construction that would generate additional traffic in the study area. No nearby projects were identified.

A review of available historical NYSDOT traffic volume data in the vicinity of the site indicates that traffic has decreased between 2010 and 2019. To account for normal increases in background traffic growth, including any unforeseen developments, a growth rate of 0.25% was applied to the existing traffic volumes for the five-year build out period. **Figure 4** depicts the background traffic volumes.

6.0 PROPOSED DEVELOPMENT CONDITIONS

6.1 Project Description

The proposed Gateway Building Development consists of constructing 16 five-story townhome buildings containing 8 units each with attached garages for a total of 128 townhome units. The existing seven-story building will be renovated to contain a 35-room hotel with a lobby and two restaurants on the first and second floor, ten apartments on the third, fourth, sixth, and seventh floor, and the fifth floor will contain an office, which is currently in use. Access to the site will be provided via the existing enter only, exit only, and full access driveways along Gateway Blvd, and there will be a proposed full access driveway along the southern edge of the proposed project, to the west of the exit only driveway. The overall site plan is provided at the end of this report. The overall site plan is provided at the end of this report.

6.2 Proposed Traffic Generation

The volume of traffic generated by a site is dependent on the intended land use and size of the development. Trip generation is an estimate of the number of trips generated by a specific building or land use. These trips represent the volume of traffic entering and exiting the development. *Trip Generation Manual (11th Edition)* published by the Institute of Transportation Engineers (ITE) is used as a reference for this information. The trip rate for the peak hour of the generator may or may not coincide in time or volume with the trip rate for the peak hour of adjacent street traffic. Volumes generated during the peak hour of the adjacent street traffic and proposed land use, in this case, the weekday AM and PM peak hours, represents a more critical volume when analyzing the capacity of the system; that interval will provide the basis of this analysis.

According to the ITE, the following steps are recommended when determining trip generation for proposed land uses:

i. Check for the availability of local trip generation rates for comparable uses.

ii. If local trip data for similar developments are not available and time and funding permit, conduct trip generation studies at sites with characteristics similar to those of the proposed development.

Traffic volume data was collected by Passero Associates at the existing Gateway Building driveways located at 3556 Lakeshore Road, Hamburg, NY. Traffic entering and exiting the driveways on the existing site was counted on Wednesday, May 29th, 2024, for the AM and PM peak hour periods. The driveway peak hour site trips documented at the existing Gateway Building driveways are an appropriate comparison of the office trips for the proposed project considering that there will be no change to the office space with the proposed project. All trip generation information has been included in the Appendices.

Table 3 shows the total site generated trips for the weekday AM and PM peak hours for the proposed development. **Table 3** also shows the total site generated trips for the development under its original land use as an office and compares those site generated trips to the proposed project's site generated trips. All trip generation information has been included in the Attachments.

Table 3: *Site Generated Trips*

DESCRIPTION	ITE LUC[1]	SIZE	AM PEAK HOUR		PM PEAK HOUR	
			ENTER	EXIT	ENTER	EXIT
Hotel	310	±35 Rooms	6	4	11	10
Multifamily Housing (Mid-Rise)	221	±40 Units	1	5	10	6
Single-Family Attached Housing	215	±128 Units	15	46	43	30
Office[2]	Local Data	±13,000 SF	74	35	47	94
Total Site Generated Trips			**96**	**90**	**111**	**140**
Total New Site Generated Trips			**22**	**55**	**64**	**46**
Office	710	±137,000 SF	193	26	37	179
Difference In Site Generated Trips			**-97**	**+64**	**+74**	**-39**

Note:
1. LUC = Land Use Code.
2. Trips for the office land use are existing and are not new trips generated by the project

The proposed project is expected to generate approximately 96 entering/90 exiting vehicle trips during the AM peak hour and 111 entering/140 exiting vehicle trips during the PM peak hour. However, given that the office is currently in operation and that the same operations will continue once the project is complete, the proposed project is expected to generate approximately 22 entering/55 exiting new vehicle trips during the AM peak hour and 64 entering/46 exiting new vehicle trips during the PM peak hour. Based on the site generated trips for the old office land use and the projected site generated trips for the proposed project, there will be a decrease of 33 site generated trips during the AM peak hour and an increase of 35 site generated trips during the PM peak hour.

6.3 Trip Distribution

The cumulative effect of site-generated traffic on the transportation network is dependent on the origins and destinations of that traffic and the location of the access drives serving the site. The proposed arrival/departure distribution of traffic generated by the proposed project is considered a function of several parameters, including:

- Residential and employment centers using U.S. Census Data
- Nearby commercial centers

- Proximity to local schools
- Site driveway locations
- Existing traffic patterns
- Existing traffic conditions and controls

Figure 5 shows the anticipated trip distribution pattern percentage for the project site. **Figure 6** shows the total site generated trips based on the distribution patterns.

6.4 Full Development Volumes

The proposed design hour traffic volumes are developed for the peak hours by combining the background traffic conditions (**Figure 4**) and the new site-generated traffic volumes (**Figure 6**) to yield the traffic volumes under full development conditions. **Figure 7** illustrates the full build traffic conditions.

7.0 TRAFFIC OPERATIONS AND ANALYSIS

7.1 Description of Capacity Analysis

Capacity analysis is a technique used for determining a measure of effectiveness for a section of roadway and/or intersection based on the number of vehicles during a specific time period. The measure of effectiveness used for the capacity analysis is referred to as a Level of Service (LOS). Levels of service are calculated to provide an indication of the amount of delay that a motorist experiences while traveling along a roadway or through an intersection. Since the most amount of delay to motorists usually occurs at intersections, capacity analysis focuses on intersections, as opposed to highway segments.

The standard procedure for capacity analysis of signalized and unsignalized intersections is outlined in the *Highway Capacity Manual (HCM) 7th Edition* published by the TRB. Traffic analysis software, Synchro 12, which is based on procedures and methodologies contained in the HCM, was used to analyze operating conditions at study area intersections. The procedure yields a level of service based on the HCM as an indicator of how well intersections operate.

Six levels of service are defined for analysis purposes. They are assigned letter designations, from "A" to "F", with LOS "A" representing the conditions with little to no delay, and LOS "F" conditions with very long delays. LOS “C” or better is desirable, but LOS “D” for signalized locations and LOS “E” for unsignalized locations are generally thresholds of acceptable operation during peak periods so long as the volume to capacity ratio (v/c) is below 1.0. **Table 4** depicts level of service criteria for both signalized and unsignalized intersections.

Table 4: *Level of Service Criteria*

LEVEL OF SERVICE	SIGNALIZED CONTROL DELAY PER VEHICLE (seconds)	STOP CONTROL DELAY PER VEHICLE (seconds)
A	< 10	< 10
B	10 – 20	10 – 15
C	20 – 35	15 – 25
D	35 – 55	25 – 35
E	55 – 80	35 – 50
F	> 80	> 50

LOS for signalized intersections is defined in terms of delay specifically, average total delay per vehicle for a 15-minute analysis period. LOS for unsignalized intersections, however, are different from a signalized intersection. The primary reason for this is driver expectation that a signalized intersection is designed to carry higher volumes than an unsignalized intersection. Unsignalized intersections are also associated with more uncertainty for users, as delays are less predictable than they are at signals.

The v/c ratio, also referred to as degree of saturation, represents the sufficiency of an intersection to accommodate the vehicular demand. A v/c ratio less than 0.85 generally indicates that adequate capacity is available, and vehicles are not expected to experience significant queues and delays. As the v/c ratio approaches 1.0, traffic flow may become unstable, and delay and queuing conditions may occur.

7.2 Capacity Analysis Results

Existing and background operating conditions during the peak study periods are evaluated to determine a basis for comparison with the projected future conditions. Future traffic conditions generated by the project are analyzed to assess the operation of the study area intersections. **Table 5** describes the capacity results for existing, background, and full development conditions. The discussion following the table summarizes capacity conditions.

TABLE 5: CAPACITY ANALYSIS RESULTS

INTERSECTION	2024 EXISTING BASE CONDITIONS				2029 BACKGROUND CONDITIONS				2029 FULL BUILD CONDITIONS			
	AM		PM		AM		PM		AM		PM	
2. Gateway Blvd/Proposed Driveway (U)												
SB - Proposed Drivway	N/A		N/A		N/A		N/A		A	8.8	A	8.9
3. Gateway Blvd/Exiting Driveway (U)												
SB - Exiting Driveway	A	8.9	A	9.3	A	8.9	A	9.3	A	9.3	A	9.8
4. Gateway Blvd/Entering Driveway/Southtowns Driveway (U)												
EB Left - Gateway Blvd	A	0.0	A	7.3	A	0.0	A	7.3	A	0.0	A	7.5
WB Left - Gateway Blvd	A	7.6	A	7.8	A	7.6	A	7.8	A	7.8	A	8.0
NB - Southtowns Driveway	A	8.7	A	9.1	A	8.7	A	9.1	A	9.1	A	9.5

Notes:

1. A(2.8) = Level of Service (Delay in seconds per vehicle)
2. NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound
3. (S) = Signalized; (U) = Unsignalized
4. N/A = Approach does not exist and/or was not analyzed during this condition
5. Green shaded cells indicate low delays, yellow shaded cells indicate moderate delays, red shaded cells indicate long delays.

Gateway Blvd/Proposed Westerly Driveway

All approaches operate at LOS "A" under full development conditions during both peak hours. No improvements are warranted nor recommended at this location. The proposed driveway should consist of one entering and one exiting lane.

Gateway Blvd/Exiting Driveway

The southbound approach operates at LOS "A" under all conditions during both peak hours. No changes in level of service are anticipated and no improvements are warranted nor recommended at this location.

Gateway Blvd/Entering Driveway/Southtowns Driveway

All approaches operate at LOS "A" under all conditions during both peak hours. No changes in level of service are anticipated and no improvements are warranted nor recommended at this location.

8.0 SHARED PARKING EVALUATION

Shared parking studies are conducted to establish the total number of spaces necessary by mixed-use developments to effectively serve expected parking demands. The shared parking concept builds upon the premise that land uses in a mixed-use development often do not share the same peak demand period, so spaces can be shared between the different land uses during different peak periods.

Each land use typically has a peak demand period where it would occupy the maximum number of spaces that the use requires and an off-peak period where a lesser percentage of the maximum spaces would be occupied; be it by time of day, day of week, or even month of the year. This allows for the project to provide fewer spaces than would be required if the land uses on a project site were to be treated separately with individual parking demands. The concept of shared parking is well recognized within the real estate and regulatory community and is proven to work.

To estimate the number of parking spaces required for the proposed project, this assessment used the ULI methodology for shared parking. This methodology is utilized by transportation engineers and planners when evaluating the parking demand for a mixed-use project. The ULI *Shared Parking (3rd Edition)* includes state-of-the-art practice methodologies for determining parking demand in these types of projects.

Accompanying the publication is an interactive Shared Parking Calculation Model (Model) that is used to estimate the shared parking demand. The Model requires a user to input the number of units associated with each proposed land use. Within the Model, 32 land uses are identified – some of which are subdivided into more refined categories – with 44 different recommended base parking ratios based on suburban locations with little or no transit. Data contained within the Model is from a combination of ULI surveys and the ITE *Parking Generation Manual*. Outputs consist of a summary table describing the base parking demand and shared parking reduction; a monthly demand comparison; weekday and weekend demand by month; and weekday and weekend demand by hour.

Two parking scenarios were developed. One scenario (Scenario 1) assessed the site on a typical day without a special event. The second scenario (Scenario 2) assessed the site should a special event occur, such as a banquet or convention.

The proposed parking supply is 966 spaces. This study accounts for the garage spaces associated with the residential units and removes them from shared parking considerations.

- 16 indoor spaces
- 256 garage spaces

- 694 open spaces

Scenario 1

The peak hour demand, respective to weekday, weekend, and seasonal demands, is projected to occur at 10:00 AM on a March weekday. The projected peak hour demand for full build-out of the site (i.e., the busiest hour of the busiest weekday or weekend of the year) is ±339 spaces. Parking demand accumulations for the peak weekday and weekend periods are presented in **Table 6** on the following page.

Table 6: *Shared Parking Demand without Special Event*

Land Use	Size	Weekday		Weekend	
		Max Demand	Shared Demand	Max Demand	Shared Demand
Residential	168 units	296	273	305	302
Office	13,000 SF	50	49	6	0
Hotel	35 keys	40	17	40	18
Total Parking Demands		**386**	**339**	**351**	**320**

Weekday shared demand occurs in March at 10:00 AM.
Weekend shared demand occurs in March at 10:00 PM.

Scenario 2

The peak hour demand, respective to weekday, weekend, and seasonal demands, is projected to occur at 10:00 AM on a February weekday. The projected peak hour demand for full build-out of the site (i.e., the busiest hour of the busiest weekday or weekend of the year) is ±765 spaces. Parking demand accumulations for the peak weekday and weekend periods are presented in **Table 7**.

Table 7: *Shared Parking Demand with Special Event*

Land Use	Size	Weekday		Weekend	
		Max Demand	Shared Demand	Max Demand	Shared Demand
Residential	168 units	296	273	305	277
Office	13,000 SF	50	49	6	6
Hotel	35 keys	40	16	40	16
Special Event	72,000 SF	432	427	432	427
Total Parking Demands		**818**	**765**	**783**	**726**

Weekday shared demand occurs in February at 10:00 AM.
Weekend shared demand occurs in February at 11:00 AM.

During both parking scenarios, the anticipated parking demands can be sufficiently accommodated by the proposed parking supply.

9.0 CONCLUSIONS AND RECOMMENDATIONS

This Traffic Impact Study identified and evaluated the potential traffic impacts that can be expected from the proposed Gateway Building development located at 3556 Lakeshore Road in the Town of Hamburg, NY. The results of this study determined that the existing transportation network can adequately accommodate the projected traffic volumes and resulting minor impacts to study area. The following sets forth the conclusions and recommendations based upon the results of the analyses:

Conclusions

1. The proposed project is expected to generate approximately 96 entering/90 exiting vehicle trips during the AM peak hour and 111 entering/140 exiting vehicle trips during the PM peak hour.

2. However, given that the office is currently in operation and that the same operations will continue once the project is complete, the proposed project is expected to generate approximately 22 entering/55 exiting new vehicle trips during the AM peak hour and 64 entering/46 exiting new vehicle trips during the PM peak hour. Based on the site generated trips for the old office land use and the projected site generated trips for the proposed project, there will be a decrease of 33 site generated trips during the AM peak hour and an increase of 35 site generated trips during the PM peak hour.

3. All movements operate at an acceptable LOS "A" under existing, projected background, and full build conditions during both peak hours studied at all study intersections.

4. No changes in level of service are anticipated during either peak hour at any of the study intersections between background and full build conditions.

5. During both the parking with special event and parking without special event parking scenarios, the anticipated parking demands can be sufficiently accommodated by the proposed parking supply.

6. The detailed analysis contained in this Traffic Impact Study demonstrates the proposed project will not result in any potentially significant adverse environmental impacts for the purpose of the environmental review of the project pursuant to the State Environmental Quality Review Act ("SEQRA").

