

MARCON Developments Ltd.

Transportation Assessment and Management Study for the Proposed Hotel and Serviced Apartments at 2030 Barclay Street, Vancouver, BC

TAMS Report

May 8, 2025



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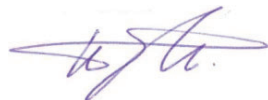
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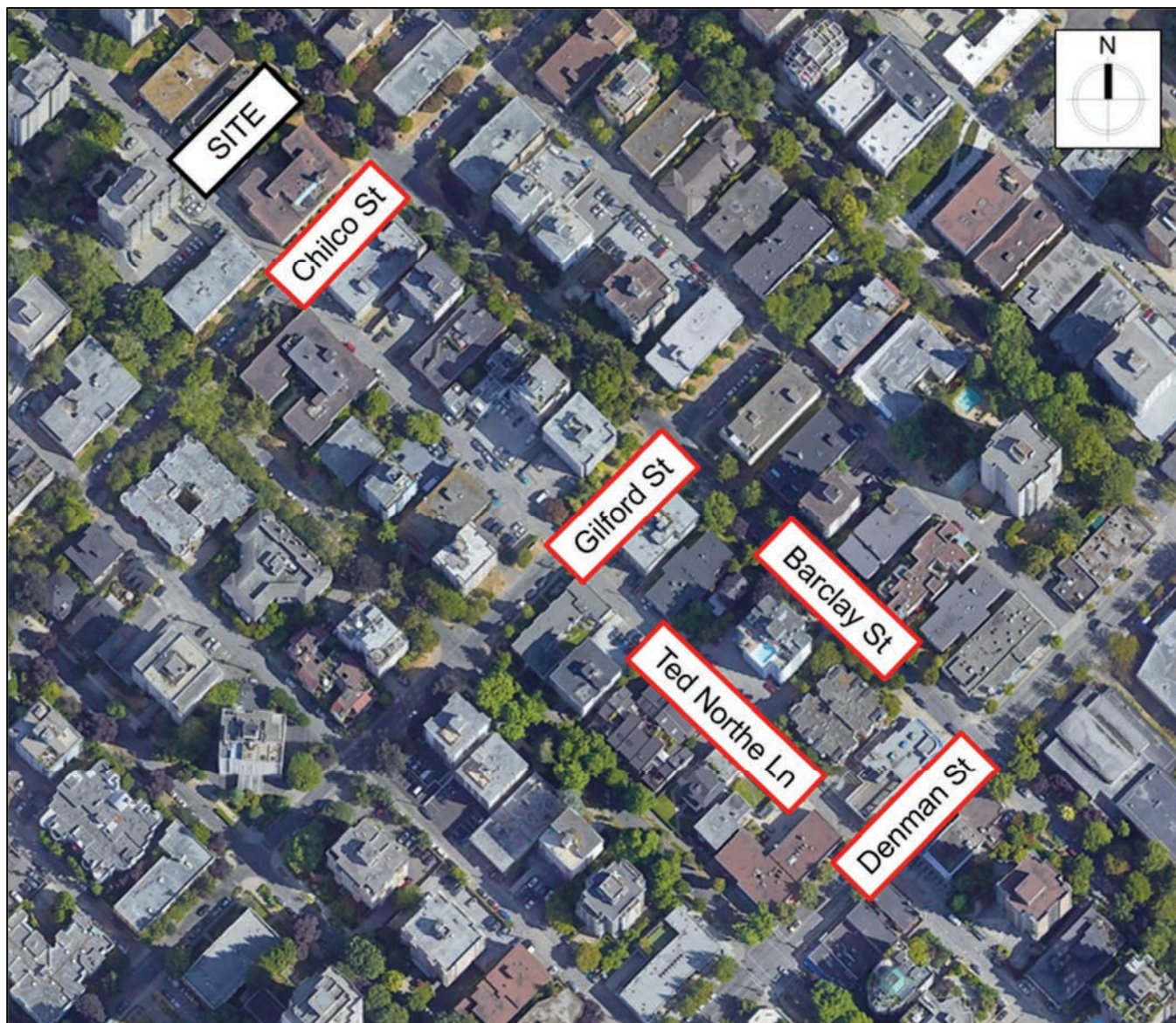
1 Introduction

Arcadis has been retained by MARCON Developments Ltd. to undertake a Transportation Assessment and Management Study (TAMS) for the proposed redevelopment of the Rosellen Suites at Stanley Park Hotel. The project involves replacing the existing hotel with a new 27-story building comprising 270 units, significantly increasing accommodation capacity. The underground parking for the new hotel will be accessed through a shared ramp from Ted Northe Lane. Exhibit 1-1 provides an overview of the site and its context within Vancouver's City Center, while Exhibit 1-2 highlights the specific location of the proposed development.

Exhibit 1-1: Context Plan



Exhibit 1-2: Site Location



The main objective of the Transportation Assessment and Management Study (TAMS) is to identify necessary road, traffic, and alternative transportation improvements to support the proposed development. This study involves analyzing the impact of site-generated trips on the surrounding road network and identifying corresponding mitigation measures. These measures are intended to upgrade or enhance the operational efficiency of the transportation system near the development. The study also assesses the configuration and adequacy of site access, while also determining bylaw requirements for car parking, bicycle parking, and loading facilities.

The TAMS has been conducted in accordance with the City of Vancouver's Transportation Assessment and Management Study Guidelines for Consultants (July 2018) and is based on the latest development statistics

provided by the architects in early May 2025. This ensures that all analysis and recommendations are aligned with current city regulations and project details.

1.1 Study Area and Study Intersections

Given that the primary vehicle access routes to the proposed development are Barclay Street, Ted Northe Lane, and Denman Street, this Transportation Assessment and Management Study (TAMS) concentrates on the key intersections in the vicinity of these routes. Exhibit 1-3 illustrates the key study intersections.

Exhibit 1-3: Study Intersections



1.2 Peak Hours

The study considers the following peak hours:

- Weekday morning (AM)
- Weekday afternoon (PM)

1.3 Study Horizons and Scenarios

Since Vancouver's Transportation 2040 Plan forecasts a significant increase in trips made by sustainable modes by 2040, with a slight decrease in motor vehicle volumes, this study assumes there will be no background traffic growth in the future. The following scenarios are analyzed for the purposes of this study:

- Existing
- Future Build-out (including additional trips generated by the proposed development).

2 Proposed Development

This section presents the proposed development plan and a vehicular access plan.

2.1 Development Characteristics

The proposed development at 2030 Barclay Street involves demolishing the existing structure (with 27 suites) to construct a 27-story tower that will house both residential and commercial spaces. The residential section will consist of 270 hotel rooms, while the commercial section will feature a restaurant. The project's Gross Floor Areas (GFA) are as follows:

- Hotel: 15,238.68 m²
- Restaurant: 230.79 m²

Exhibit 2-1 provides a 3D rendering of the proposed development to visually represent the project.