Recommendations

7. The proposed westerly driveway along Gateway Blvd should be designed to provide one entering and one exiting lane.

10.0 REFERENCES

- Synchro 12 Software. Cubic ITS. 2023.
- Highway Capacity Manual (7th Edition). Transportation Research Board (TRB). Washington, DC. 2022.
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- OnTheMap. US Census Bureau. 2023.
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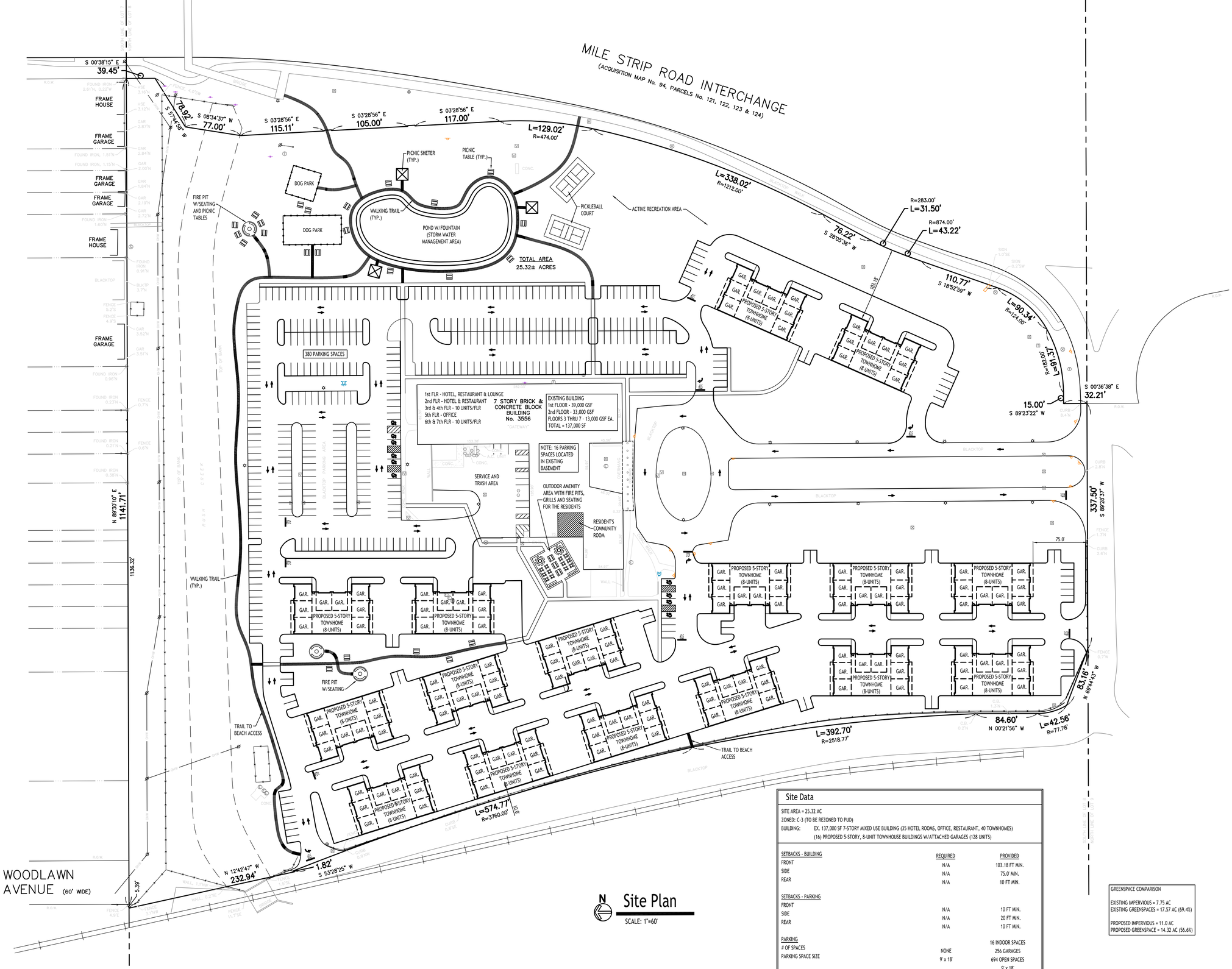
- Parking Generation Manual (6th Edition). Institute of Transportation Engineers (ITE). 2023.
- Shared Parking Model (3rd Edition). Urban Land Institute (ULI). 2020.

11.0 FIGURES

Figures 1 through 7 are included on the following pages.



N

Site Plan

SCALE: 1"=60'

Site Data

SITE AREA = 25.32 AC
ZONED: C-3 (TO BE REZONED TO PUD)
BUILDING: EX. 137,000 SF 7-STORY MIXED USE BUILDING (35 HOTEL ROOMS, OFFICE, RESTAURANT, 40 TOWNHOMES)
(16) PROPOSED 5-STORY, 8-UNIT TOWNHOUSE BUILDINGS W/ATTACHED GARAGES (128 UNITS)

	REQUIRED	PROVIDED
SETBACKS - BUILDING		
FRONT	N/A	103.18 FT MIN.
SIDE	N/A	75.0' MIN.
REAR	N/A	10 FT MIN.
SETBACKS - PARKING		
FRONT	N/A	10 FT MIN.
SIDE	N/A	20 FT MIN.
REAR	N/A	10 FT MIN.
PARKING		16 INDOOR SPACES
# OF SPACES	NONE	256 GARAGES
PARKING SPACE SIZE	9' x 18'	694 OPEN SPACES 9' x 18'
MAX. BUILDING HEIGHT	65 FT	60 FT
LANDSCAPING		
OVERALL SITE	N/A	13.42 AC (53.0%)

* INCLUDES PARKING SPACE IN FRONT OF GARAGE

GREENSPACE COMPARISON

EXISTING IMPERVIOUS = 7.75 AC
EXISTING GREENSPACES = 17.57 AC (69.4%)

PROPOSED IMPERVIOUS = 11.0 AC
PROPOSED GREENSPACE = 14.32 AC (56.6%)

NOTE: BOUNDARY AND TOPOGRAPHIC INFORMATION PROVIDED BY OTHERS, CARMINA WOOD DESIGN ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

60' 60 0 60 120Ft.

CARMINAWOOD DESIGN
Buffalo | Utica | Greensboro

Proposed Townhomes

3556 Lake Shore Road
Hamburg, New York

REVISIONS:

No.	Description	Date

PRELIMINARY
NOT FOR CONSTRUCTION

DRAWING NAME:
Site Plan Concept

Date: 05.20.24
Drawn By: C. Wood
Scale: As Noted

DRAWING NO.
C-100

Project No: 24-4xxx

Figure 1

PASSERO engineering architecture

Gateway Building Development | Town of Hamburg, Erie County, NY

0 300 600 1,200 Feet N

Site Location and Study Area

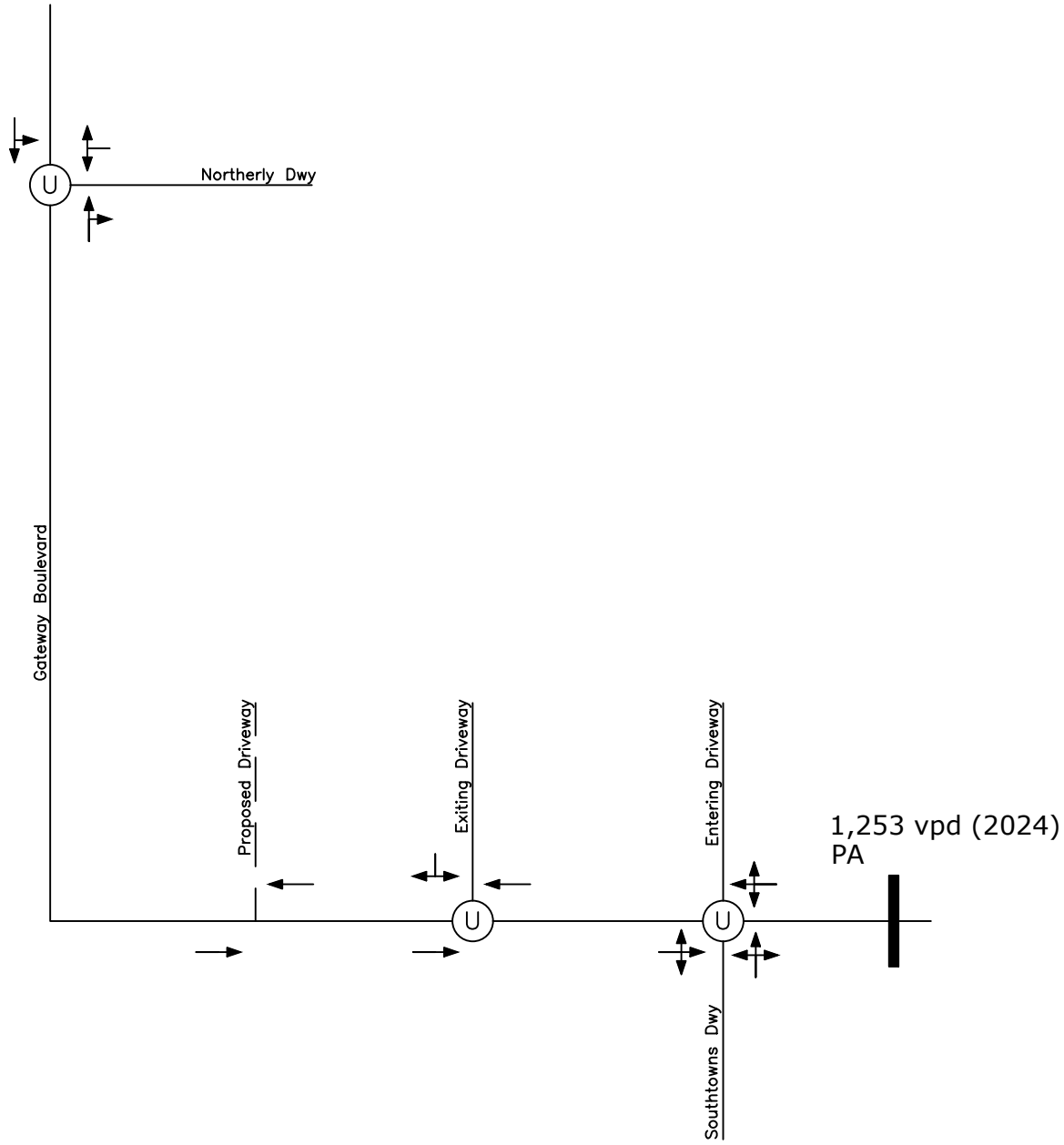
Key:
- # Study Intersection
- # Study/Proposed Intersection
- Study Area

Project Number: 20243889.0001

Figure 2

PASSERO engineering architecture

Notes:
1. All AADT volumes by those noted:
   1.1. NYSDOT = New York State Department of Transportation.
   1.2. PA = Passero Associates.
2. vpd = Vehicles per day.
3. Turn lane lengths shown include only storage.



N
NOT TO SCALE

Gateway Building Development, Town of Hamburg, NY

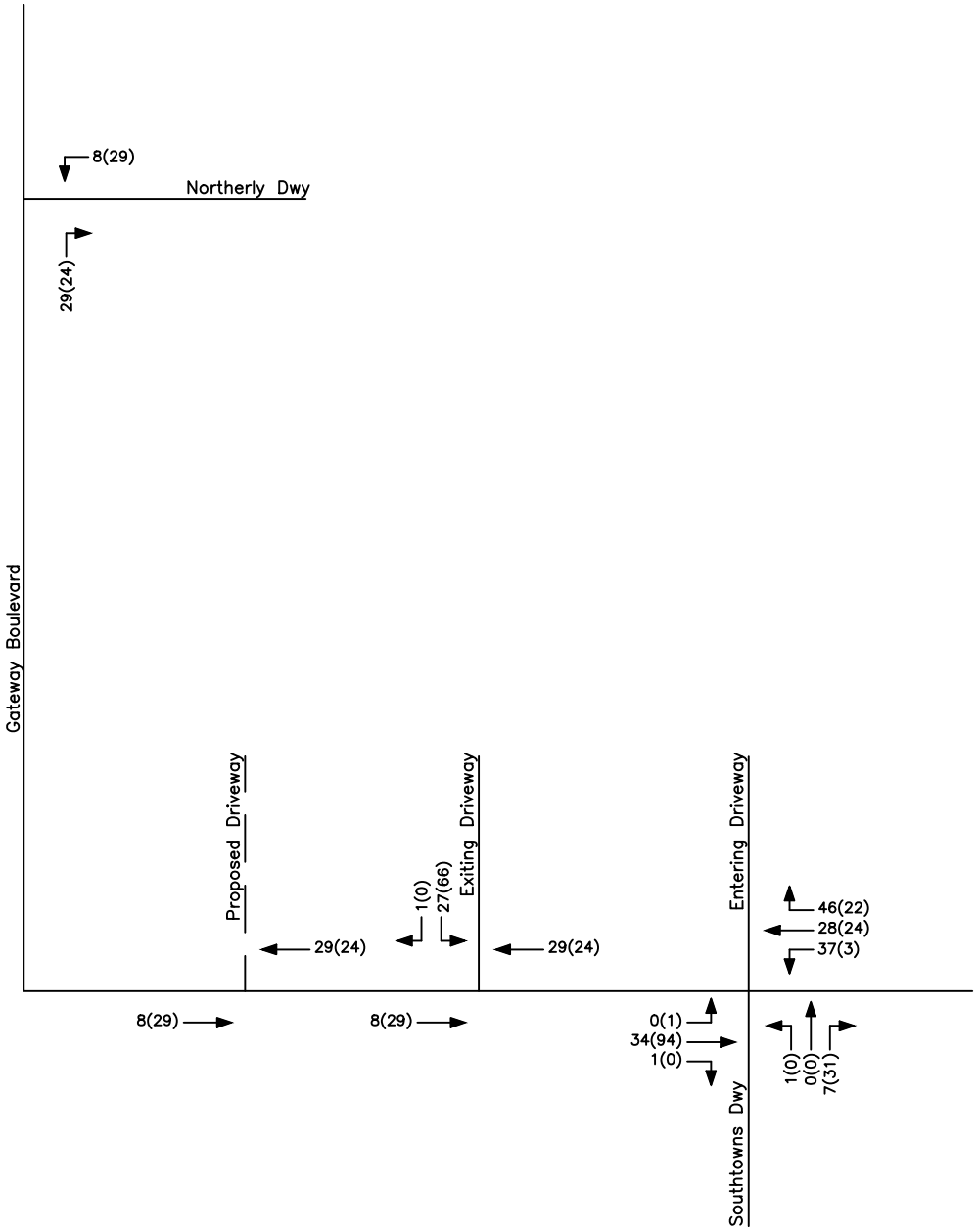
Lane Geometry and Average Daily Traffic

KEY:
U = Unsignalized
S = Signalized

Project Number: 20243889.0001

Figure 3

PASSERO engineering architecture



N
NOT TO SCALE

Gateway Building Development, Town of Hamburg, NY

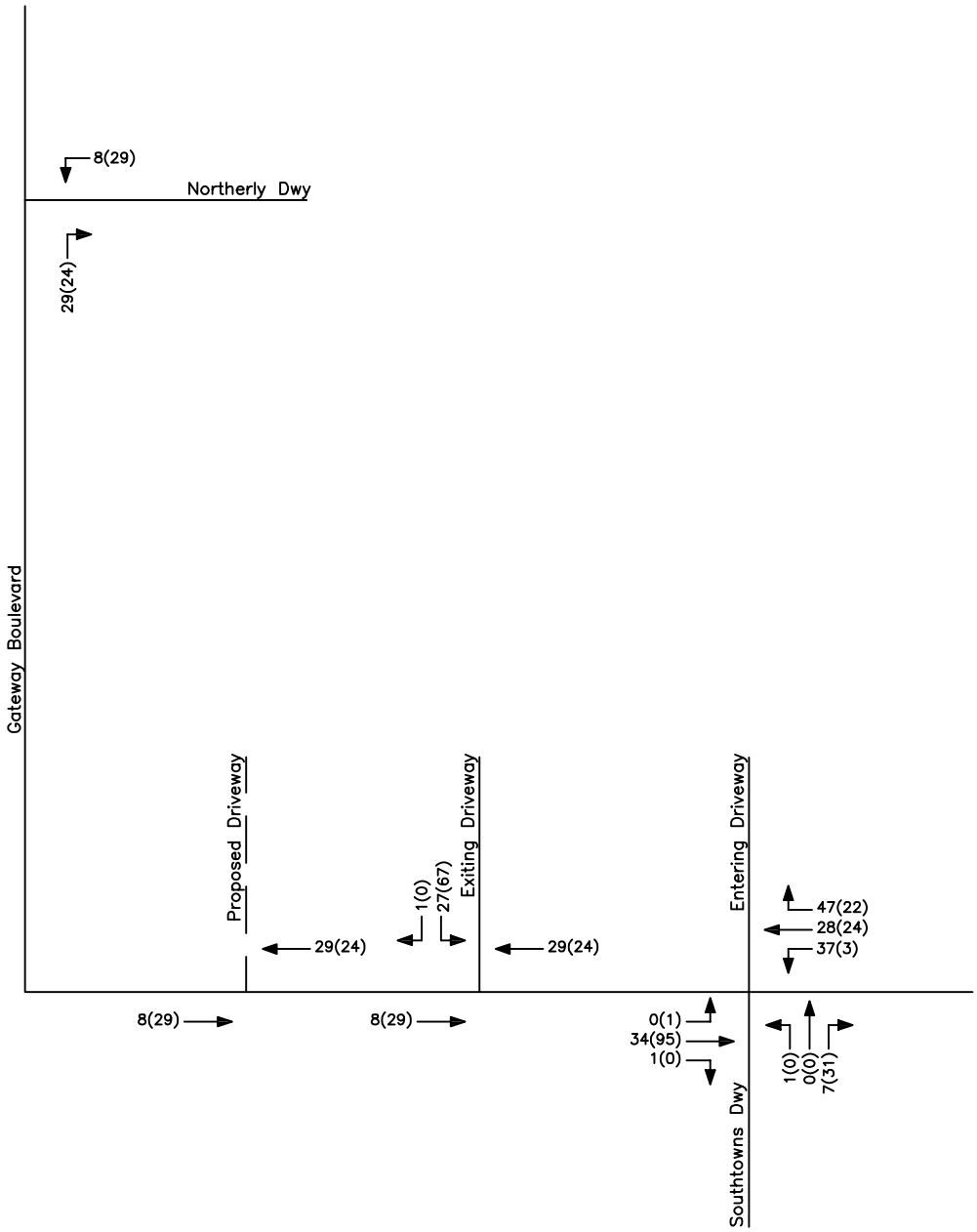
Peak Hour Volumes
Existing Conditions

KEY:
00(00) = AM(PM)

Project Number: 20243889.0001

Figure 4

PASSERO engineering architecture



Gateway Building Development, Town of Hamburg, NY

N
NOT TO SCALE

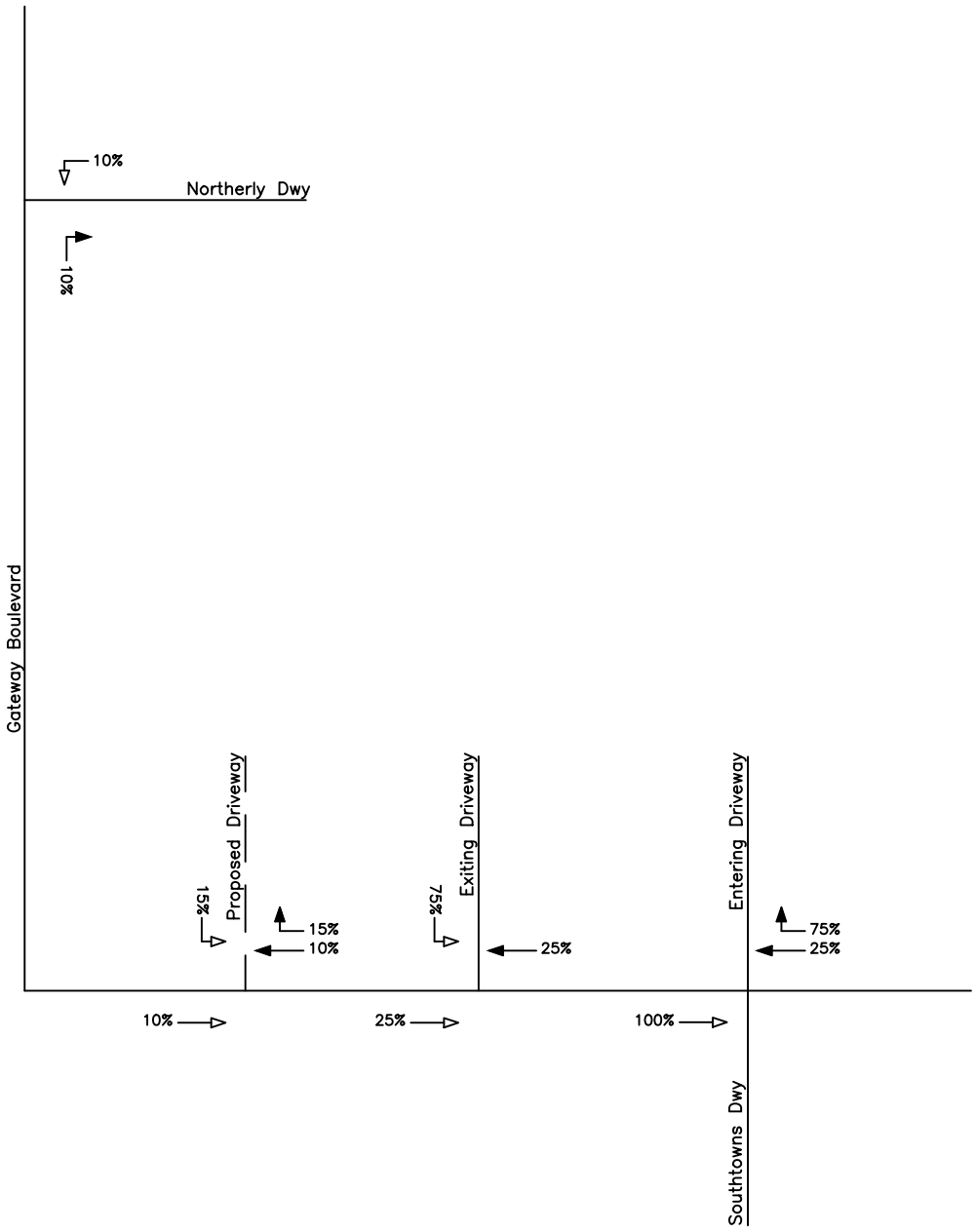
Peak Hour Volumes
2029 Background Conditions

KEY:
00(00) = AM(PM)

Project Number: 20243889.0001

Figure 5

PASSERO engineering architecture



N
NOT TO SCALE

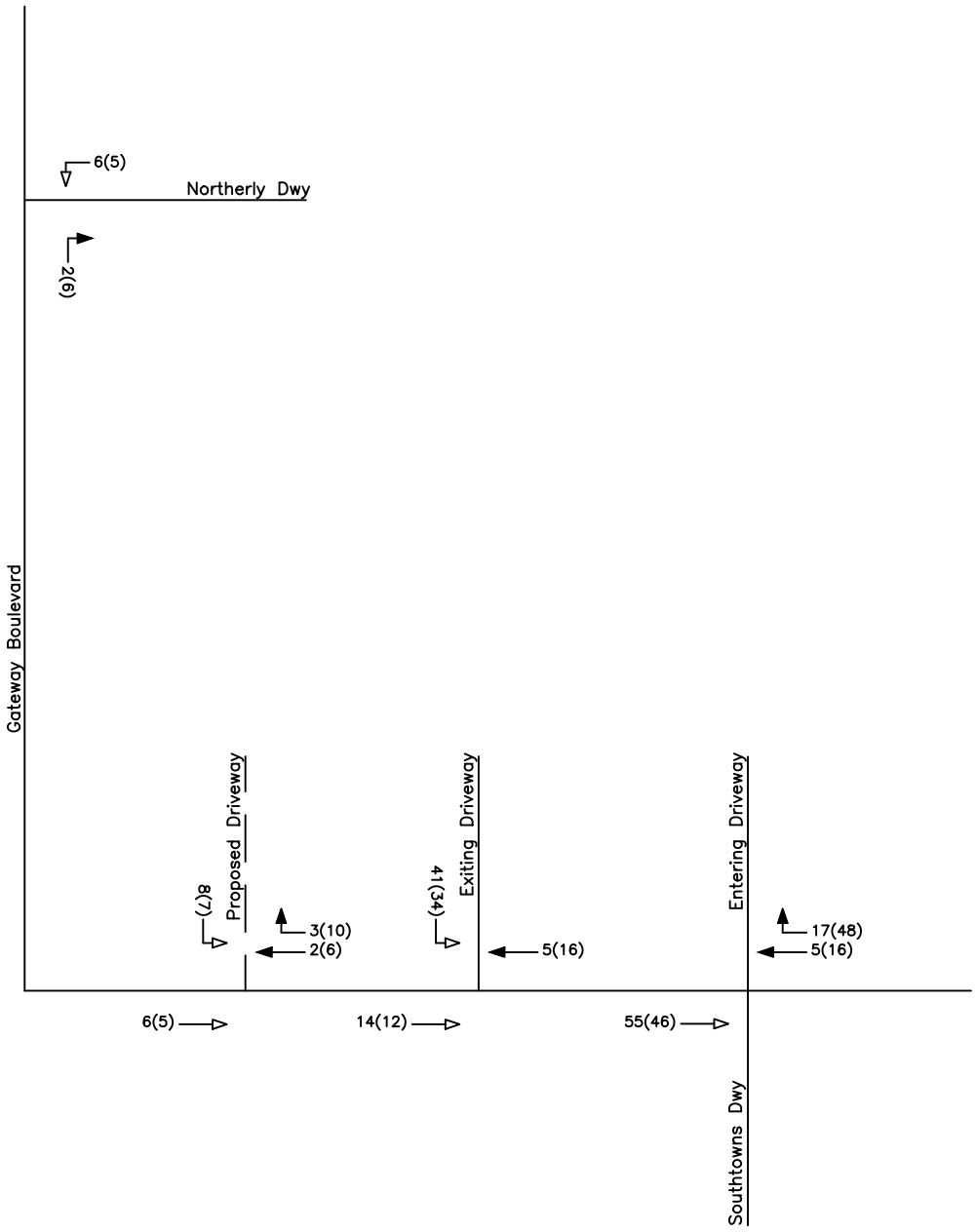
Gateway Building Development, Town of Hamburg, NY

Trip Distribution

KEY:
00(00) = AM(PM)
Entering Trip
Exiting Trip

Project Number: 20243889.0001

Figure 6



N
NOT TO SCALE

Gateway Building Development, Town of Hamburg, NY

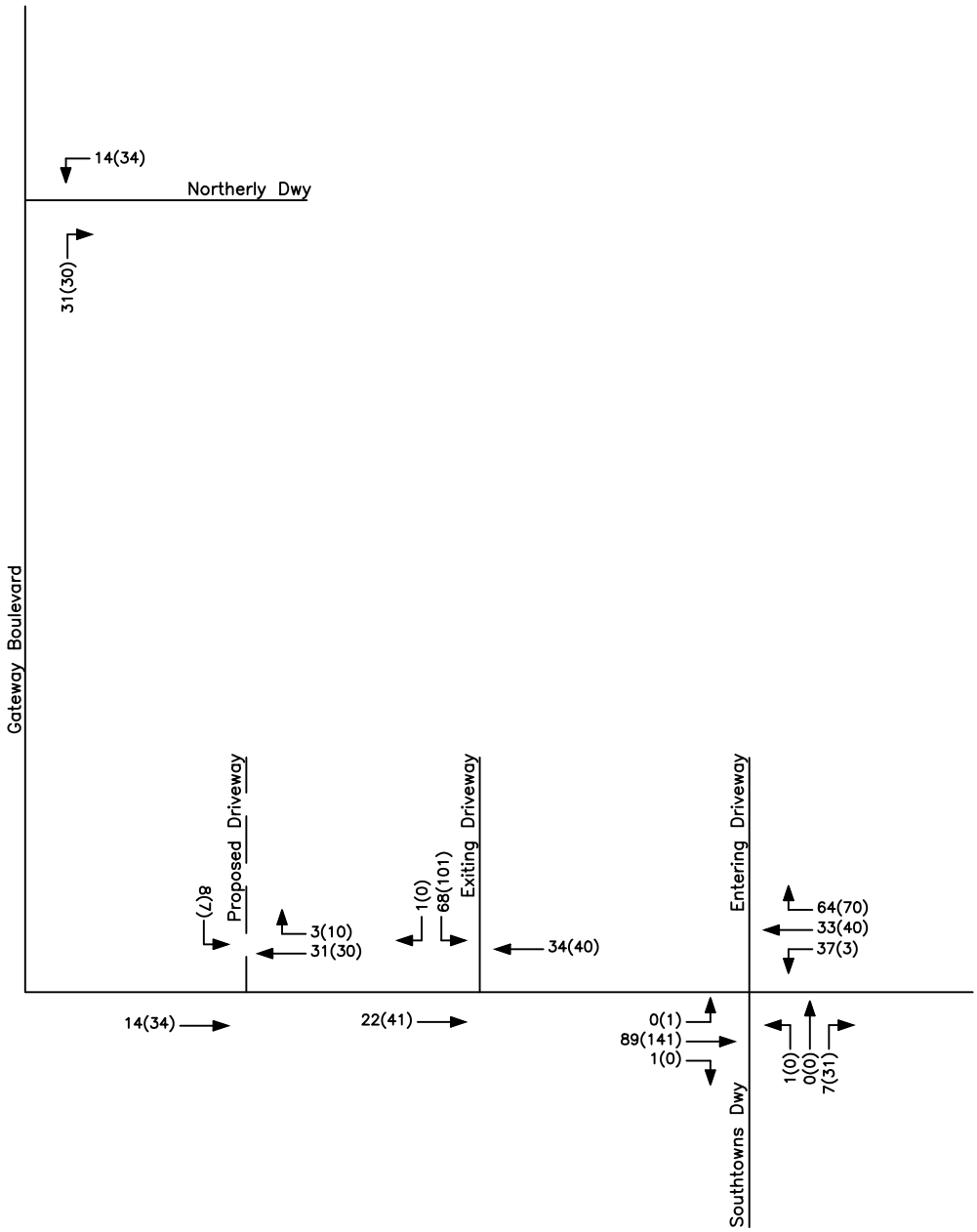
Site Generated Trips

KEY:
00(00) = AM(PM)
→ Entering Trip
⇨ Exiting Trip

Project Number: 20243889.0001

Figure 7

PASSERO engineering architecture



Gateway Building Development, Town of Hamburg, NY

N
NOT TO SCALE

Peak Hour Volumes
Full Build Conditions

KEY:
00(00) = AM(PM)

Project Number: 20243889.0001

APPENDICES

APPENDIX A: EXISTING TRAFFIC COUNT DATA

Passero Associates

Project: Gateway Building *#20243889.0001* **Reviewer:** *DBD*

Location:	**5/29/2024**	**SB (from North)**			**WB (from East)**			**NB (from South)**			**EB (from West)**					
VEHICLES	***weekday AM***	***EC Office driveway (south leg)***			***Gateway Blvd (west leg)***			***Gateway Driveways (north leg)***			***Gateway Blvd (east leg)***					
Gateway Building Driveways		***RT***	***Thru***	***LT***	***RT***	***Thru***	***LT***	***RT***	***Thru***	***LT***	***RT***	***Thru***	***LT***			
	0700-0715	0		5	9	1	4	0	0	0	0	0	0		**19**	
1 car SB Thru via grass	0715-0730	0	1	6	18	10	8	0	0	0	0	3	0		**46**	
VEHICLES	0730-0745	0		10	14	9	13	2	0	0	0	2	0		**50**	
	0745-0800	1		6	9	6	11	3	0	0	0	1	0		**37**	152
1 utility vehicle NB LT via grass	0800-0815	0		4	5	3	5	2	0	1	0	2	0		**22**	**155**
	0815-0830	0		0	3	4	4	3	0	0	0	1	0		**15**	124
	0830-0845	0		3	5	1	1	0	0	0	0	0	0		**10**	84
	0845-0900	0		5	5	8	1	2	0	0	0	0	0	**PHF**	**21**	68
	Peak Hour (7:15-8:15)	**1**	**1**	**26**	**46**	**28**	**37**	**7**	**0**	**1**	**0**	**8**	**0**	**0.78**		
Bicycles in Yellow		0%	0%	8%	4%	0%	24%	0%	#DIV/0!	0%	#DIV/0!	0%	#DIV/0!			