Exhibit 2-1: Development 3D View



2.2 Development Staging

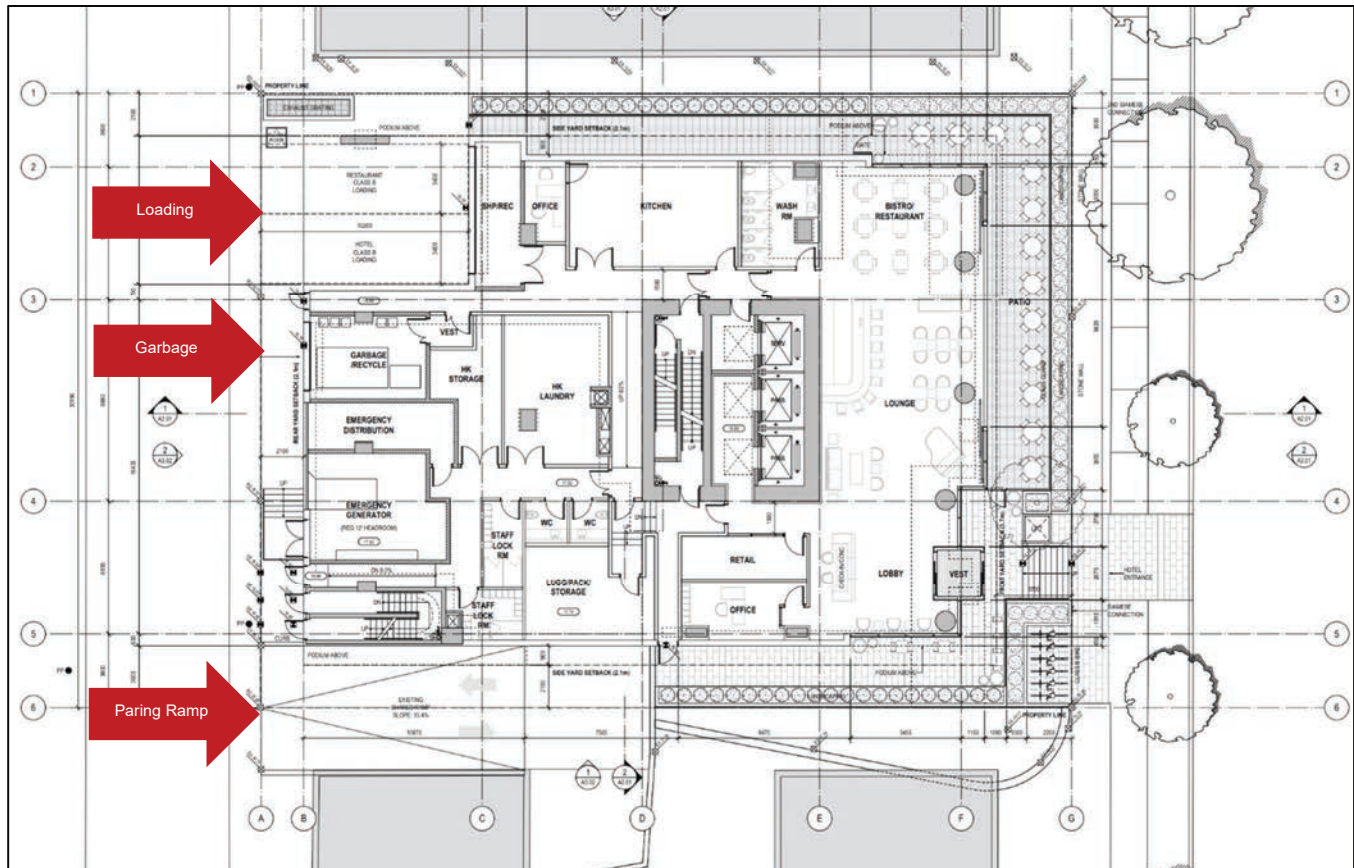
For analysis purposes, it was assumed that the development will:

- be constructed in a single phase and
- commence immediately upon approval, with a completion target of 2028.

2.3 Proposed Development Vehicle Access

The development proposes a single vehicle access point for the underground parking. Garbage, recycling, and loading operations will be handled at-grade along Ted Northe Lane as shown in Exhibit 2-2.

Exhibit 2-2: Development Vehicle Access Point



3 Existing and Future Conditions

This section presents the existing road network, traffic volumes and traffic controls, as well as pedestrian, bicycle, and transit network connections around the proposed development.

3.1 Provision for Non-Auto Modes

3.1.1 Active Transportation Network

Currently, the active transportation network consists of sidewalks and bicycles routes.

Sidewalks on all study roads (see Exhibit 3-1) are as follows:

- Good sidewalk connections, including both abutting sidewalks and separated sidewalks, exist between the site and most of the surrounding area. The sidewalks along most streets are separated from the roadway through the use of green boulevards, whereas the sidewalks along Denman Street are directly adjacent to the roadway.
- The majority of the sidewalks in this area are in good pavement condition with necessary let downs in place (for an example see Exhibit 3-2).
- Signalized Denman Street and Barclay Street intersection provides crosswalks, with attention strips where the roadway connects to the sidewalk.

As per the City of Vancouver Transportation 2040 Plan, the study site and its surrounding roadways are identified as one of the priority locations for widening sidewalks (Downtown Peninsula). The Plan aims for a robust sidewalk widening approach because generous and unobstructed sidewalk space encourages and supports more walking and street activity and thus working towards a sustainable transportation system in the long run.

Exhibit 3-1: Existing Pedestrian Network



Exhibit 3-2: Existing Nearby Sidewalks



Bicycle routes in site proximity comprise the following (see Exhibit 3-3):

- Connected All-Ages-and-Abilities (AAA) Network is provided at site's close proximity along Chilco Street (Exhibit 3-4), Haro Street, and Comox Street, as a local street bikeway where cyclists share roadway with motor vehicles on a relatively quiet neighborhood street.
- Painted bike lanes along Alberni Street (Exhibit 3-5) and W Georgia Street connecting the site to Burrard Skytrain station.

Exhibit 3-3: Existing Cycling Network

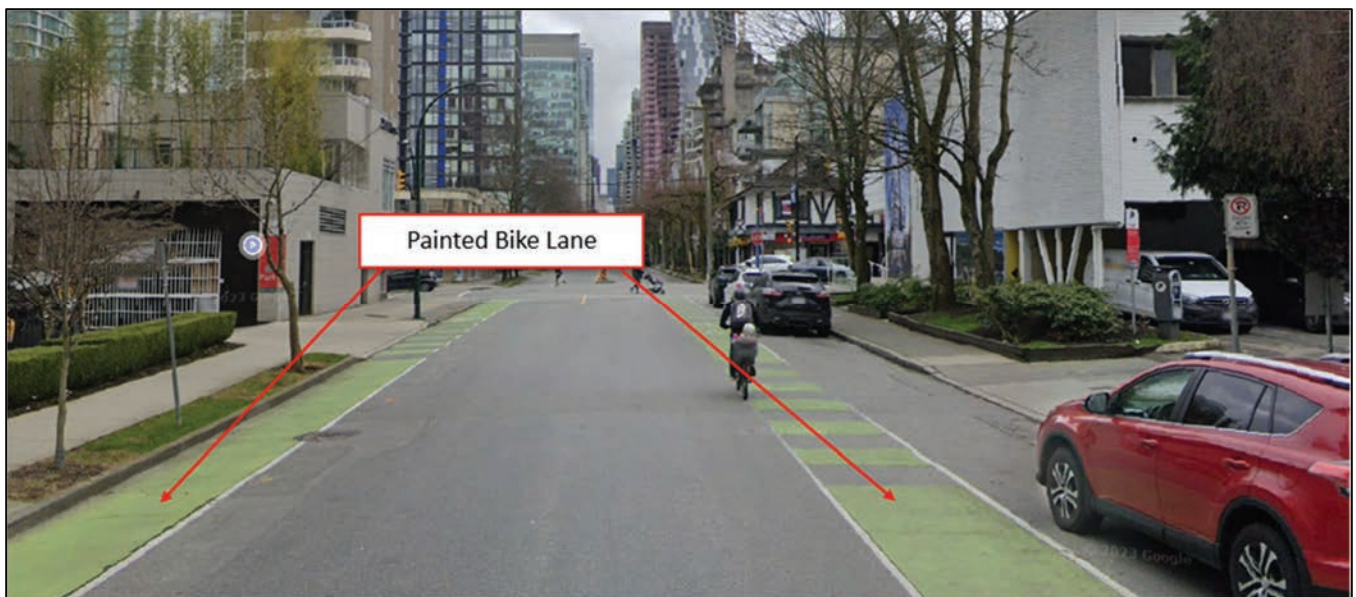


Source: Adopted from City of Vancouver – Cycling Vancouver Map, available at: <https://vancouver.ca/files/cov/map-cycling-vancouver.pdf>