Location:	**5/29/2024**	**SB (from North)**			**WB (from East)**			**NB (from South)**			**EB (from West)**					
	weekday PM	***EC Office driveway (south leg)***			***Gateway Blvd (west leg)***			***Gateway Driveways (north leg)***			***Gateway Blvd (east leg)***					
Gateway Building Driveways		***RT***	***Thru***	***LT***	***RT***	***Thru***	***LT***	***RT***	***Thru***	***LT***	***RT***	***Thru***	***LT***			
	1600-1615	0		21	6	5	1	20	0	0	0	7	0		**60**	
	1615-1630	0		15	10	8	0	0	0	0	0	7	1		**41**	
1 Bike EB Thru (south shoulder)	1630-1645	0		22	4	7	2	9	0	0	0	8	0		**52**	
1 Bike WB south shoulder crossed NW to north shoulder in inters.	1645-1700	0		8	2	4	0	2	0	0	0	6	0		**22**	**175**
	1700-1715	0		6	1	2	1	3	0	0	0	3	0		**16**	131
	1715-1730	0		3	1	1	0	1	0	0	0	0	0		**6**	96
	1730-1745	0		0	1	1	0	2	0	0	0	2	0		**6**	50
1 utility vehicle NB LT via grass	1745-1800	0		3	1	3	0	0	0	0	0	3	0	**PHF**	**10**	38
	Peak Hour (16:00-17:00)	**0**	**0**	**66**	**22**	**24**	**3**	**31**	**0**	**0**	**0**	**28**	**1**	**0.73**		
Bicycles (B) in Yellow		#DIV/0!	#DIV/0!	2%	0%	4%	33%	3%	#DIV/0!	#DIV/0!	#DIV/0!	7%	0%			

Passero Associates

Project: Gateway Building *#20243889.0001* **Reviewer:** *DBD*

Location:	**5/29/2024**	**SB (from North)**			**WB (from East)**			**NB (from South)**			**EB (from West)**			
	weekday PM	***EC Office driveway (south leg)***			***Gateway Blvd (west leg)***			***Gateway Driveways (north leg)***			***Gateway Blvd (east leg)***			
Gateway Building Driveways		***RT***	***Thru***	***LT***	***RT***	***Thru***	***LT***	***RT***	***Thru***	***LT***	***RT***	***Thru***	***LT***	
	0700-0715						1							1
	0715-0730			1	1		2							4
	0730-0745													0
	0745-0800			1	1		4							6
HEAVY TRUCKS ONLY	0800-0815						3							3
	0815-0830						2							2
5/29/2024	0830-0845													0
Weekday AM	0845-0900			2	2		1	1						6
	Peak Hour (7:15-8:15)	**0**	**0**	**2**	**2**	**0**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	

Location:	**5/29/2024**	**SB (from North)**			**WB (from East)**			**NB (from South)**			**EB (from West)**			
	weekday PM	***EC Office driveway (south leg)***			***Gateway Blvd (west leg)***			***Gateway Driveways (north leg)***			***Gateway Blvd (east leg)***			
Gateway Building Driveways		***RT***	***Thru***	***LT***	***RT***	***Thru***	***LT***	***RT***	***Thru***	***LT***	***RT***	***Thru***	***LT***	
	1600-1615			1		1						1		3
Util vehicle EB RT via grass	1615-1630													0
HEAVY TRUCKS ONLY	1630-1645						1	1			1	1		4
	1645-1700													0
	1700-1715													0
	1715-1730													0
	1730-1745							1						1
	1745-1800													0
	Peak Hour (16:00-17:00)	**0**	**0**	**1**	**0**	**1**	**1**	**1**	**0**	**0**	**1**	**2**	**0**	

Passero Associates

Project: Gateway Building *#20243889.0001* **Reviewer:** *DBD*

Location:

Gateway Building Driveways		***EC Office driveway (south leg)***			***Gateway Blvd (west leg)***			***Gateway Driveways (north leg)***			***Gateway Blvd (east leg)***			
		EB		***WB***	***NB***		***SB***	***EB***		***WB***	***NB***		***SB***	
	0700-0715													0
	0715-0730													0
	0730-0745													0
	0745-0800													0
Pedestrians Only	0800-0815						**1**							1
	0815-0830													0
5/29/2024	0830-0845													0
Weekday AM	0845-0900													0

Location:

Gateway Building Driveways		***EC Office driveway (south leg)***			***Gateway Blvd (west leg)***			***Gateway Driveways (north leg)***			***Gateway Blvd (east leg)***			
		EB		***WB***	***NB***		***SB***	***EB***		***WB***	***NB***		***SB***	
1 scooter WB thru on road	1600-1615									**1**				1
	1615-1630													0
	1630-1645													0
	1645-1700													0
Pedestrians Only	1700-1715									**3**				3
	1715-1730													0
5/29/2024	1730-1745										**1**			1
Weekday PM	1745-1800													0

APPENDIX B: MISCELLANEOUS CALCULATIONS

PASSERO
engineering architecture

Gateway Building Development, Town of Hamburg, NY

Documentation of Ambient Traffic Volume Growth

Roadway	Segment starts at	Segment end at	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Annual Growth
NY-5	Rte 179	City of Lackawanna	39,916			40,566			43,049			37,681	-0.64%
												AVERAGE	**-0.64%**

PASSERO

PROJECT: **Gateway Building Development**
LOCATION: **Town of Hamburg, NY**
PEAK HOUR: **Weekday AM**

Figure Number		3A	4	5		6			7
			Num of yrs						
			5						
LOCATION NUMBER	**INTERSECTION DESCRIPTION**	**2024 Collected Volumes**	**No Build Volumes**	**Trip Generation and Distribution**				**Total Site Trips**	**Full Build Volumes**
			0.25%	Enter Dist. %	Exit Dist. %	Trips IN 22	Trips OUT 55		
1	Gateway Blvd @ Northerly Driveway								
	SR								
	ST								
	SL								
	WR								
	WT								
	WL	8	8		10%		6	6	14
	NR	29	29	10%		2		2	31
	NT								
	NL								
	ER								
	ET								
	EL								
2	Gateway Blvd @ Proposed Driveway								
	SR								
	ST								
	SL				15%		8	8	8
	WR			15%		3		3	3
	WT	29	29	10%		2		2	31
	WL								
	NR								
	NT								
	NL								
	ER								
	ET	8	8		10%		6	6	14
	EL								
3	Gateway Blvd @ Exiting Driveway								
	SR	1	1						1
	ST								
	SL	27	27		75%		41	41	68
	WR								
	WT	29	29	25%		5		5	34
	WL								
	NR								
	NT								
	NL								
	ER								
	ET	8	8		25%		14	14	22
	EL								
4	Gateway Blvd @ Entering Driveway/Southtowns Dwy								
	SR								
	ST								
	SL								
	WR	46	47	75%		17		17	64
	WT	28	28	25%		5		5	33
	WL	37	37						37
	NR	7	7						7
	NT								
	NL	1	1						1
	ER	1	1						1
	ET	34	34		100%		55	55	89
	EL								

PASSERO

PROJECT: **Gateway Building Development**
LOCATION: **Town of Hamburg, NY**
PEAK HOUR: **Weekday PM**

Figure Number		3A	4	5		6			7
			Num of yrs						
			5						
LOCATION NUMBER	**INTERSECTION DESCRIPTION**	**2024 Collected Volumes**	**No Build Volumes**	**Trip Generation and Distribution**				**Total Site Trips**	**Full Build Volumes**
			0.25%	Enter Dist. %	Exit Dist. %	Trips IN 64	Trips OUT 46		
1	Gateway Blvd @ Northerly Driveway								
	SR								
	ST								
	SL								
	WR								
	WT								
	WL	29	29		10%		5	5	34
	NR	24	24	10%		6		6	30
	NT								
	NL								
	ER								
	ET								
	EL								
2	Gateway Blvd @ Proposed Driveway								
	SR								
	ST								
	SL				15%		7	7	7
	WR			15%		10		10	10
	WT	24	24	10%		6		6	30
	WL								
	NR								
	NT								
	NL								
	ER								
	ET	29	29		10%		5	5	34
	EL								
3	Gateway Blvd @ Exiting Driveway								
	SR								
	ST								
	SL	66	67		75%		34	34	101
	WR								
	WT	24	24	25%		16		16	40
	WL								
	NR								
	NT								
	NL								
	ER								
	ET	29	29		25%		12	12	41
	EL								
4	Gateway Blvd @ Entering Driveway/Southtowns Dwy								
	SR								
	ST								
	SL								
	WR	22	22	75%		48		48	70
	WT	24	24	25%		16		16	40
	WL	3	3						3
	NR	31	31						31
	NT								
	NL								
	ER								
	ET	94	95		100%		46	46	141
	EL	1	1						1

PROJECT DETAILS

Project Name:	Gateway Building	Type of Project:	
Project No:		City:	
Country:		Built-up Area(Sq.ft):	
Analyst Name:	Amy Dake	Clients Name:	
Date:	5/22/2024	ZIP/Postal Code:	
State/Province:		No. of Scenarios:	2
Analysis Region:			

SCENARIO SUMMARY

Scenarios	Name	No. of Land Uses	Phases of Development	No. of Years to Project Traffic	User Group	Estimated New Vehicle Trips		
						Entry	Exit	Total
Scenario - 1	AM Peak Hour	3	1	0		22	55	77
Scenario - 2	PM Peak Hour	3	1	0		64	46	110

Scenario - 1

Scenario Name: AM Peak Hour
User Group:
Dev. phase: 1
No. of Years to Project Traffic : 0
Analyst Note:
Warning:

VEHICLE TRIPS BEFORE REDUCTION

Land Use & Data Source	Location	IV	Size	Time Period	Method Rate/Equation	Entry Split%	Exit Split%	Total
310 - Hotel	General Urban/Suburban	Rooms	35	Weekday, Peak Hour of Adjacent Street Traffic,	Best Fit (LIN)	6	4	10
Data Source: Trip Generation Manual, 11th Ed					T = 0.50(X) - 7.45	56%	44%	
221(1) - Multifamily Housing (Mid-Rise) - Not	General Urban/Suburban	Dwelling Units	40	Weekday, Peak Hour of Adjacent Street Traffic,	Best Fit (LIN)	1	5	6
Data Source: Trip Generation Manual, 11th Ed					T = 0.44(X) - 11.61	23%	77%	
215 - Single-Family Attached Housing	General Urban/Suburban	Dwelling Units	128	Weekday, Peak Hour of Adjacent Street Traffic,	Best Fit (LIN)	15	46	61
Data Source: Trip Generation Manual, 11th Ed					T = 0.52(X) - 5.70	25%	75%	

VEHICLE TO PERSON TRIP CONVERSION

BASELINE SITE VEHICLE CHARACTERISTICS:

Land Use	Baseline Site Vehicle Mode Share		Baseline Site Vehicle Occupancy		Baseline Site Vehicle Directional Split	
	Entry (%)	Exit (%)	Entry	Exit	Entry (%)	Exit (%)
310 - Hotel	100	100	1	1	56	44
221(1) - Multifamily Housing (Mid-Rise) - Not Close to Rail Transit	100	100	1	1	23	77
215 - Single-Family Attached Housing	100	100	1	1	25	75

ESTIMATED BASELINE SITE PERSON TRIPS:

Land Use	Person Trips by Vehicle		Person Trips by Other Modes		Total Baseline Site Person Trips	
	Entry	Exit	Entry	Exit	Entry	Exit
310 - Hotel	6	4	0	0	6	4
	10		0		10	
221(1) - Multifamily Housing (Mid-Rise) - Not Close to Rail Transit	1	5	0	0	1	5
	6		0		6	
215 - Single-Family Attached Housing	15	46	0	0	15	46
	61		0		61	

VEHICLE TRIPS AFTER MULTI-MODAL ADJUSTMENT

MODE SHARE:

Land Use	Personal Passenger Vehicle		Truck		Other Modes	
	Entry (%)	Exit (%)	Entry (%)	Exit (%)	Entry (%)	Exit (%)
310 - Hotel	100%	100%	0%	0%	0%	0%
221(1) - Multifamily Housing (Mid-Rise) - Not Close to Rail Transit	100%	100%	0%	0%	0%	0%
215 - Single-Family Attached Housing	100%	100%	0%	0%	0%	0%

OCCUPANCY:

Land Use	Vehicle	
	Entry	Exit
310 - Hotel	1.00	1.00
221(1) - Multifamily Housing (Mid-Rise) - Not Close to Rail Transit	1.00	1.00
215 - Single-Family Attached Housing	1.00	1.00

ADJUSTED VEHICLE TRIPS:

Land Use	Entry				Exit			
	Person Trips	Vehicle Mode Share (%)	Vehicle Occupancy	Vehical Trips	Person Trips	Vehicle Mode Share (%)	Vehicle Occupancy	Vehical Trips
310 - Hotel	6	100%	1.00	6	4	100%	1.00	4
221(1) - Multifamily Housing (Mid-Rise) -	1	100%	1.00	1	5	100%	1.00	5
215 - Single-Family Attached Housing	15	100%	1.00	15	46	100%	1.00	46

INTERNAL VEHICLE TRIP REDUCTION

LAND USE GROUP ASSIGNMENT:

Land Use	Land Use Group
310 - Hotel	Hotel
221(1) - Multifamily Housing (Mid-Rise) - Not Close to Rail Transit	Residential
215 - Single-Family Attached Housing	Residential

BALANCED PERSON TRIPS:

310 - Hotel — 221(1) - Multifamily Housing (Mid-Rise)-Not Close to Rail Transit

Persons Exit	PAF	UIPTC	Unconstrained Demand	==>>> BALANCED ==>>>	Unconstrained Demand	UIPTC	PAF	Persons Entry
4	0	0	0	**0**	0	0	0	1
Persons Entry	**PAF**	**UIPTC**	**Unconstrained Demand**	**<<<== BALANCED <<<==**	**Unconstrained Demand**	**UIPTC**	**PAF**	**Persons Exit**
6	0	0	0	**0**	0	0	0	5

310 - Hotel — 215 - Single-Family Attached Housing

Persons Exit	PAF	UIPTC	Unconstrained Demand	==>>> BALANCED ==>>>	Unconstrained Demand	UIPTC	PAF	Persons Entry
4	0	0	0	**0**	0	0	0	15
Persons Entry	**PAF**	**UIPTC**	**Unconstrained Demand**	**<<<== BALANCED <<<==**	**Unconstrained Demand**	**UIPTC**	**PAF**	**Persons Exit**
6	0	0	0	**0**	0	0	0	46

221(1) - Multifamily Housing (Mid-Rise)-Not Close to Rail Transit — 215 - Single-Family Attached Housing

Persons Exit	PAF	UIPTC	Unconstrained Demand	==>>> BALANCED ==>>>	Unconstrained Demand	UIPTC	PAF	Persons Entry
5	0	0	0	**0**	0	0	0	15
Persons Entry	**PAF**	**UIPTC**	**Unconstrained Demand**	**<<<== BALANCED <<<==**	**Unconstrained Demand**	**UIPTC**	**PAF**	**Persons Exit**
1	0	0	0	**0**	0	0	0	46

INTERNAL PERSON TRIPS:

310 - Hotel

Internal Person Trips From	Entry	Exit	Total
Total Internal Person Trips	**0**	**0**	**0**

221(1) - Multifamily Housing (Mid-Rise)-Not Close to Rail Transit

Internal Person Trips From	Entry	Exit	Total
Total Internal Person Trips	**0**	**0**	**0**

215 - Single-Family Attached Housing

Internal Person Trips From	Entry	Exit	Total
Total Internal Person Trips	**0**	**0**	**0**

INTERNAL VEHICLE TRIPS AND CAPTURE:

310 - Hotel

Total Internal Person Trips	0	0	0
Vehicle Mode Share	100%	100%	-
Vehicle Occupancy	1.00	1.00	-
Total Vehicle Internal Trips	**0**	**0**	**0**
Total External Vehicle Trips	6	4	10
Internal Vehicle Trip Capture	**0%**	**0%**	**0%**

221(1) - Multifamily Housing (Mid-Rise)-Not Close to Rail Transit

Total Internal Person Trips	0	0	0
Vehicle Mode Share	100%	100%	-
Vehicle Occupancy	1.00	1.00	-
Total Vehicle Internal Trips	**0**	**0**	**0**
Total External Vehicle Trips	1	5	6
Internal Vehicle Trip Capture	**0%**	**0%**	**0%**