Exhibit 3-4: Existing Local Street Bikeway at Chilco Street



Exhibit 3-5: Painted Bicycle Lane on Alberni Street

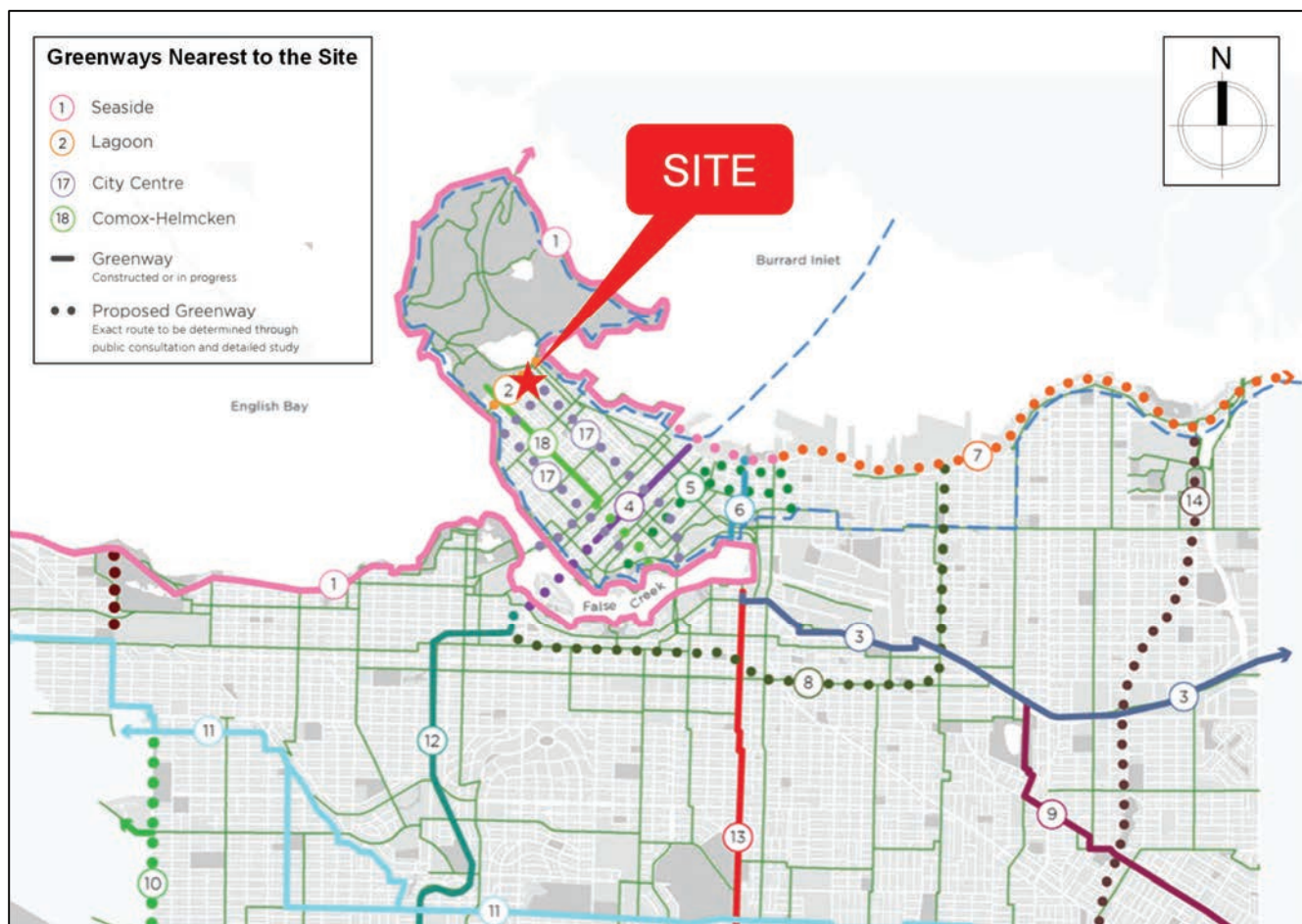


In addition to regular sidewalks and cycle routes, City of Vancouver's Greenway program provides extensive connections to important destinations throughout the City for both pedestrians and cyclists alike, while working towards the City's goal of being a more sustainable place to live. Overlapping at places with regular cycling and pedestrian infrastructure, the greenways accommodate features like expanded parks, public art and drinking fountain making walking and biking more attractive and comfortable, even for less confident cyclists.

The proposed development site is well connected with the greater pathway system of the City, through the network of continuous sidewalks and bicycle lanes, as indicated in Exhibit 3-6.

- The closest Greenway to the site includes Comox-Helmcken (#17 in Exhibit 3-6), which materialized from being a priority route in City's Transportation 2040 Plan. The bike routes on Chilco St also connects to it. This Greenway works an important east-west connection through Downtown. Once fully complete, it will connect from False Creek to Stanley Park for both pedestrians and cyclists.
- The Seaside Greenway (#1 in Exhibit 3-6) is also within 400 m of walking distance to the site. The path follows the Great Trail from the Vancouver Convention Centre, along Coal Harbour, around Stanley Park Seawall and False Creek, to further west. As a dedicated bike path separated from cars, it provides safety and comfort for riders of all ages and abilities, along with pedestrians and joggers.
- Two other proposed greenways are expected to be in close proximity to the site; namely #2- Lagoon Dr and #17-City Centre.

Exhibit 3-6: City of Vancouver Greenway Network Relevant to the Site



Source: Adopted from City of Vancouver – City Greenway Network Map, available at: [chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://vancouver.ca/files/cov/city-greenways-network-map.pdf](https://vancouver.ca/files/cov/city-greenways-network-map.pdf)

3.1.2 Bike Share

The site is conveniently located within a short walking distance of a Mobi bike-share station on Chilco Street, just south of Barclay Street, approximately 60 meters from the development. This station offers an excellent opportunity for alternative transportation.

3.1.3 Transit Network

The proposed development is situated in close proximity to the transit network at Denman Street (within ~400m), including bus stops in both direction, that provide hotel staff as well as the guests with a competitive alternative mode of transportation (see Exhibit 3-7). The operational detail of the route is summarized in Exhibit 3-8.