215 - Single-Family Attached Housing

Total Internal Person Trips	0	0	0
Vehicle Mode Share	100%	100%	-
Vehicle Occupancy	1.00	1.00	-
Total Vehicle Internal Trips	**0**	**0**	**0**
Total External Vehicle Trips	15	46	61
Internal Vehicle Trip Capture	**0%**	**0%**	**0%**

PASS-BY VEHICLE TRIP REDUCTION

Land Use	External Vehicle Trips		Pass-by Vehicle Trip %		Pass-by Vehicle Trips	
	Entry	Exit	Entry (%)	Exit (%)	Entry	Exit
310 - Hotel	6	4	0.00%	0.00%	0	0
221(1) - Multifamily Housing (Mid-Rise) - Not Close to Rail Transit	1	5	0.00%	0.00%	0	0
215 - Single-Family Attached Housing	15	46	0.00%	0.00%	0	0

DIVERTED VEHICLE TRIP REDUCTION

Land Use	External Vehicle Trips		Diverted Vehicle Trip %		Diverted Vehicle Trips	
	Entry	Exit	Entry (%)	Exit (%)	Entry	Exit
310 - Hotel	6	4	0.00%	0.00%	0	0
221(1) - Multifamily Housing (Mid-Rise) - Not Close to Rail Transit	1	5	0.00%	0.00%	0	0
215 - Single-Family Attached Housing	15	46	0.00%	0.00%	0	0

EXTRA VEHICLE TRIP REDUCTION

Land Use	(External - (Pass-by + Diverted)) Vehicle Trips		Extra Vehicle Trip Reduction %		Extra Reduced Vehicle Trips	
	Entry	Exit	Entry (%)	Exit (%)	Entry	Exit
310 - Hotel	6	4	0.00%	0.00%	0	0
221(1) - Multifamily Housing (Mid-Rise) - Not Close to Rail Transit	1	5	0.00%	0.00%	0	0
215 - Single-Family Attached Housing	15	46	0.00%	0.00%	0	0

NEW VEHICLE TRIPS

Land Use	New Vehicle Trips		
	Entry	Exit	Total
310 - Hotel	6	4	10
221(1) - Multifamily Housing (Mid-Rise) - Not Close to Rail Transit	1	5	6
215 - Single-Family Attached Housing	15	46	61

Land Use	New Vehicle Trips (PPV)		
	Entry	Exit	Total
310 - Hotel	6	4	10
221(1) - Multifamily Housing (Mid-Rise) - Not Close to Rail Transit	1	5	6
215 - Single-Family Attached Housing	15	46	61

Land Use	New Vehicle Trips (Truck)		
	Entry	Exit	Total
310 - Hotel	0	0	0
221(1) - Multifamily Housing (Mid-Rise) - Not Close to Rail Transit	0	0	0
215 - Single-Family Attached Housing	0	0	0

RESULTS

Site Totals	Entry	Exit	Total
Vehicle Trips Before Reduction	22	55	77
Vehicle Trips After Multi-modal Adjustment	22	55	77
Internal Vehicle Trips	0	0	0
External Vehicle Trips	22	55	77
Internal Vehicle Trip Capture	0%	0%	0%
Pass-by Vehicle Trips	0	0	0
Diverted Vehicle Trips	0	0	0
Extra Reduced Vehicle Trips	0	0	0
New Vehicle Trips	22	55	77
PPV	22	55	77
Truck	0	0	0
Person Trips by Other Modes	0	0	0

Scenario - 2

Scenario Name: PM Peak Hour
User Group:
Dev. phase: 1
No. of Years to Project Traffic : 0
Analyst Note:
Warning:

VEHICLE TRIPS BEFORE REDUCTION

Land Use & Data Source	Location	IV	Size	Time Period	Method Rate/Equation	Entry Split%	Exit Split%	Total
310 - Hotel	General Urban/Suburban	Rooms	35	Weekday, Peak Hour of Adjacent Street Traffic,	Average	11	10	21
Data Source: Trip Generation Manual, 11th Ed					0.59	51%	49%	
221(1) - Multifamily Housing (Mid-Rise) - Not	General Urban/Suburban	Dwelling Units	40	Weekday, Peak Hour of Adjacent Street Traffic,	Best Fit (LIN)	10	6	16
Data Source: Trip Generation Manual, 11th Ed					T = 0.39(X) + 0.34	61%	39%	
215 - Single-Family Attached Housing	General Urban/Suburban	Dwelling Units	128	Weekday, Peak Hour of Adjacent Street Traffic,	Best Fit (LIN)	43	30	73
Data Source: Trip Generation Manual, 11th Ed					T = 0.60(X) - 3.93	59%	41%	

VEHICLE TO PERSON TRIP CONVERSION

BASELINE SITE VEHICLE CHARACTERISTICS:

Land Use	Baseline Site Vehicle Mode Share		Baseline Site Vehicle Occupancy		Baseline Site Vehicle Directional Split	
	Entry (%)	Exit (%)	Entry	Exit	Entry (%)	Exit (%)
310 - Hotel	100	100	1	1	51	49
221(1) - Multifamily Housing (Mid-Rise) - Not Close to Rail Transit	100	100	1	1	61	39
215 - Single-Family Attached Housing	100	100	1	1	59	41

ESTIMATED BASELINE SITE PERSON TRIPS:

Land Use	Person Trips by Vehicle		Person Trips by Other Modes		Total Baseline Site Person Trips	
	Entry	Exit	Entry	Exit	Entry	Exit
310 - Hotel	11	10	0	0	11	10
	21		0		21	
221(1) - Multifamily Housing (Mid-Rise) - Not Close to Rail Transit	10	6	0	0	10	6
	16		0		16	
215 - Single-Family Attached Housing	43	30	0	0	43	30
	73		0		73	

VEHICLE TRIPS AFTER MULTI-MODAL ADJUSTMENT

MODE SHARE:

Land Use	Personal Passenger Vehicle		Truck		Other Modes	
	Entry (%)	Exit (%)	Entry (%)	Exit (%)	Entry (%)	Exit (%)
310 - Hotel	100%	100%	0%	0%	0%	0%
221(1) - Multifamily Housing (Mid-Rise) - Not Close to Rail Transit	100%	100%	0%	0%	0%	0%
215 - Single-Family Attached Housing	100%	100%	0%	0%	0%	0%

OCCUPANCY:

Land Use	Vehicle	
	Entry	Exit
310 - Hotel	1.00	1.00
221(1) - Multifamily Housing (Mid-Rise) - Not Close to Rail Transit	1.00	1.00
215 - Single-Family Attached Housing	1.00	1.00

ADJUSTED VEHICLE TRIPS:

Land Use	Entry				Exit			
	Person Trips	Vehicle Mode Share (%)	Vehicle Occupancy	Vehical Trips	Person Trips	Vehicle Mode Share (%)	Vehicle Occupancy	Vehical Trips
310 - Hotel	11	100%	1.00	11	10	100%	1.00	10
221(1) - Multifamily Housing (Mid-Rise) -	10	100%	1.00	10	6	100%	1.00	6
215 - Single-Family Attached Housing	43	100%	1.00	43	30	100%	1.00	30

INTERNAL VEHICLE TRIP REDUCTION

LAND USE GROUP ASSIGNMENT:

Land Use	Land Use Group
310 - Hotel	Hotel
221(1) - Multifamily Housing (Mid-Rise) - Not Close to Rail Transit	Residential
215 - Single-Family Attached Housing	Residential

BALANCED PERSON TRIPS:

310 - Hotel

Persons Exit	PAF	UIPTC	Unconstrained Demand	==>>> BALANCED ==>>>	Unconstrained Demand	UIPTC	PAF	Persons Entry
10	0	0	0	**0**	0	0	0	10
Persons Entry	**PAF**	**UIPTC**	**Unconstrained Demand**	**<<<== BALANCED <<<==**	**Unconstrained Demand**	**UIPTC**	**PAF**	**Persons Exit**
11	0	0	0	**0**	0	0	0	6

310 - Hotel

Persons Exit	PAF	UIPTC	Unconstrained Demand	==>>> BALANCED ==>>>	Unconstrained Demand	UIPTC	PAF	Persons Entry
10	0	0	0	**0**	0	0	0	43
Persons Entry	**PAF**	**UIPTC**	**Unconstrained Demand**	**<<<== BALANCED <<<==**	**Unconstrained Demand**	**UIPTC**	**PAF**	**Persons Exit**
11	0	0	0	**0**	0	0	0	30

221(1) - Multifamily Housing (Mid-Rise)-Not Close to Rail Transit

Persons Exit	PAF	UIPTC	Unconstrained Demand	==>>> BALANCED ==>>>	Unconstrained Demand	UIPTC	PAF	Persons Entry
6	0	0	0	**0**	0	0	0	43
Persons Entry	**PAF**	**UIPTC**	**Unconstrained Demand**	**<<<== BALANCED <<<==**	**Unconstrained Demand**	**UIPTC**	**PAF**	**Persons Exit**
10	0	0	0	**0**	0	0	0	30

INTERNAL PERSON TRIPS:

310 - Hotel

Internal Person Trips From	Entry	Exit	Total
Total Internal Person Trips	**0**	**0**	**0**

221(1) - Multifamily Housing (Mid-Rise)-Not Close to Rail Transit

Internal Person Trips From	Entry	Exit	Total
Total Internal Person Trips	**0**	**0**	**0**

215 - Single-Family Attached Housing

Internal Person Trips From	Entry	Exit	Total
Total Internal Person Trips	**0**	**0**	**0**

INTERNAL VEHICLE TRIPS AND CAPTURE:

310 - Hotel

Total Internal Person Trips	0	0	0
Vehicle Mode Share	100%	100%	-
Vehicle Occupancy	1.00	1.00	-
Total Vehicle Internal Trips	**0**	**0**	**0**
Total External Vehicle Trips	11	10	21
Internal Vehicle Trip Capture	**0%**	**0%**	**0%**

221(1) - Multifamily Housing (Mid-Rise)-Not Close to Rail Transit

Total Internal Person Trips	0	0	0
Vehicle Mode Share	100%	100%	-
Vehicle Occupancy	1.00	1.00	-
Total Vehicle Internal Trips	**0**	**0**	**0**
Total External Vehicle Trips	10	6	16
Internal Vehicle Trip Capture	**0%**	**0%**	**0%**

215 - Single-Family Attached Housing

Total Internal Person Trips	0	0	0
Vehicle Mode Share	100%	100%	-
Vehicle Occupancy	1.00	1.00	-
Total Vehicle Internal Trips	**0**	**0**	**0**
Total External Vehicle Trips	43	30	73
Internal Vehicle Trip Capture	**0%**	**0%**	**0%**

PASS-BY VEHICLE TRIP REDUCTION

Land Use	External Vehicle Trips		Pass-by Vehicle Trip %		Pass-by Vehicle Trips	
	Entry	Exit	Entry (%)	Exit (%)	Entry	Exit
310 - Hotel	11	10	0.00%	0.00%	0	0
221(1) - Multifamily Housing (Mid-Rise) - Not Close to Rail Transit	10	6	0.00%	0.00%	0	0
215 - Single-Family Attached Housing	43	30	0.00%	0.00%	0	0

DIVERTED VEHICLE TRIP REDUCTION

Land Use	External Vehicle Trips		Diverted Vehicle Trip %		Diverted Vehicle Trips	
	Entry	Exit	Entry (%)	Exit (%)	Entry	Exit
310 - Hotel	11	10	0.00%	0.00%	0	0
221(1) - Multifamily Housing (Mid-Rise) - Not Close to Rail Transit	10	6	0.00%	0.00%	0	0
215 - Single-Family Attached Housing	43	30	0.00%	0.00%	0	0

EXTRA VEHICLE TRIP REDUCTION

Land Use	(External - (Pass-by + Diverted)) Vehicle Trips		Extra Vehicle Trip Reduction %		Extra Reduced Vehicle Trips	
	Entry	Exit	Entry (%)	Exit (%)	Entry	Exit
310 - Hotel	11	10	0.00%	0.00%	0	0
221(1) - Multifamily Housing (Mid-Rise) - Not Close to Rail Transit	10	6	0.00%	0.00%	0	0
215 - Single-Family Attached Housing	43	30	0.00%	0.00%	0	0

NEW VEHICLE TRIPS

Land Use	New Vehicle Trips		
	Entry	Exit	Total
310 - Hotel	11	10	21
221(1) - Multifamily Housing (Mid-Rise) - Not Close to Rail Transit	10	6	16
215 - Single-Family Attached Housing	43	30	73

Land Use	New Vehicle Trips (PPV)		
	Entry	Exit	Total
310 - Hotel	11	10	21
221(1) - Multifamily Housing (Mid-Rise) - Not Close to Rail Transit	10	6	16
215 - Single-Family Attached Housing	43	30	73

Land Use	New Vehicle Trips (Truck)		
	Entry	Exit	Total
310 - Hotel	0	0	0
221(1) - Multifamily Housing (Mid-Rise) - Not Close to Rail Transit	0	0	0
215 - Single-Family Attached Housing	0	0	0

RESULTS

Site Totals	Entry	Exit	Total
Vehicle Trips Before Reduction	64	46	110
Vehicle Trips After Multi-modal Adjustment	64	46	110
Internal Vehicle Trips	0	0	0
External Vehicle Trips	64	46	110
Internal Vehicle Trip Capture	0%	0%	0%
Pass-by Vehicle Trips	0	0	0
Diverted Vehicle Trips	0	0	0
Extra Reduced Vehicle Trips	0	0	0
New Vehicle Trips	64	46	110
PPV	64	46	110
Truck	0	0	0
Person Trips by Other Modes	0	0	0

PROJECT DETAILS

Project Name:	Gateway Building Full Office	Type of Project:	
Project No:		City:	
Country:		Built-up Area(Sq.ft):	
Analyst Name:	Amy Dake	Clients Name:	
Date:	6/6/2024	ZIP/Postal Code:	
State/Province:		No. of Scenarios:	2
Analysis Region:			

SCENARIO SUMMARY

Scenarios	Name	No. of Land Uses	Phases of Development	No. of Years to Project Traffic	User Group	Estimated New Vehicle Trips		
						Entry	Exit	Total
Scenario - 1	AM Peak	1	1	0		193	26	219
Scenario - 2	PM Peak	1	1	0		37	179	216

Scenario - 1

Scenario Name: AM Peak
User Group:
Dev. phase: 1
No. of Years to Project Traffic : 0
Analyst Note:
Warning:

VEHICLE TRIPS BEFORE REDUCTION

Land Use & Data Source	Location	IV	Size	Time Period	Method Rate/Equation	Entry Split%	Exit Split%	Total
710 - General Office Building	General Urban/Suburban	1000 Sq. Ft. GFA	137	Weekday, Peak Hour of Adjacent Street Traffic,	Best Fit (LOG)	193	26	219
Data Source: Trip Generation Manual, 11th Ed					Ln(T) =0.86Ln(X) + 1.16	88%	12%	

VEHICLE TO PERSON TRIP CONVERSION

BASELINE SITE VEHICLE CHARACTERISTICS:

Land Use	Baseline Site Vehicle Mode Share		Baseline Site Vehicle Occupancy		Baseline Site Vehicle Directional Split	
	Entry (%)	Exit (%)	Entry	Exit	Entry (%)	Exit (%)
710 - General Office Building	99	100	1.1	1.1	88	12

ESTIMATED BASELINE SITE PERSON TRIPS:

Land Use	Person Trips by Vehicle		Person Trips by Other Modes		Total Baseline Site Person Trips	
	Entry	Exit	Entry	Exit	Entry	Exit
710 - General Office Building	212	29	2	0	214	29
	241		2		243	

NEW VEHICLE TRIPS

Land Use	New Vehicle Trips		
	Entry	Exit	Total
710 - General Office Building	193	26	219

RESULTS

Site Totals	Entry	Exit	Total
Vehicle Trips Before Reduction	193	26	219
External Vehicle Trips	193	26	219
New Vehicle Trips	193	26	219

Scenario - 2

Scenario Name: PM Peak
User Group:
Dev. phase: 1
No. of Years to Project Traffic : 0
Analyst Note:
Warning:

VEHICLE TRIPS BEFORE REDUCTION

Land Use & Data Source	Location	IV	Size	Time Period	Method Rate/Equation	Entry Split%	Exit Split%	Total
710 - General Office Building	General Urban/Suburban	1000 Sq. Ft. GFA	137	Weekday, Peak Hour of Adjacent Street Traffic,	Best Fit (LOG)	37	179	216
Data Source: Trip Generation Manual, 11th Ed					Ln(T) =0.83Ln(X) + 1.29	17%	83%	

VEHICLE TO PERSON TRIP CONVERSION

BASELINE SITE VEHICLE CHARACTERISTICS:

Land Use	Baseline Site Vehicle Mode Share		Baseline Site Vehicle Occupancy		Baseline Site Vehicle Directional Split	
	Entry (%)	Exit (%)	Entry	Exit	Entry (%)	Exit (%)
710 - General Office Building	100	99	1.1	1.1	17	83

ESTIMATED BASELINE SITE PERSON TRIPS:

Land Use	Person Trips by Vehicle		Person Trips by Other Modes		Total Baseline Site Person Trips	
	Entry	Exit	Entry	Exit	Entry	Exit
710 - General Office Building	40	197	0	2	40	199
	237		2		239	

NEW VEHICLE TRIPS

Land Use	New Vehicle Trips		
	Entry	Exit	Total
710 - General Office Building	37	179	216

RESULTS

Site Totals	Entry	Exit	Total
Vehicle Trips Before Reduction	37	179	216
External Vehicle Trips	37	179	216
New Vehicle Trips	37	179	216

Project: Gateway Building
Description: Residential, Hotel, Office

Shared Parking Demand Summary
Peak Month: FEBRUARY -- Peak Period: 10 AM, WEEKDAY

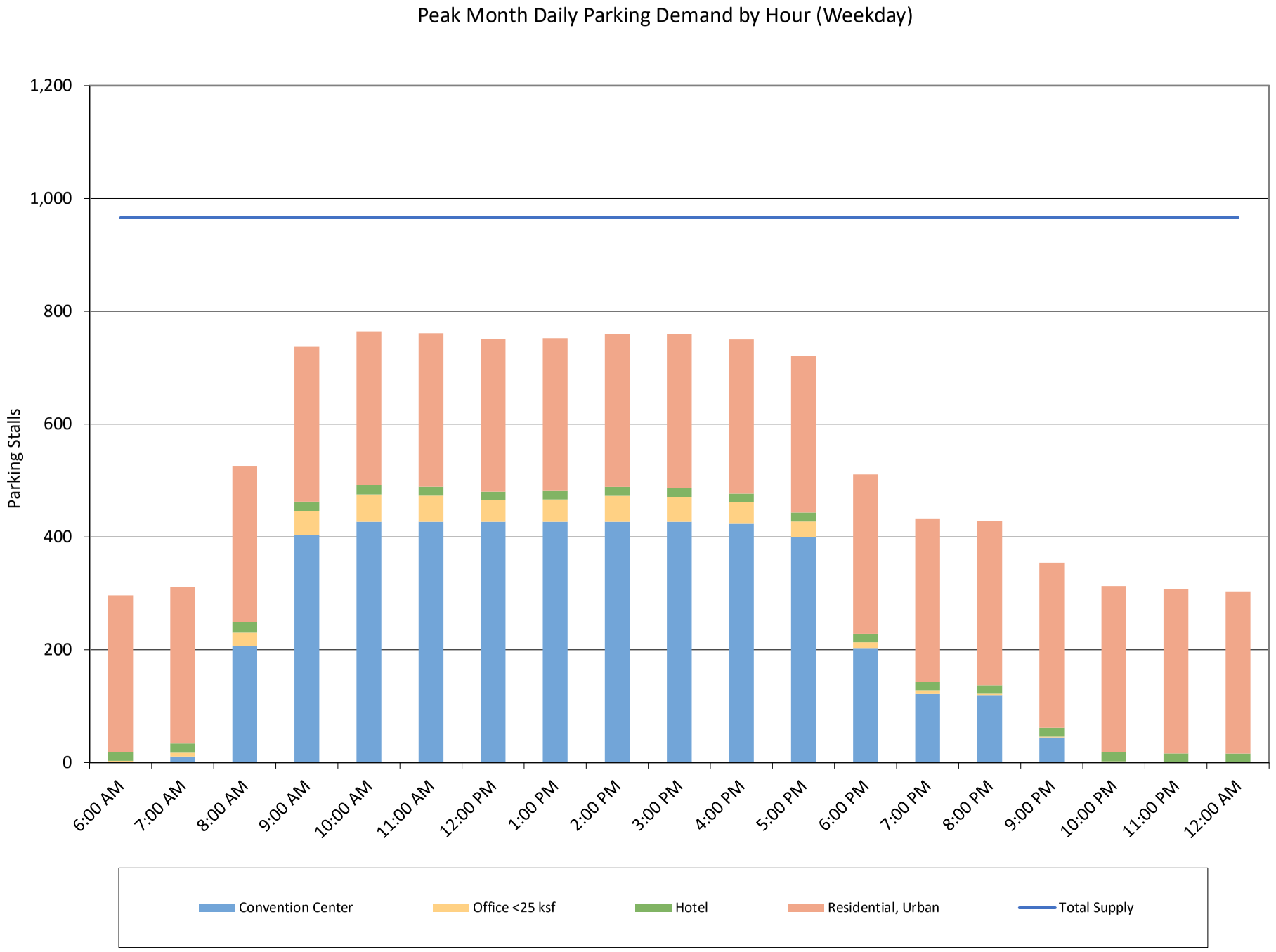
Land Use	Project Data		Weekday					Weekend					Weekday			Weekend		
	Quantity	Unit	Base Ratio	Driving Adj	Non-Captive Ratio	Project Ratio	Unit For Ratio	Base Ratio	Driving Adj	Non-Captive Ratio	Project Ratio	Unit For Ratio	Peak Hr Adj 10 AM	Peak Mo Adj February	Estimated Parking Demand	Peak Hr Adj 11 AM	Peak Mo Adj February	Estimated Parking Demand
Retail																		
Food and Beverage																		
Entertainment and Institutions																		
Convention Center	72,000	sf GLA	5.50	100%	99%	5.43	ksf GLA	5.50	100%	99%	5.43	ksf GLA	100%	100%	391	100%	100%	391
Employee			0.50	100%	100%	0.50		0.50	100%	100%	0.50		100%	100%	36	100%	100%	36
Hotel and Residential																		
Hotel-Business		keys	1.00	59%	100%	0.59	key	1.00	69%	100%	0.69	key	60%	75%	-	60%	75%	-
Hotel-Leisure	35	keys	1.00	50%	100%	0.50	key	1.00	50%	100%	0.50	key	70%	90%	11	70%	90%	11
Hotel Employees	35	keys	0.15	100%	100%	0.15	key	0.15	100%	100%	0.15	key	100%	90%	5	100%	90%	5
Restaurant/Lounge		sf GLA	6.67	63%	90%	3.78	ksf GLA	7.67	54%	30%	1.24	ksf GLA	10%	86%	-	5%	86%	-
Meeting/Banquet (0 to 20 sq ft/key)		sf GLA	0.00	68%	60%	0.00	ksf GLA	0.00	68%	70%	0.00	ksf GLA	60%	100%	-	60%	100%	-
Meeting/Banquet (20 to 50 sq ft/key)		sf GLA	0.00	68%	60%	0.00	ksf GLA	0.00	68%	70%	0.00	ksf GLA	60%	100%	-	60%	100%	-
Meeting/Banquet (50 to 100 sq ft/key)		sf GLA	0.00	68%	60%	0.00	ksf GLA	0.00	68%	70%	0.00	ksf GLA	60%	100%	-	60%	100%	-
Convention (100 to 200 sq ft/key)		sf GLA	0.00	68%	60%	0.00	ksf GLA	5.50	68%	70%	2.62	ksf GLA	100%	100%	-	100%	100%	-
Convention (> 200 sq ft/key)		sf GLA	5.50	68%	60%	2.24	ksf GLA	5.50	68%	70%	2.62	ksf GLA	100%	100%	-	100%	100%	-
Restaurant/Meeting Employees		sf GLA	0.00	100%	100%	0.00	ksf GLA	0.00	100%	100%	0.00	ksf GLA	100%	100%	-	100%	100%	-
Residential, Urban																0%		
Studio Efficiency		units	0.07	100%	100%	0.07	unit	0.07	100%	100%	0.07	unit	60%	100%	-	69%	100%	-
1 Bedroom		units	0.07	100%	100%	0.07	unit	0.07	100%	100%	0.07	unit	60%	100%	-	69%	100%	-
2 Bedrooms	168	units	0.13	100%	100%	0.13	unit	0.13	100%	100%	0.13	unit	60%	100%	14	69%	100%	16
3+ Bedrooms		units	0.20	100%	100%	0.20	unit	0.20	100%	100%	0.20	unit	60%	100%	-	69%	100%	-
Reserved	92%	res spaces	1.52	100%	100%	1.52	unit	1.52	100%	100%	1.52	unit	100%	100%	256	100%	100%	256
Visitor	168	units	0.10	100%	100%	0.10	unit	0.15	100%	100%	0.15	unit	20%	100%	3	20%	100%	5
Office																		
Office <25 ksf	13,000	sf GFA	0.30	100%	100%	0.30	ksf GFA	0.03	100%	100%	0.03	ksf GFA	100%	100%	4	100%	100%	1
Reserved		empl	0.00	100%	100%	0.00		0.00	100%	100%	0.00		100%	100%	-	100%	100%	-
Employee			3.50	100%	97%	3.40		0.35	100%	97%	0.34		100%	100%	45	100%	100%	5
Additional Land Uses																		

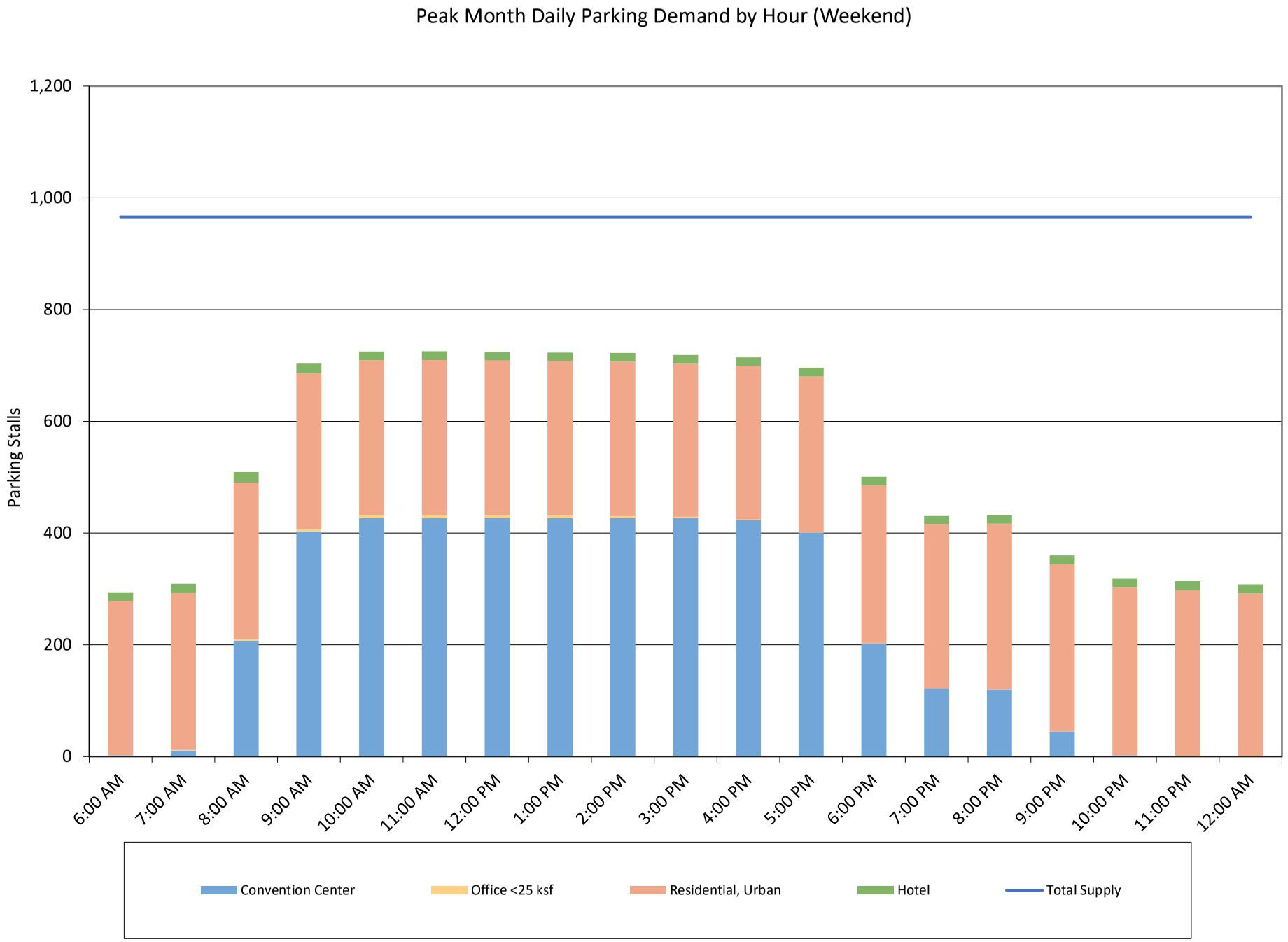
Customer/Visitor	409	Customer	408
Employee/Resident	99	Employee/Resident	61
Reserved	256	Reserved	256
Total	764	Total	725
Shared Parking Reduction	7%		7%

Project: Gateway Building
Description: Residential, Hotel, Office

Monthly Comparison Summary								
Month	Weekday							
	Overall Pk		AM Peak Hr		PM Peak Hr		Eve Peak Hr	
	Time	Demand	Time	Demand	Time	Demand	Time	Demand
January	10 AM	660	10 AM	660	2 PM	655	6 PM	460
February	10 AM	764	10 AM	764	2 PM	760	6 PM	511
March	10 AM	727	10 AM	727	2 PM	722	6 PM	494
April	10 AM	578	10 AM	578	2 PM	573	6 PM	423
May	10 AM	597	10 AM	597	2 PM	593	6 PM	431
June	10 AM	555	10 AM	555	2 PM	550	6 PM	411
July	10 AM	532	10 AM	532	2 PM	527	6 PM	401
August	10 AM	660	10 AM	660	2 PM	660	6 PM	462
September	10 AM	680	10 AM	680	2 PM	675	6 PM	469
October	10 AM	701	10 AM	701	2 PM	697	6 PM	479
November	10 AM	762	10 AM	762	2 PM	757	6 PM	508
December	10 AM	757	10 AM	757	2 PM	753	6 PM	504
Late December	10 AM	330	10 AM	330	2 PM	325	10 PM	313

Monthly Comparison Summary								
Month	Weekend							
	Overall Pk		AM Peak Hr		PM Peak Hr		Eve Peak Hr	
	Time	Demand	Time	Demand	Time	Demand	Time	Demand
January	11 AM	621	11 AM	621	12 PM	619	6 PM	450
February	11 AM	725	11 AM	725	12 PM	724	6 PM	501
March	11 AM	688	11 AM	688	12 PM	686	6 PM	484
April	11 AM	539	11 AM	539	12 PM	537	6 PM	413
May	11 AM	558	11 AM	558	12 PM	557	6 PM	421
June	11 AM	516	11 AM	516	12 PM	514	6 PM	401
July	11 AM	495	11 AM	495	12 PM	493	6 PM	391
August	11 AM	623	11 AM	623	12 PM	621	6 PM	452
September	11 AM	641	11 AM	641	12 PM	640	6 PM	459
October	11 AM	662	11 AM	662	12 PM	661	6 PM	469
November	11 AM	723	11 AM	723	12 PM	721	6 PM	498
December	11 AM	718	11 AM	718	12 PM	717	6 PM	494
Late December	10 PM	319	8 AM	303	12 PM	298	10 PM	319