Exhibit 3-7: Existing Transit Network

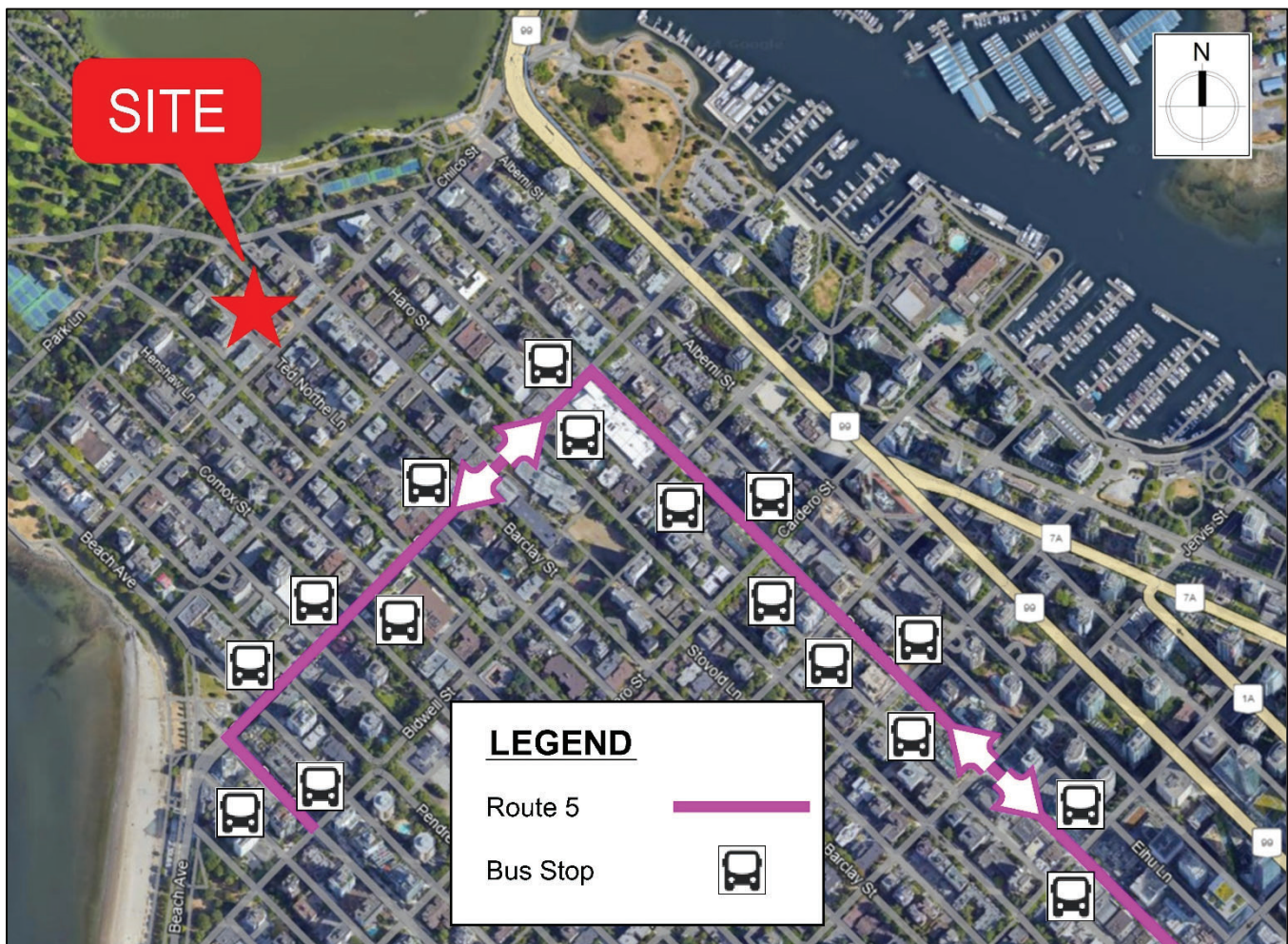


Exhibit 3-8: Nearby Transit Route Summary

Route #	Route Name	From -To Locations	Nearest Stop to the Site	Running Days	Peak Headway
5	Downtown - Robson	From Cambie Street at Dunsmuir Street station via Central Vancouver and West End to Davie Street at Denman Street station	Stop # 50630 – Denman St @ Barclay St	All Week	8 to 9 minutes

3.2 Road Network and Traffic Controls

The existing streets in the study area are listed in Exhibit 3-9.

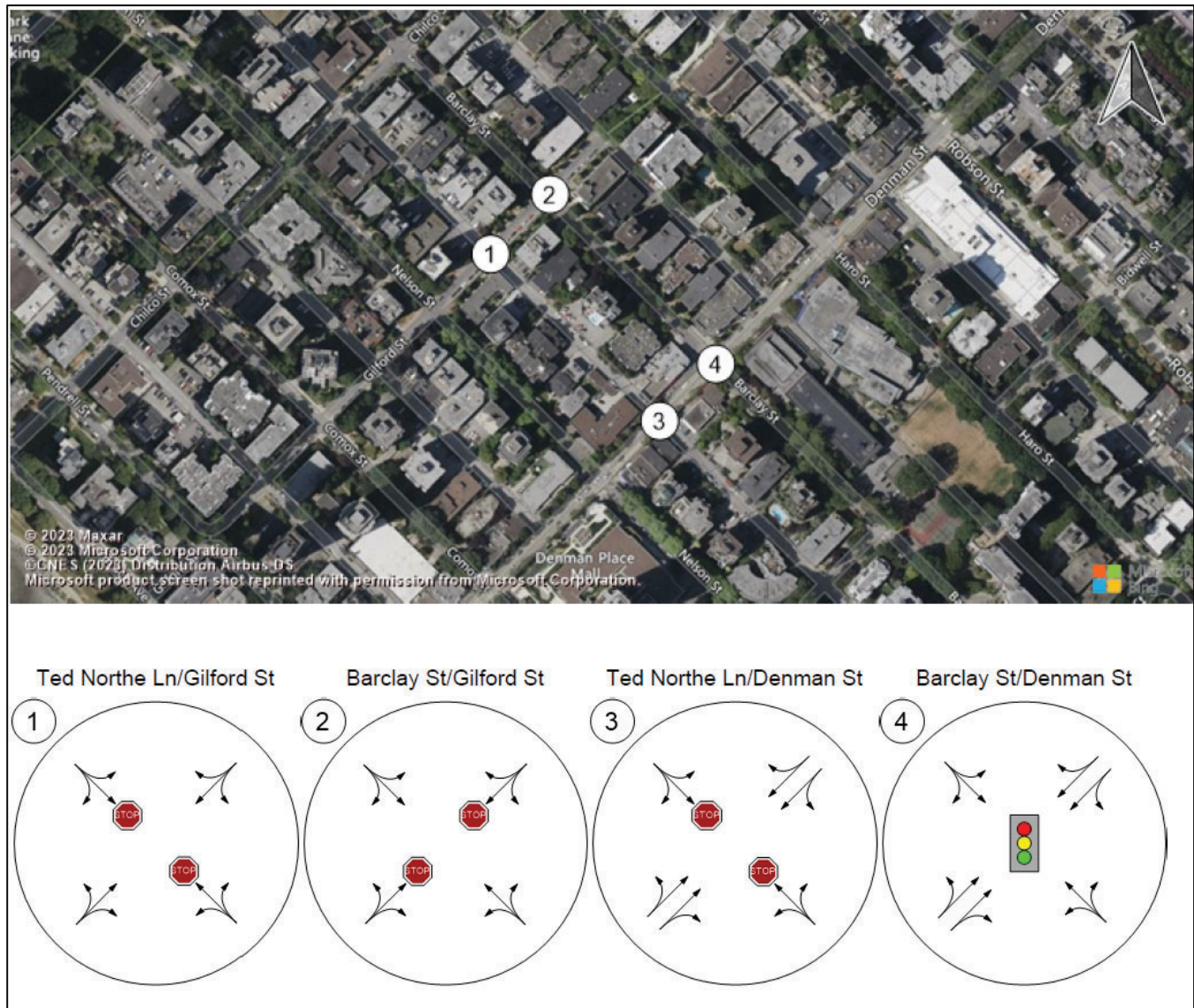
Exhibit 3-9: Study Roads – Existing Conditions

Name	Existing Number of Lanes	Classification ¹
Denman Street	4 travel lanes	Arterial
Gilford Street	2 travel lanes	Residential
Barclay Street	2 travel lanes	Residential
Ted Northe Lane	2 travel lanes	Residential

1. Per the City of Vancouver Open Data online Portal, available at: <https://opendata.vancouver.ca/map/+335eb1fbdeba4c42/edit/>

The lane configuration and intersection control of the study intersections are illustrated in Exhibit 3-10.

Exhibit 3-10: Study Intersections – Existing Traffic Control and Lane Configuration



3.3 Demand Forecasting

3.3.1 Existing Traffic Volumes

The baseline data for the existing scenario was established as follows:

- The traffic counts conducted by Arcadis on February 29, 2024, were used to determine the existing traffic volumes at the study intersections.
- Volume balancing:
 - Traffic volumes along Gilford Street were balanced at the study intersections ID#1 and ID#2 to ensure consistency in vehicle flow across the corridor.