Peak Month Daily Parking Demand by Hour (Weekday)
Parking Stalls
1,200
1,000
800
600
400
200
0
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
11:00 PM
12:00 AM
Convention Center
Office <25 ksf
Hotel
Residential, Urban
Total Supply


Peak Month Daily Parking Demand by Hour (Weekend)
Parking Stalls
1,200
1,000
800
600
400
200
0
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
11:00 PM
12:00 AM
Convention Center
Office <25 ksf
Residential, Urban
Hotel
Total Supply

Project: Gateway Building
Description: Residential, Hotel, Office

Shared Parking Demand Summary

Peak Month: MARCH -- Peak Period: 10 AM, WEEKDAY

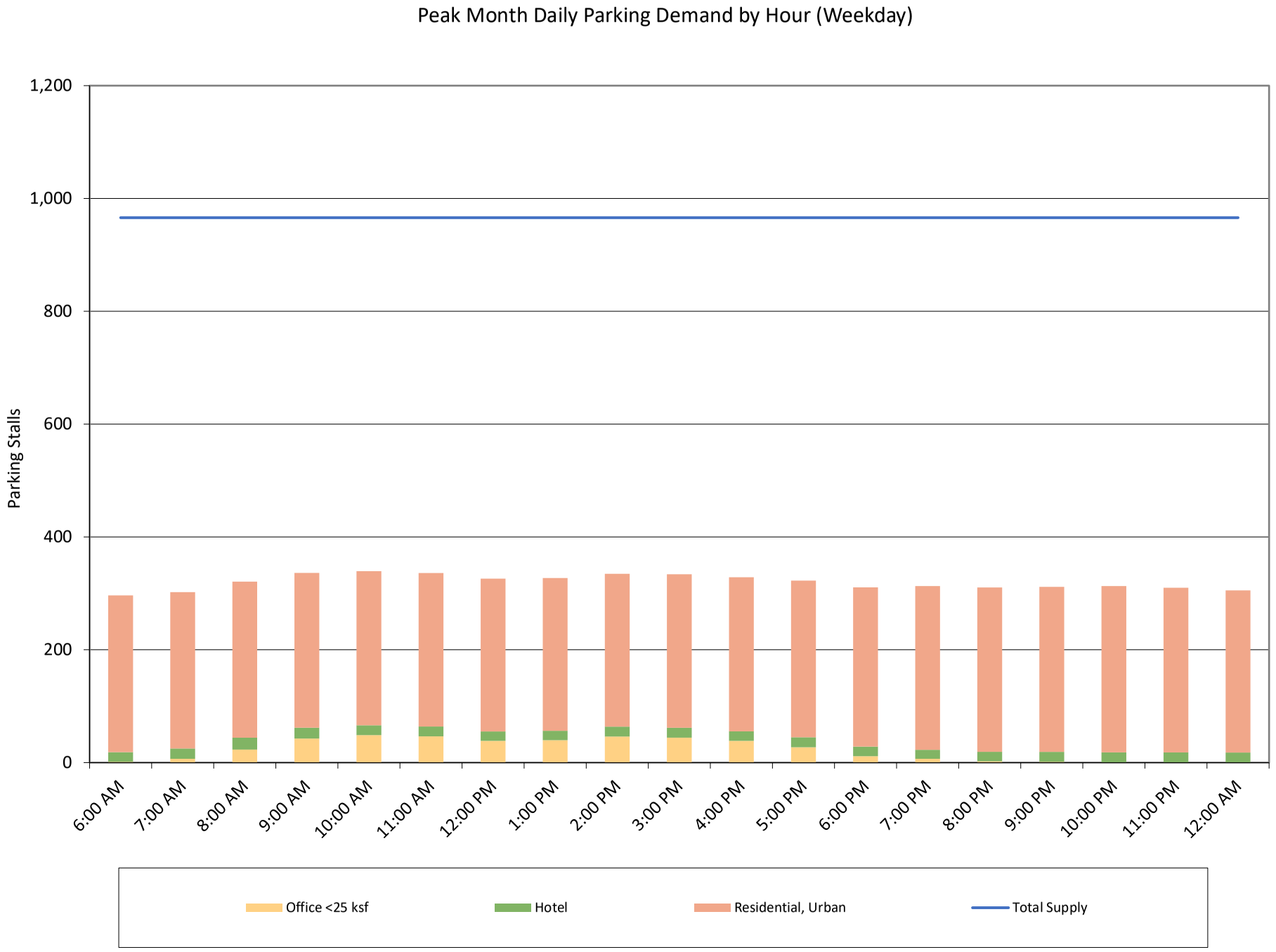
Land Use	Project Data		Weekday					Weekend					Weekday			Weekend		
	Quantity	Unit	Base Ratio	Driving Adj	Non-Captive Ratio	Project Ratio	Unit For Ratio	Base Ratio	Driving Adj	Non-Captive Ratio	Project Ratio	Unit For Ratio	Peak Hr Adj 10 AM	Peak Mo Adj March	Estimated Parking Demand	Peak Hr Adj 10 PM	Peak Mo Adj March	Estimated Parking Demand
Retail																		
Food and Beverage																		
Entertainment and Institutions																		
Hotel and Residential																		
Hotel-Business		keys	1.00	59%	100%	0.59	key	1.00	69%	100%	0.69	key	60%	90%	-	95%	90%	-
Hotel-Leisure	35	keys	1.00	50%	100%	0.50	key	1.00	50%	100%	0.50	key	70%	100%	12	95%	100%	17
Hotel Employees	35	keys	0.15	100%	100%	0.15	key	0.15	100%	100%	0.15	key	100%	100%	5	20%	100%	1
Restaurant/Lounge		sf GLA	6.67	63%	90%	3.78	ksf GLA	7.67	54%	30%	1.24	ksf GLA	10%	95%	-	60%	95%	-
Meeting/Banquet (0 to 20 sq ft/key)		sf GLA	0.00	68%	60%	0.00	ksf GLA	0.00	68%	70%	0.00	ksf GLA	60%	100%	-	50%	100%	-
Meeting/Banquet (20 to 50 sq ft/key)		sf GLA	0.00	68%	60%	0.00	ksf GLA	0.00	68%	70%	0.00	ksf GLA	60%	100%	-	50%	100%	-
Meeting/Banquet (50 to 100 sq ft/key)		sf GLA	0.00	68%	60%	0.00	ksf GLA	0.00	68%	70%	0.00	ksf GLA	60%	100%	-	50%	100%	-
Convention (100 to 200 sq ft/key)		sf GLA	0.00	68%	60%	0.00	ksf GLA	5.50	68%	70%	2.62	ksf GLA	100%	90%	-	0%	90%	-
Convention (> 200 sq ft/key)		sf GLA	5.50	68%	60%	2.24	ksf GLA	5.50	68%	70%	2.62	ksf GLA	100%	90%	-	0%	90%	-
Restaurant/Meeting Employees		sf GLA	0.00	100%	100%	0.00	ksf GLA	0.00	100%	100%	0.00	ksf GLA	100%	100%	-	60%	100%	-
Residential, Urban																0%		
Studio Efficiency		units	0.07	100%	100%	0.07	unit	0.07	100%	100%	0.07	unit	60%	100%	-	85%	100%	-
1 Bedroom		units	0.07	100%	100%	0.07	unit	0.07	100%	100%	0.07	unit	60%	100%	-	85%	100%	-
2 Bedrooms	168	units	0.13	100%	100%	0.13	unit	0.13	100%	100%	0.13	unit	60%	100%	14	85%	100%	20
3+ Bedrooms		units	0.20	100%	100%	0.20	unit	0.20	100%	100%	0.20	unit	60%	100%	-	85%	100%	-
Reserved	92%	res spaces	1.52	100%	100%	1.52	unit	1.52	100%	100%	1.52	unit	100%	100%	256	100%	100%	256
Visitor	168	units	0.10	100%	100%	0.10	unit	0.15	100%	100%	0.15	unit	20%	100%	3	100%	100%	26
Office																		
Office <25 ksf	13,000	sf GFA	0.30	100%	100%	0.30	ksf GFA	0.03	100%	100%	0.03	ksf GFA	100%	100%	4	0%	100%	-
Reserved		empl	0.00	100%	100%	0.00		0.00	100%	100%	0.00		100%	100%	-	100%	100%	-
Employee			3.50	100%	97%	3.40		0.35	100%	97%	0.34		100%	100%	45	0%	100%	-
Additional Land Uses																		

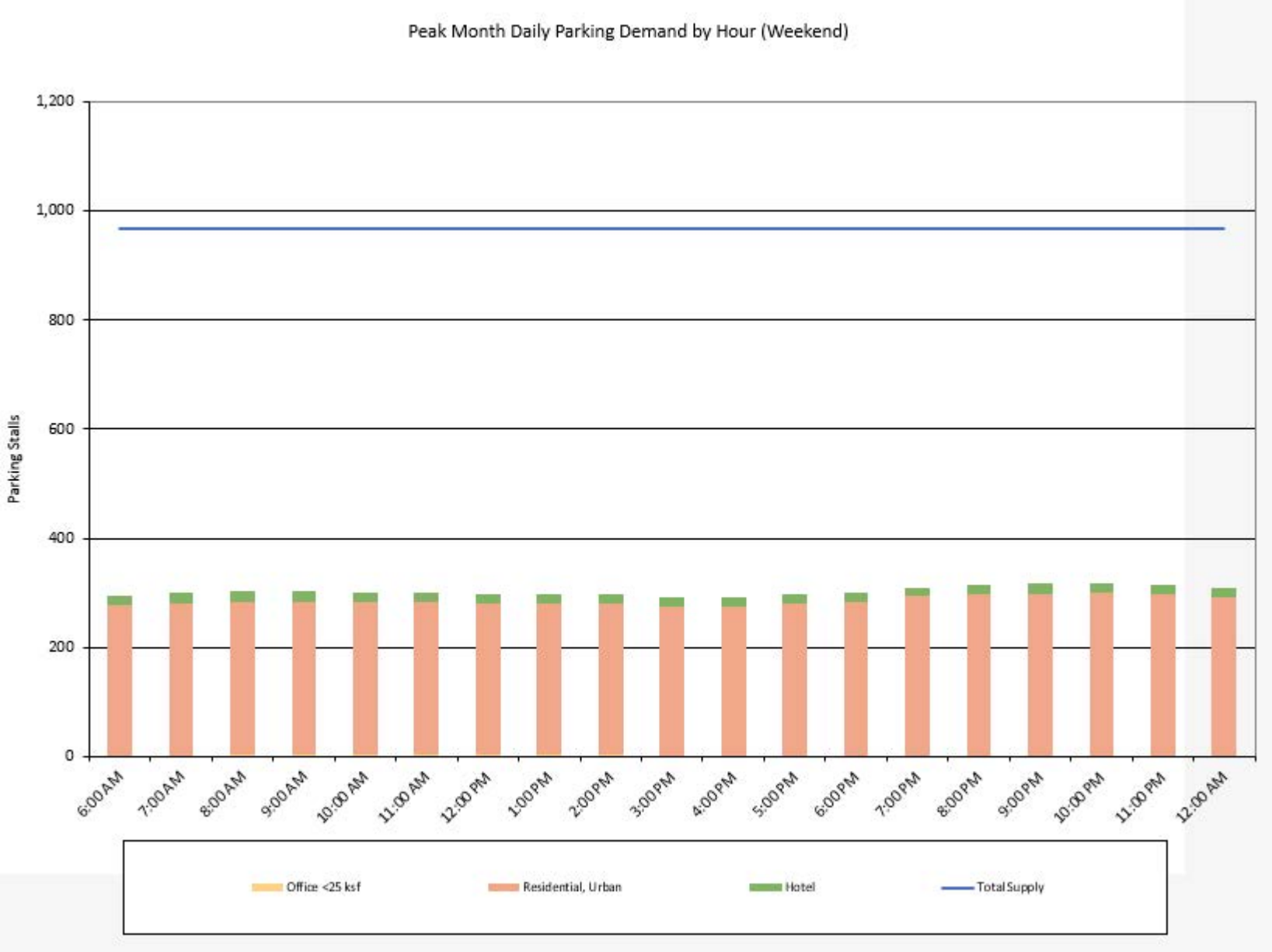
Customer/Visitor	20	Customer	43
Employee/Resident	64	Employee/Resident	21
Reserved	256	Reserved	256
Total	339	Total	319
Shared Parking Reduction	12%		9%

Project: Gateway Building
Description: Residential, Hotel, Office

Monthly Comparison Summary								
Month	Weekday							
	Overall Pk		AM Peak Hr		PM Peak Hr		Eve Peak Hr	
	Time	Demand	Time	Demand	Time	Demand	Time	Demand
January	10 AM	336	10 AM	336	2 PM	331	7 PM	310
February	10 AM	338	10 AM	338	2 PM	333	7 PM	311
March	10 AM	339	10 AM	339	2 PM	335	10 PM	313
April	10 AM	339	10 AM	339	2 PM	335	10 PM	313
May	10 AM	338	10 AM	338	2 PM	333	7 PM	311
June	10 AM	338	10 AM	338	2 PM	333	7 PM	311
July	10 AM	336	10 AM	336	2 PM	332	10 PM	311
August	10 AM	336	10 AM	336	2 PM	336	10 PM	311
September	10 AM	335	10 AM	335	2 PM	330	7 PM	309
October	10 AM	335	10 AM	335	2 PM	330	7 PM	309
November	10 AM	335	10 AM	335	2 PM	330	7 PM	309
December	10 AM	331	10 AM	331	2 PM	326	7 PM	305
Late December	10 AM	330	10 AM	330	2 PM	325	10 PM	313

Monthly Comparison Summary								
Month	Weekend							
	Overall Pk		AM Peak Hr		PM Peak Hr		Eve Peak Hr	
	Time	Demand	Time	Demand	Time	Demand	Time	Demand
January	10 PM	316	8 AM	300	12 PM	295	10 PM	316
February	10 PM	317	8 AM	302	12 PM	297	10 PM	317
March	10 PM	319	8 AM	304	12 PM	299	10 PM	319
April	10 PM	319	8 AM	304	12 PM	299	10 PM	319
May	10 PM	317	8 AM	302	12 PM	297	10 PM	317
June	10 PM	317	8 AM	302	12 PM	297	10 PM	317
July	10 PM	317	8 AM	303	12 PM	297	10 PM	317
August	10 PM	317	8 AM	303	12 PM	297	10 PM	317
September	10 PM	315	8 AM	299	12 PM	295	10 PM	315
October	10 PM	315	8 AM	299	12 PM	295	10 PM	315
November	10 PM	315	8 AM	299	12 PM	295	10 PM	315
December	10 PM	310	8 AM	294	12 PM	290	10 PM	310
Late December	10 PM	319	8 AM	303	12 PM	298	10 PM	319


Peak Month Daily Parking Demand by Hour (Weekday)
Parking Stalls
1,200
1,000
800
600
400
200
0
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
11:00 PM
12:00 AM
Office <25 ksf
Hotel
Residential, Urban
Total Supply


Peak Month Daily Parking Demand by Hour (Weekend)
1,200
1,000
800
600
400
200
0
Parking Stalls
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
11:00 PM
12:00 AM
Office <25 ksf
Residential, Urban
Hotel
Total Supply

APPENDIX C: LOS CALCULATIONS – EXISTING CONDITIONS

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↱	
Traffic Vol, veh/h	0	8	29	0	27	1
Future Vol, veh/h	0	8	29	0	27	1
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	78	78	78	78	78	78
Heavy Vehicles, %	2	0	0	2	8	0
Mvmt Flow	0	10	37	0	35	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	47	37
Stage 1	-	-	-	-	37	-
Stage 2	-	-	-	-	10	-
Critical Hdwy	-	-	-	-	6.48	6.2
Critical Hdwy Stg 1	-	-	-	-	5.48	-
Critical Hdwy Stg 2	-	-	-	-	5.48	-
Follow-up Hdwy	-	-	-	-	3.572	3.3
Pot Cap-1 Maneuver	0	-	-	0	948	1041
Stage 1	0	-	-	0	970	-
Stage 2	0	-	-	0	998	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	948	1041
Mov Cap-2 Maneuver	-	-	-	-	948	-
Stage 1	-	-	-	-	970	-
Stage 2	-	-	-	-	998	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	951
HCM Lane V/C Ratio	-	-	0.038
HCM Control Delay (s/veh)	-	-	8.9
HCM Lane LOS	-	-	A
HCM 95th %tile Q (veh)	-	-	0.1

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕				
Traffic Vol, veh/h	0	34	1	37	28	46	1	0	7	0	0	0
Future Vol, veh/h	0	34	1	37	28	46	1	0	7	0	0	0
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	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	2	6	0	24	0	4	0	0	0	2	2	2
Mvmt Flow	0	44	1	47	36	59	1	0	9	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	95	0	0	45	0	0	205	234	45
Stage 1	-	-	-	-	-	-	45	45	-
Stage 2	-	-	-	-	-	-	160	189	-
Critical Hdwy	4.12	-	-	4.34	-	-	6.4	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	2.218	-	-	2.416	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	1499	-	-	1433	-	-	788	670	1031
Stage 1	-	-	-	-	-	-	983	861	-
Stage 2	-	-	-	-	-	-	874	748	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1499	-	-	1433	-	-	760	0	1031
Mov Cap-2 Maneuver	-	-	-	-	-	-	760	0	-
Stage 1	-	-	-	-	-	-	983	0	-
Stage 2	-	-	-	-	-	-	843	0	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	2.5	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	987	1499	-	-	1433	-	-
HCM Lane V/C Ratio	0.01	-	-	-	0.033	-	-
HCM Control Delay (s/veh)	8.7	0	-	-	7.6	0	-
HCM Lane LOS	A	A	-	-	A	A	-
HCM 95th %tile Q (veh)	0	0	-	-	0.1	-	-

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↱	
Traffic Vol, veh/h	0	29	24	0	66	0
Future Vol, veh/h	0	29	24	0	66	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	73	73	73	73	73	73
Heavy Vehicles, %	2	7	4	2	2	0
Mvmt Flow	0	40	33	0	90	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	73	33
Stage 1	-	-	-	-	33	-
Stage 2	-	-	-	-	40	-
Critical Hdwy	-	-	-	-	6.42	6.2
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	-	-	3.518	3.3
Pot Cap-1 Maneuver	0	-	-	0	931	1046
Stage 1	0	-	-	0	989	-
Stage 2	0	-	-	0	982	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	931	1046
Mov Cap-2 Maneuver	-	-	-	-	931	-
Stage 1	-	-	-	-	989	-
Stage 2	-	-	-	-	982	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	931
HCM Lane V/C Ratio	-	-	0.097
HCM Control Delay (s/veh)	-	-	9.3
HCM Lane LOS	-	-	A
HCM 95th %tile Q (veh)	-	-	0.3

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕				
Traffic Vol, veh/h	1	94	0	3	24	22	0	0	31	0	0	0
Future Vol, veh/h	1	94	0	3	24	22	0	0	31	0	0	0
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	73	73	73	73	73	73	73	73	73	73	73	73
Heavy Vehicles, %	0	3	0	33	4	0	0	0	3	2	2	2
Mvmt Flow	1	129	0	4	33	30	0	0	42	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	63	0	0	129	0	0	187	202	129
Stage 1	-	-	-	-	-	-	131	131	-
Stage 2	-	-	-	-	-	-	56	71	-
Critical Hdwy	4.1	-	-	4.43	-	-	6.4	6.5	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	2.2	-	-	2.497	-	-	3.5	4	3.327
Pot Cap-1 Maneuver	1553	-	-	1286	-	-	807	698	918
Stage 1	-	-	-	-	-	-	900	792	-
Stage 2	-	-	-	-	-	-	972	840	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1553	-	-	1286	-	-	804	0	918
Mov Cap-2 Maneuver	-	-	-	-	-	-	804	0	-
Stage 1	-	-	-	-	-	-	899	0	-
Stage 2	-	-	-	-	-	-	969	0	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0.1	0.5	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	918	1553	-	-	1286	-	-
HCM Lane V/C Ratio	0.046	0.001	-	-	0.003	-	-
HCM Control Delay (s/veh)	9.1	7.3	0	-	7.8	0	-
HCM Lane LOS	A	A	A	-	A	A	-
HCM 95th %tile Q (veh)	0.1	0	-	-	0	-	-

APPENDIX D: LOS CALCULATIONS – BACKGROUND CONDITIONS

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↾	
Traffic Vol, veh/h	0	8	29	0	27	1
Future Vol, veh/h	0	8	29	0	27	1
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	78	78	78	78	78	78
Heavy Vehicles, %	2	0	0	2	8	0
Mvmt Flow	0	10	37	0	35	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	47	37
Stage 1	-	-	-	-	37	-
Stage 2	-	-	-	-	10	-
Critical Hdwy	-	-	-	-	6.48	6.2
Critical Hdwy Stg 1	-	-	-	-	5.48	-
Critical Hdwy Stg 2	-	-	-	-	5.48	-
Follow-up Hdwy	-	-	-	-	3.572	3.3
Pot Cap-1 Maneuver	0	-	-	0	948	1041
Stage 1	0	-	-	0	970	-
Stage 2	0	-	-	0	998	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	948	1041
Mov Cap-2 Maneuver	-	-	-	-	948	-
Stage 1	-	-	-	-	970	-
Stage 2	-	-	-	-	998	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	951
HCM Lane V/C Ratio	-	-	0.038
HCM Control Delay (s/veh)	-	-	8.9
HCM Lane LOS	-	-	A
HCM 95th %tile Q (veh)	-	-	0.1

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕				
Traffic Vol, veh/h	0	34	1	37	28	47	1	0	7	0	0	0
Future Vol, veh/h	0	34	1	37	28	47	1	0	7	0	0	0
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	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	2	6	0	24	0	4	0	0	0	2	2	2
Mvmt Flow	0	44	1	47	36	60	1	0	9	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	96	0	0	45	0	0	205	235	45
Stage 1	-	-	-	-	-	-	45	45	-
Stage 2	-	-	-	-	-	-	160	190	-
Critical Hdwy	4.12	-	-	4.34	-	-	6.4	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	2.218	-	-	2.416	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	1498	-	-	1433	-	-	788	669	1031
Stage 1	-	-	-	-	-	-	983	861	-
Stage 2	-	-	-	-	-	-	874	747	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1498	-	-	1433	-	-	760	0	1031
Mov Cap-2 Maneuver	-	-	-	-	-	-	760	0	-
Stage 1	-	-	-	-	-	-	983	0	-
Stage 2	-	-	-	-	-	-	843	0	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	2.5	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	987	1498	-	-	1433	-	-
HCM Lane V/C Ratio	0.01	-	-	-	0.033	-	-
HCM Control Delay (s/veh)	8.7	0	-	-	7.6	0	-
HCM Lane LOS	A	A	-	-	A	A	-
HCM 95th %tile Q (veh)	0	0	-	-	0.1	-	-

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↾	
Traffic Vol, veh/h	0	29	24	0	67	0
Future Vol, veh/h	0	29	24	0	67	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	73	73	73	73	73	73
Heavy Vehicles, %	2	7	4	2	2	0
Mvmt Flow	0	40	33	0	92	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	73	33
Stage 1	-	-	-	-	33	-
Stage 2	-	-	-	-	40	-
Critical Hdwy	-	-	-	-	6.42	6.2
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	-	-	3.518	3.3
Pot Cap-1 Maneuver	0	-	-	0	931	1046
Stage 1	0	-	-	0	989	-
Stage 2	0	-	-	0	982	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	931	1046
Mov Cap-2 Maneuver	-	-	-	-	931	-
Stage 1	-	-	-	-	989	-
Stage 2	-	-	-	-	982	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	931
HCM Lane V/C Ratio	-	-	0.099
HCM Control Delay (s/veh)	-	-	9.3
HCM Lane LOS	-	-	A
HCM 95th %tile Q (veh)	-	-	0.3

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕				
Traffic Vol, veh/h	1	95	0	3	24	22	0	0	31	0	0	0
Future Vol, veh/h	1	95	0	3	24	22	0	0	31	0	0	0
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	73	73	73	73	73	73	73	73	73	73	73	73
Heavy Vehicles, %	0	3	0	33	4	0	0	0	3	2	2	2
Mvmt Flow	1	130	0	4	33	30	0	0	42	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	63	0	0	130	0	0	188	203	130
Stage 1	-	-	-	-	-	-	132	132	-
Stage 2	-	-	-	-	-	-	56	71	-
Critical Hdwy	4.1	-	-	4.43	-	-	6.4	6.5	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	2.2	-	-	2.497	-	-	3.5	4	3.327
Pot Cap-1 Maneuver	1553	-	-	1285	-	-	806	697	917
Stage 1	-	-	-	-	-	-	899	791	-
Stage 2	-	-	-	-	-	-	972	840	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1553	-	-	1285	-	-	803	0	917
Mov Cap-2 Maneuver	-	-	-	-	-	-	803	0	-
Stage 1	-	-	-	-	-	-	898	0	-
Stage 2	-	-	-	-	-	-	969	0	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0.1	0.5	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	917	1553	-	-	1285	-	-
HCM Lane V/C Ratio	0.046	0.001	-	-	0.003	-	-
HCM Control Delay (s/veh)	9.1	7.3	0	-	7.8	0	-
HCM Lane LOS	A	A	A	-	A	A	-
HCM 95th %tile Q (veh)	0.1	0	-	-	0	-	-

APPENDIX E: LOS CALCULATIONS – FULL BUILD CONDITION

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	14	31	3	8	0
Future Vol, veh/h	0	14	31	3	8	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	0	0	2	2	2
Mvmt Flow	0	15	34	3	9	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	37	0	-	0	51	36
Stage 1	-	-	-	-	36	-
Stage 2	-	-	-	-	15	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1574	-	-	-	958	1037
Stage 1	-	-	-	-	986	-
Stage 2	-	-	-	-	1008	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1574	-	-	-	958	1037
Mov Cap-2 Maneuver	-	-	-	-	958	-
Stage 1	-	-	-	-	986	-
Stage 2	-	-	-	-	1008	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0	0	8.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1574	-	-	-	958
HCM Lane V/C Ratio	-	-	-	-	0.009
HCM Control Delay (s/veh)	0	-	-	-	8.8
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q (veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↱	
Traffic Vol, veh/h	0	22	34	0	68	1
Future Vol, veh/h	0	22	34	0	68	1
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	78	78	78	78	78	78
Heavy Vehicles, %	2	0	0	2	8	0
Mvmt Flow	0	28	44	0	87	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	72	44
Stage 1	-	-	-	-	44	-
Stage 2	-	-	-	-	28	-
Critical Hdwy	-	-	-	-	6.48	6.2
Critical Hdwy Stg 1	-	-	-	-	5.48	-
Critical Hdwy Stg 2	-	-	-	-	5.48	-
Follow-up Hdwy	-	-	-	-	3.572	3.3
Pot Cap-1 Maneuver	0	-	-	0	917	1032
Stage 1	0	-	-	0	963	-
Stage 2	0	-	-	0	979	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	917	1032
Mov Cap-2 Maneuver	-	-	-	-	917	-
Stage 1	-	-	-	-	963	-
Stage 2	-	-	-	-	979	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	918
HCM Lane V/C Ratio	-	-	0.096
HCM Control Delay (s/veh)	-	-	9.3
HCM Lane LOS	-	-	A
HCM 95th %tile Q (veh)	-	-	0.3

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕				
Traffic Vol, veh/h	0	89	1	37	33	64	1	0	7	0	0	0
Future Vol, veh/h	0	89	1	37	33	64	1	0	7	0	0	0
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	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	2	6	0	24	0	4	0	0	0	2	2	2
Mvmt Flow	0	114	1	47	42	82	1	0	9	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	124	0	0	115	0	0	292	333	115
Stage 1	-	-	-	-	-	-	115	115	-
Stage 2	-	-	-	-	-	-	177	218	-
Critical Hdwy	4.12	-	-	4.34	-	-	6.4	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	2.218	-	-	2.416	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	1463	-	-	1348	-	-	703	590	943
Stage 1	-	-	-	-	-	-	915	804	-
Stage 2	-	-	-	-	-	-	859	726	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1463	-	-	1348	-	-	676	0	943
Mov Cap-2 Maneuver	-	-	-	-	-	-	676	0	-
Stage 1	-	-	-	-	-	-	915	0	-
Stage 2	-	-	-	-	-	-	826	0	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	2.1	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	899	1463	-	-	1348	-	-
HCM Lane V/C Ratio	0.011	-	-	-	0.035	-	-
HCM Control Delay (s/veh)	9.1	0	-	-	7.8	0	-
HCM Lane LOS	A	A	-	-	A	A	-
HCM 95th %tile Q (veh)	0	0	-	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	34	30	10	7	0
Future Vol, veh/h	0	34	30	10	7	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	7	4	2	2	2
Mvmt Flow	0	37	33	11	8	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	44	0	-	0	76	39
Stage 1	-	-	-	-	39	-
Stage 2	-	-	-	-	37	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1564	-	-	-	927	1033
Stage 1	-	-	-	-	983	-
Stage 2	-	-	-	-	985	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1564	-	-	-	927	1033
Mov Cap-2 Maneuver	-	-	-	-	927	-
Stage 1	-	-	-	-	983	-
Stage 2	-	-	-	-	985	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1564	-	-	-	927
HCM Lane V/C Ratio	-	-	-	-	0.008
HCM Control Delay (s/veh)	0	-	-	-	8.9
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q (veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↾	
Traffic Vol, veh/h	0	41	40	0	101	0
Future Vol, veh/h	0	41	40	0	101	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	73	73	73	73	73	73
Heavy Vehicles, %	2	7	4	2	2	0
Mvmt Flow	0	56	55	0	138	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	111	55
Stage 1	-	-	-	-	55	-
Stage 2	-	-	-	-	56	-
Critical Hdwy	-	-	-	-	6.42	6.2
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	-	-	3.518	3.3
Pot Cap-1 Maneuver	0	-	-	0	886	1018
Stage 1	0	-	-	0	968	-
Stage 2	0	-	-	0	967	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	886	1018
Mov Cap-2 Maneuver	-	-	-	-	886	-
Stage 1	-	-	-	-	968	-
Stage 2	-	-	-	-	967	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0	0	9.8
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	886
HCM Lane V/C Ratio	-	-	0.156
HCM Control Delay (s/veh)	-	-	9.8
HCM Lane LOS	-	-	A
HCM 95th %tile Q (veh)	-	-	0.6

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕				
Traffic Vol, veh/h	1	141	0	3	40	70	0	0	31	0	0	0
Future Vol, veh/h	1	141	0	3	40	70	0	0	31	0	0	0
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	73	73	73	73	73	73	73	73	73	73	73	73
Heavy Vehicles, %	0	3	0	33	4	0	0	0	3	2	2	2
Mvmt Flow	1	193	0	4	55	96	0	0	42	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	151	0	0	193	0	0	306	354	193
Stage 1	-	-	-	-	-	-	195	195	-
Stage 2	-	-	-	-	-	-	111	159	-
Critical Hdwy	4.1	-	-	4.43	-	-	6.4	6.5	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	2.2	-	-	2.497	-	-	3.5	4	3.327
Pot Cap-1 Maneuver	1442	-	-	1215	-	-	690	574	846
Stage 1	-	-	-	-	-	-	843	743	-
Stage 2	-	-	-	-	-	-	919	770	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1442	-	-	1215	-	-	687	0	846
Mov Cap-2 Maneuver	-	-	-	-	-	-	687	0	-
Stage 1	-	-	-	-	-	-	842	0	-
Stage 2	-	-	-	-	-	-	915	0	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0.1	0.2	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	846	1442	-	-	1215	-	-
HCM Lane V/C Ratio	0.05	0.001	-	-	0.003	-	-
HCM Control Delay (s/veh)	9.5	7.5	0	-	8	0	-
HCM Lane LOS	A	A	A	-	A	A	-
HCM 95th %tile Q (veh)	0.2	0	-	-	0	-	-