- Similarly, traffic volumes along Denman Street were balanced at the study intersections ID#3 and ID#4.
- Unbalanced traffic volumes:
 - Traffic volumes along Barclay Street have not been balanced due to the presence of on-street parking and nearby building parking entrances, which contribute to irregular traffic flow.
 - Traffic volumes along Ted Northern Lane have also not been balanced for similar reasons, including the influence of on-street parking and nearby building parking entrances.

Arcadis carried out short-duration traffic counts in April 2025 at the intersections of Barclay Street with Gilford Street and Denman Street (ID#2, ID#4) to assess traffic levels. These counts were compared to data collected at the same locations in February 2024 to identify any notable changes in traffic patterns over time. The analysis revealed no increase in traffic volumes between 2024 and 2025. Consequently, the turning movement counts from 2024 were utilized to conduct traffic analysis. The existing 2024 traffic volumes are presented in Appendix A.

3.3.2 Future Background Traffic Volumes

As noted in Section 1.3, the Transportation 2040 Plan predicts a slight decline in motor vehicle volumes by 2040, indicating that vehicle traffic in Vancouver is expected to decrease over time.

This projection is further supported by the findings from the traffic volume comparison conducted as part of this study, which revealed no increase in traffic volumes between February 2024 and April 2025 at key study intersections (ID#2 and ID#4).

In alignment with recommendations from City staff, no background traffic increase was assumed as part of the TAMS analysis. This assumption is consistent with the Transportation 2040 Plan and reflects the expectation that vehicular traffic volumes will remain constant up to the projected future build-out. Consequently, no growth rate was applied to establish future background traffic volumes, ensuring a conservative basis for evaluating future scenarios.

3.3.3 Development Traffic Volumes

The development trips were estimated using the following methodology:

- Site-generated¹ traffic was initially calculated using the Institute of Transportation Engineers (ITE) 11th Edition, specifically the "Hotel" land use code. The ITE manual defines hotel as a place of lodging with supporting facilities including restaurant, cocktail lounge, meeting/banquet rooms and convention facilities. As shown in Exhibit 3-11, the total (unadjusted) vehicle trips generated by the development are 124 during the AM peak hour and 159 during the PM peak hour.
- To adjust these estimates, the ITE trip rates were modified using the auto mode splits (50%), based on the City of Vancouver's Transportation 2040 Plan (Exhibit 3-12). After this adjustment, the development is expected to add:
 - 62 vehicle trips during the weekday morning peak hour; and
 - 80 vehicle trips during the weekday afternoon peak hour.

Vehicle trips generated by the existing development were not deducted from the proposed development's trip estimates, so the analysis provides total future trips instead of net future trips. Adding these to the existing background traffic results in a more conservative forecast.

Exhibit 3-11: Trip Generation – Proposed Development (Unadjusted)

Land Use	Hotel	
Peak Hour	AM	PM
ITE Code (11 Edition)	310	
ITE Trip Generation (Average Rate)	0.46	0.59
Development (Rooms)	270	270
% Inbound	56%	51%
In	70	81
Out	54	78
Total Traffic (veh/hr)	124	159

Exhibit 3-12: Trip Generation – Proposed Development (Projected Trend)

Auto Mode Split %	50%	
Peak Hour	AM	PM
Total	124	159
In (with 50% mode split)	35	41
Out (with 50% mode split)	27	39
Total Traffic (veh/hr)	62	80

3.3.4 Development Traffic Distribution and Assignment

Site-generated traffic was distributed and assigned to the site access point and the roadway network in proportion to the distribution/directionality of the existing traffic patterns (see Exhibit 3-13).

Exhibit 3-13: Site Trip Distribution

Peak Period	AM Peak Hour		PM Peak Hour	
Location	To	From	To	From
Gilford Street, North of Barclay Street	1%	1%	2%	1%
Denman Street, North of Barclay Street	36%	55%	50%	42%
Barclay Street, East of Denman Street	6%	6%	4%	7%
Ted Northe Lane, East of Denman Street	1%	0%	2%	2%
Denman Street, South of Ted Northe Lane	53%	36%	42%	44%
Gilford Street, South of Ted Northe Lane	3%	2%	2%	3%
Total	100%	100%	100%	100%

Note: Any apparent discrepancies in the subtotals are due to rounding of the numbers.

The site traffic volumes at study intersections are shown in Appendix B.

3.3.5 Future Combined Traffic Volumes

The combined traffic volumes were calculated by adding the future site-generated traffic volumes to the existing traffic volumes, which represent the background traffic volumes. You can find the resulting combined traffic volumes in Appendix C.

4 Transportation Impact Analysis and Community Transportation Impact Analysis

This section presents the transportation analysis undertaken to obtain a clear understanding of both the transportation-related implications of the proposed development and the improvements necessary to ensure acceptable operating conditions.

The following transportation analyses were performed:

- Intersection Capacity Analysis,
- On-Site Vehicle Circulation Analysis.
- Safety Review.

4.1 Intersection Capacity Analysis

A capacity analysis was carried out by using the Highway Capacity Manual (HCM 2010) methodology and specifically the Synchro software.

Grading criteria are different for signalized versus unsignalized intersections. The Level-of-Service (LOS) for unsignalized two-way stop-controlled (TWSC), all-way stop-controlled (AWSC) or a roundabout is determined by the calculated delay for each critical movement. LOS 'A' represents minimal delay for minor-street traffic movements while LOS 'F' indicates inadequate gaps for minor-street traffic to enter the intersection. The LOS for a signalized intersection includes additional factors such as geometry, signal phase/timing and vehicle and pedestrian volumes.

The following intersection performance criteria were used to assess traffic operations under existing and future conditions:

- Overall Level of Services 'D' or better.
- Volume/capacity (v/c) ratio of 0.85 or less.
- Individual Level of Services 'E' or better.
- Individual Volume/Capacity (v/c) ratio of 0.90 or less.

This study covers the following scenarios:

- Background Traffic - Existing.
- Background + Site Traffic - Future Build-out.

For the purpose of this analysis, the following should be noted:

- The intersection at Barclay Street and Denman Street currently operates with a pedestrian-actuated half-signal. However, this type of control can't be modeled in Synchro. To address this, a workaround has been proposed: applying semi-actuated uncoordinated control with pedestrian recall mode to allow the intersection to enter signal phase when pedestrians pressing calls at the intersection. This approach seems reasonable due to the high pedestrian demand that triggers the crossing signal, allowing traffic on Barclay Street to enter the intersection when pedestrians cross Denman Street.

- The analysis of the intersection at Barclay Street and Denman Street was conducted in isolation, without considering the operational effects on other signalized intersections along Denman Street. Consequently, the impact of traffic queue spillbacks along Denman Street was not accounted for in the Synchro software analysis. However, during on-site observations during peak traffic periods, queue spillbacks along Denman Street were noted.
- The intersections of Ted Northe Lane with Denman Street and Gilford Street are both two-way stop-controlled, with Denman Street and Gilford Street operating free-flow, respectively.
- None of the study intersections have dedicated left-turn storage lanes; left-turn movements share lanes with through traffic. As a result, a direct comparison of queue lengths with available storage capacity was not possible.

The remainder of this section presents the traffic performance for the study intersections relative to the above criteria. Where traffic operations exceed the thresholds, it has been shown with red colors.

- Exhibit 4-1 and Exhibit 4-4 provide a summary of the overall and individual performance metrics for the existing and future combined traffic scenarios at the study intersections.
- The detailed Synchro report outputs are provided in Appendices D and E.

Exhibit 4-1: Traffic Analysis Summary – Signalized Intersection, Existing Traffic Volumes

Intersection	Intersection			Movement	LOS	Delay (s)	v/c Ratio	95th Percentile Queue (m)
	LOS	Delay (s)	Max v/c Ratio					
AM Peak Hour								
Denman Street & Barclay Street	A	10	0.49	EB L/T/R	A	7	0.10	7
				WB L/T/R	A	6	0.10	6
				NB L/T T/R	A	10	0.32	16
				SB L/T T/R	B	11	0.49	26
PM Peak Hour								
Denman Street & Barclay Street	B	11	0.49	EB L/T/R	A	7	0.14	8
				WB L/T/R	A	6	0.16	8
				NB L/T T/R	B	12	0.49	26
				SB L/T T/R	B	11	0.45	24

Exhibit 4-2: Traffic Analysis Summary – Unsignalized Intersections, Existing Traffic Volumes

Intersection	Intersection			Lane	Lane LOS	Lane Delay (s)	Lane V/C Ratio	Lane 95th Percentile Queue (m)
	LOS	Delay (s)	Max v/c Ratio					
AM Peak Hour								
Gilford Street & Ted Northe Lane	A	3	0.01	EB L/T/R	A	9	0.01	0
				WB L/T/R	A	9	0.01	0
				NB L/T/R	A	0	0	0
				SB L/T/R	A	0	0	0
Gilford Street & Barclay Street	A	4	0.03	EB L/T/R	A	0	0	0
				WB L/T/R	A	2	0.01	0
				NB L/T/R	A	9	0.03	1
				SB L/T/R	A	9	0.01	0
Denman Street & Ted Northe Lane	A	0	0.17	EB L/R	A	10	0.01	0
				WB L/R	B	11	0.01	0
				NB T/R	A	0	0.11	0
				NB L/T	A	0	0	0
				SB T/R	A	0	0.17	0
				SB L/T	A	0	0	0
PM Peak Hour								
Gilford Street & Ted Northe Lane	A	2	0.01	EB L/T/R	A	9	0.01	0
				WB L/T/R	A	9	0.03	0
				NB L/T/R	A	0	0	0
				SB L/T/R	A	1	0	0
Gilford Street & Barclay Street	A	4	0.04	EB L/T/R	A	0	0	0
				WB L/T/R	A	2	0.01	0
				NB L/T/R	A	9	0.04	1
				SB L/T/R	A	10	0.02	0
Denman Street & Ted Northe Lane	A	1	0.17	EB L/R	B	11	0.03	1
				WB L/R	B	12	0.05	1
				NB T/R	A	0	0.17	0
				NB L/T	A	0	0	0
				SB T/R	A	0	0.16	0
				SB L/T	A	0	0.01	0

Exhibit 4-3: Traffic Analysis Summary – Signalized Intersection, Future Combined Traffic Volumes

Intersection	Intersection			Movement	LOS	Delay (s)	v/c Ratio	95th Percentile Queue (m)
	LOS	Delay (s)	Max v/c Ratio					
AM Peak Hour								
Denman Street & Barclay Street	B	10	0.51	EB L/T/R	A	8	0.13	8
				WB L/T/R	A	6	0.10	6
				NB L/T T/R	A	10	0.32	16
				SB L/T T/R	B	11	0.51	27
PM Peak Hour								
Denman Street & Barclay Street	B	11	0.49	EB L/T/R	A	8	0.19	10
				WB L/T/R	A	6	0.16	9
				NB L/T T/R	B	12	0.49	26
				SB L/T T/R	B	11	0.47	24

Exhibit 4-4: Traffic Analysis Summary – Unsignalized Intersections, Future Combined Traffic Volumes

Intersection	Intersection			Lane	Lane LOS	Lane Delay (s)	Lane V/C Ratio	Lane 95th Queue (m)
	LOS	Delay (s)	Max v/c Ratio					
AM Peak Hour								
Gilford Street & Ted Northe Lane	A	5	0.03	EB L/T/R	A	9	0.03	1
				WB L/T/R	A	9	0.02	1
				NB L/T/R	A	2	0.01	0
				SB L/T/R	A	0	0	0
Gilford Street & Barclay Street	A	3	0.03	EB L/T/R	A	0	0	0
				WB L/T/R	A	2	0.01	0
				NB L/T/R	A	9	0.03	1
				SB L/T/R	A	10	0.01	0
Denman Street & Ted Northe Lane	A	0	0.17	EB L/R	A	9	0.02	0
				WB L/R	B	11	0.01	0
				NB T/R	A	0	0.12	0
				NB L/T	A	0	0.12	0
				SB T/R	A	0	0.17	0
				SB L/T	A	0	0.17	0
PM Peak Hour								
Gilford Street & Ted Northe Lane	A	4	0.03	EB L/T/R	A	9	0.03	1
				WB L/T/R	A	9	0.03	1
				NB L/T/R	A	2	0.01	0
				SB L/T/R	A	1	0	0
Gilford Street & Barclay Street	A	3	0.04	EB L/T/R	A	0	0	0
				WB L/T/R	A	2	0.01	0
				NB L/T/R	A	9	0.04	1
				SB L/T/R	A	10	0.02	0
Denman Street & Ted Northe Lane	A	1	0.17	EB L/R	B	11	0.04	1
				WB L/R	B	13	0.06	2
				NB T/R	A	0	0.17	0
				NB L/T	A	1	0.01	0
				SB T/R	A	0	0.16	0
				SB L/T	A	0	0.01	0

The following key observations can be made from Exhibit 4-1 to Exhibit 4-4:

- All key intersections are projected to operate acceptably by the time the development is completed, achieving a Level of Service (LOS) of B or better, with all performance parameters well below critical thresholds.

- Each individual movement at the intersection is expected to stay within acceptable thresholds for both level of service and delays.
- The overall impact of the site traffic on the surrounding network is expected to be minimal.

4.2 On-Site Design and Operations

A swept path analysis was conducted to assess the maneuverability of a passenger car entering the underground parkade from Ted Northe Lane. The analysis indicates that the vehicle can navigate safely without colliding with surrounding obstacles, such as poles or walls.

Regarding garbage/recycling and loading operations, which occur at-grade along Ted Northe Lane, no significant issues are anticipated at this time. However, a more comprehensive swept path analysis will be undertaken as part of future detailed applications to provide additional support and validation.

The vehicle-swept paths are provided in Appendix F.

The circulation analysis is summarized in Exhibit 4-5.

Exhibit 4-5: Circulation Analysis Summary

Design Vehicle Name	Vehicle Activity/ Operation	Turning Movement	Exhibit Number	Turning Analysis Results
Passenger Car	Parkade Access	Inbound	Appendix F – Exhibit F-1	Can accommodate

4.3 Safety Review

A high-level safety review was conducted to identify whether the development-generated traffic will cause any potential operational or safety concerns or exacerbate any existing safety concerns or operational issues.

4.3.1 Parkade Access

On-site, as per the vehicle circulation path shown in Appendix F, the proposed geometry can accommodate a passenger car to enter and exit the parkade. However, it can only accommodate one-way movement at a time, where two vehicles cannot be moving in opposite directions side by side. Proper signage and markings must be considered to help ensure safe operations for vehicles entering and exiting the parkade.

4.3.2 Pedestrian Connectivity

The safety review also considered the site in the context of the surrounding network included in the study. It was noted that there is good connectivity of existing sidewalks on roadways within the study area, with pedestrian crosswalks provided on the North and South approaches of the Denman Street and Barclay Street intersection. (More detailed information on Existing Pedestrian and Cycling facilities is provided in Section 3).

4.3.3 Pedestrian Crossing at Denman St and Barclay St

Field observations at the study intersections revealed a high volume of pedestrian crossings at the Denman Street and Barclay Street intersection. While the pedestrian activity and traffic volumes along Denman Street present some challenges for vehicles making left turns from Barclay Street and for those crossing Denman Street, the operational analysis indicates that the intersection functions within acceptable parameters. Furthermore, the findings confirm that the intersection operates under acceptable conditions, with performance metrics remaining well below critical thresholds both before and after the proposed development.

To assess whether the intersection experienced an overrepresentation of collisions, particularly pedestrian or cyclist collisions, ICBC collision data was reviewed. The intersection experienced 48 collisions between 2018 and 2022, averaging 10 collisions per year. These include 9 casualty collisions and 39 Property Damage Only. There was only one pedestrian collision that resulted in Property Damage Only, with no cyclist collisions reported. The 9 casualty collisions included 5 side-impact collisions and 3 rear-end collisions. All 48 collisions included 18 side-impact collisions, 14 collisions with undetermined configuration, 5 rear-end, 3 side swipe (same direction), 3 conflicted, 3 single vehicle, and 2 head-on collisions. Due to limited data available about collision attributes, it is difficult to determine whether there are enough collision types susceptible to correction or reduction by introducing a full traffic signal at the intersection.

As shown in Exhibit 4-6, it was observed that the curb ramps on the north approach of the intersection are misaligned with the crosswalk, which may lead pedestrians to walk on the roadway. Aligning the curb ramps with the crosswalk is therefore recommended. Additionally, crosswalk markings are absent on the Barclay Street approaches. It is advised to add crosswalk markings on the East and West approaches of the intersection to better delineate pedestrian pathways, clarify crossing locations, and enhance driver awareness of pedestrian activity. These observations and recommendations are independent of the proposed development and are offered as general suggestions for improving the intersection.

Exhibit 4-6: Crosswalk at the intersection of Denman St and Barclay St (Looking north-east)



5 Parking and Loading Study

This section presents an estimate of the vehicle parking, bicycle parking, and loading space requirements for the proposed developments based on the current City of Vancouver off-street parking regulations Bylaw 6059 (“Parking Bylaw”), January 2024.

5.1 Vehicle Parking Spaces

To help support the developer’s proposed on-site parking provision based on their site location, nature of operations and anticipated user lifestyle, Arcadis carried out the following reviews:

- Parking requirements based on the City of Vancouver Bylaw.
- Transportation Demand Management Plan.
- Availability of nearby on-street parking.
- Availability of near-by car-share.

5.1.1 Bylaw Requirements

In response to Provincial Bills 44 and 47, as well as On-Street Parking Management, the City of Vancouver has made significant changes to its Parking By-Law. Effective June 30, 2024, minimum vehicle parking requirements have been eliminated for all land uses citywide. However, developers are still obligated to provide parking spaces specifically for visitors and accessible parking. The provision of parking spaces was calculated using the Parking Bylaw Section 4 Off-street Parking Space Regulations (January 2024).

Exhibit 5-1: Motor Vehicle Parking Requirements (Bylaw- January 2024)

Development Statistics		Required Parking Stalls		Stalls	
Land Use	GFA (m2)	Bylaw Section	Bylaw Rate	Permitted/ Required	Provided
Hotel	15238.7	4.3.1	a maximum of 1 parking space for each 115 s.m. of GFA	133	55
Restaurant	230.8	4.2.5.11	A minimum of 1 space for each 50 s.m. of GFA up to 100 s.m., 1 additional space for each additional 10 s.m. of GFA up to 500 s.m.	15	15

Development Statistics		Accessible Parking Stalls		Stalls	
Land Use	GFA (m2)	Bylaw Section	Bylaw Rate	Required	Provided
Hotel	15238.7	4.8.4b	1 accessible parking space for each building that contains at least 500 m² of gross floor area and an additional 0.4 parking space for each 1000 m² of gross floor area	7	7
Restaurant	230.8	4.8.4b			

5.1.2 Transportation Demand Management (TDM) Plan

In accordance with the January 2024 Parking Bylaw (Section 4.3.4), the developer of this proposed development, located in the Downtown area, is required to provide a Transportation Demand Management (TDM) Plan. The TDM Plan aims to promote sustainable transportation options, reduce reliance on private vehicles, and enhance multimodal accessibility for residents, employees, and visitors.

Based on the requirements outlined in the Parking Bylaw, the developer has selected TDM Plan B – Bike Infrastructure Package to meet the objectives of the bylaw and support active transportation initiatives. The selected package includes the following measures:

- 40% additional Class A bicycle parking spaces: Providing a significant increase in secure, long-term bicycle parking spaces to accommodate the needs of cyclists and encouraging cycling as a primary mode of transportation.
- 10% additional lockers: Enhancing onsite amenities by offering more personal storage lockers for cyclists to store gear and belongings conveniently and securely.
- 5% additional oversized bicycle parking spaces: Accommodating larger bicycles such as cargo bikes, e-bikes, and other non-standard bicycles to ensure inclusive and flexibility for various cycling needs.
- Weather-protected Class B bicycle parking spaces: Providing short-term bicycle parking that is sheltered from weather conditions to improve the accessibility and comfort of cycling facilities.

To comply with the Parking Bylaw, the developer has committed to implementing all the above-noted requirements. The details of the TDM plan have been submitted through a standardized submission form, as required by the bylaw. These measures are expected to support the city's broader transportation goals, reduce parking demand, and enhance sustainable mobility options in the Downtown area.

5.1.3 On-Street Parking Availability

Arcadis carried out an on-street parking survey in March 2024 to assess parking utilization within the study area, with an emphasis on nighttime when residential parking demand typically peaks.

As shown in Exhibit 5-2 and Appendix G, based on this survey it appears:

- 181 parking spaces are available within the study area (these include paid parking and parking with a permit).
- The maximum parking utilization on a weekday is 177 vehicles, equating to 98% utilization.
- The maximum parking utilization on a weekend is 159 vehicles, equating to 88% utilization.

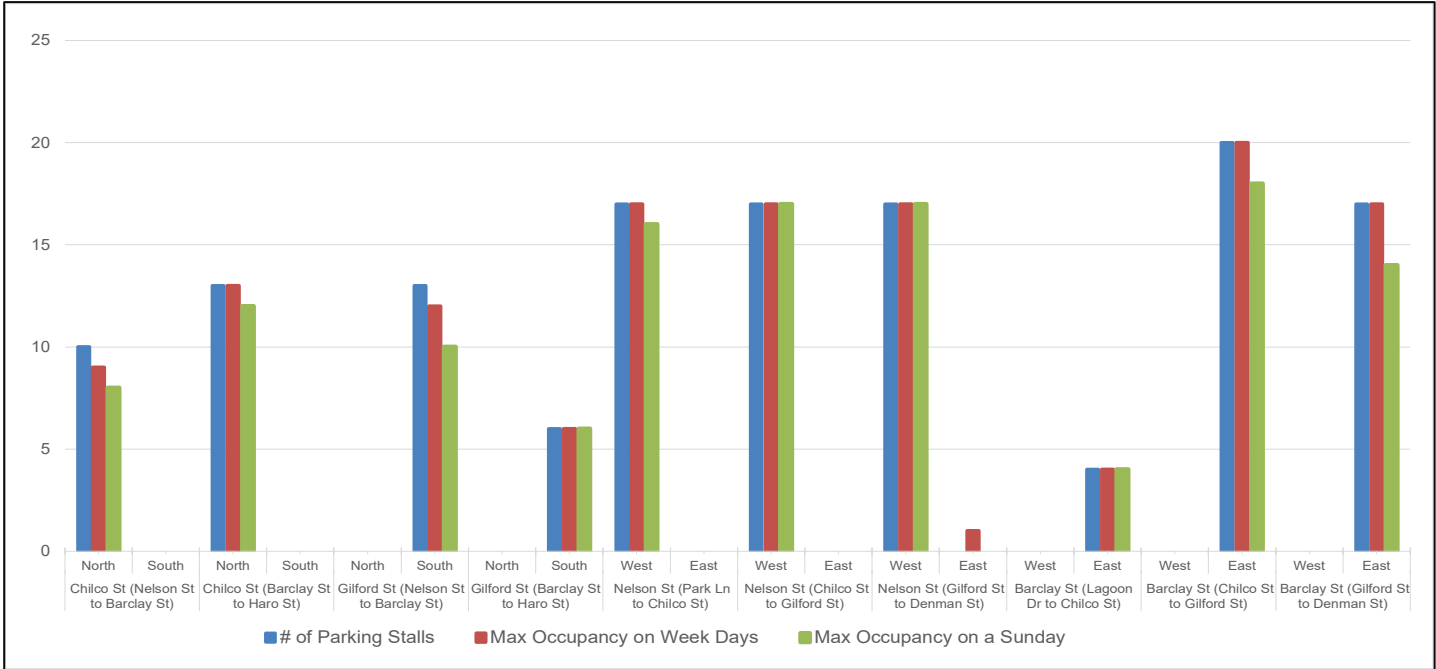
Considering the on-street parking occupancy rates hover around 100% on weekdays, it is likely that individuals looking for parking may experience difficulty finding a spot quickly.

The survey data suggests that nearby streets might offer some limited capacity for free on-street parking on Sunday nights. Here are the observations:

- Chilco St – 2 spaces between Nelson St and Barclay St and 1 between Barclay St and Haro St
- Nelson St - 1 space between Park Ln and Chilco St and 1 between Chilco and Gilford St.
- Barclay St - 3 spaces on the west side between Lagoon Dr to Chilco St

These parking spots are within a short walking distance (less than 200m) and could offer limited parking opportunities. Additionally, further from Lagoon Dr, there were extra spaces on Nelson St and Haro St near Denman St.

Exhibit 5-2: Observed Maximum Parking Occupancy



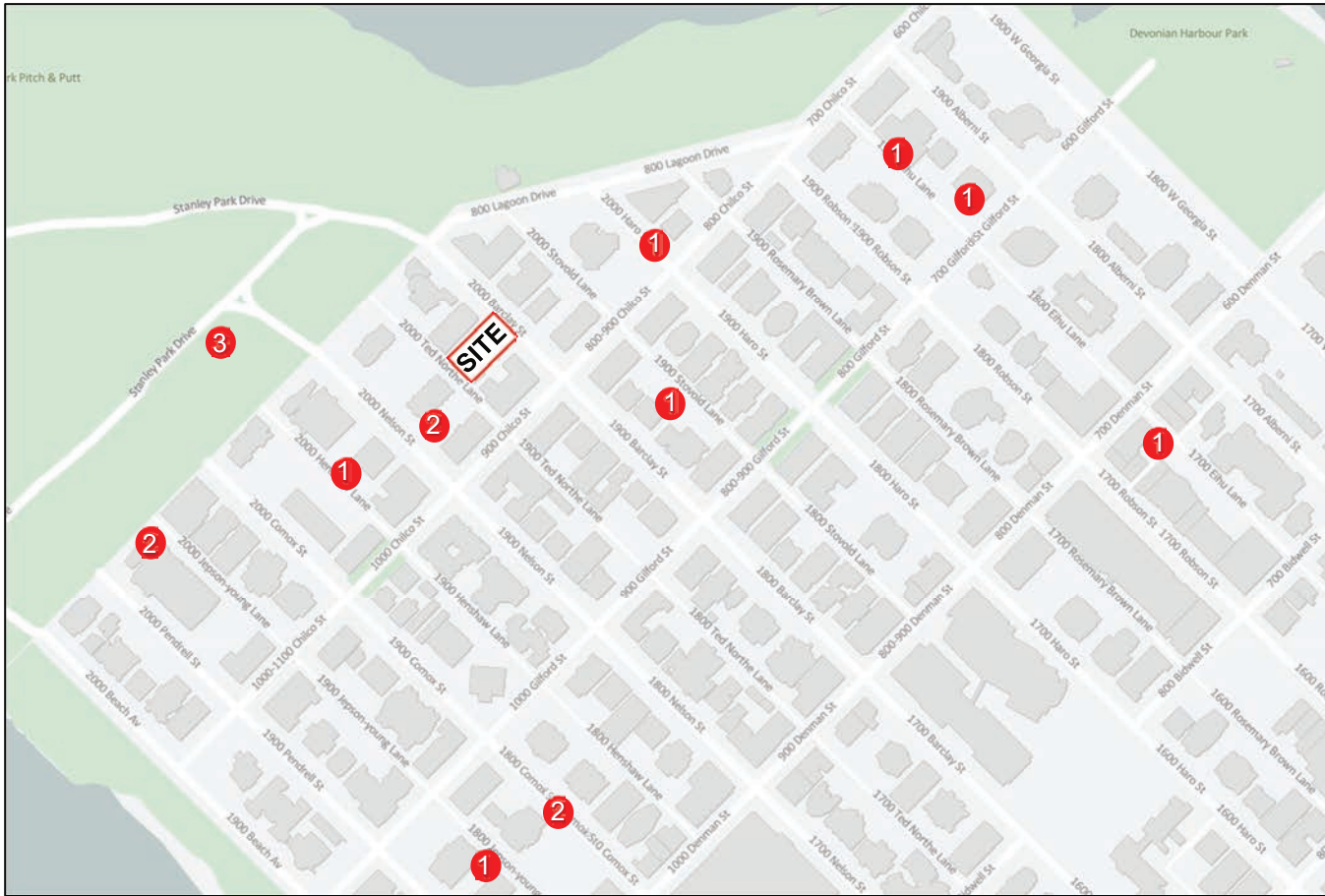
5.1.4 Car Share

As shown in Exhibit 5-3, the site is conveniently located within a reasonable walking distance of Modo car-share vehicles, providing tenants and visitors with access to a diverse range of vehicle types, including cars, trucks, vans, and sport utility vehicles.

A map of nearby Modo car-share locations highlights the availability of 16 Modo vehicles distributed across 11 car-share locations within a 5-minute walking radius (approximately 400 meters) of the site. This accessibility to car-share options offers a practical and sustainable transportation solution for the development’s tenants, reducing the reliance on private vehicle ownership while supporting the site’s connectivity to the surrounding area.

The proximity of these car-share vehicles also enhances the development’s appeal by promoting flexible and efficient travel options for residents, employees, and visitors alike.

Exhibit 5-3: Modo Car Share Map (Last Modified May 7, 2025)



5.2 Bicycle Parking Spaces

Exhibit 5-4 below tabulates the number of bicycle parking spaces that are required under the bylaw. As shown in the Exhibit, the City of Vancouver’s bylaw specifies a requirement for 16 bike spaces (10 Class A and 6 Class B bicycle spaces).

Exhibit 5-4: Bicycle Parking Requirements (Bylaw- January 2024)

Land Use	Units	GFA (m²)	Bylaw Section	Bicycle Class	Minimum Required Parking Stalls	
					Bylaw Parking Rate	Min. Required Stalls
Hotel	270	15,238.7	6.2.5.2	Class A	1 space for every 30 dwelling, housekeeping or sleeping units, or any combination thereof.	9
				Class B	6 spaces for any development containing a minimum of 75 dwellings, housekeeping or sleeping units, or any combination thereof.	6
Restaurant		230.8	6.2.5.1	Class A	1 space per 340 m² of GFA	1
				Class B	6 spaces for any development containing a minimum of 1,000 m² of GFA	0
Total Class A					10	
Total Class B					6	
Grand Total					16	

The developer is providing:

- A total of 15 Class A bicycle parking spaces, exceeding the bylaw requirement of 10 spaces, with four (4) spaces fulfilling the minimum requirements of TDM Plan B and one (1) additional space provided beyond the TDM minimum, and
- 6 Class B bicycle parking spaces, meeting the bylaw requirements.

5.3 Loading Spaces

Exhibit 5-5 below summarizes the number of loading spaces that are required under the bylaw. As shown, the City of Vancouver's bylaw specifies a requirement for:

- Two (2) Class A loading spaces.
- Three (3) Class B loading spaces.
- No Class C loading spaces.

Exhibit 5-5: Loading Spaces Requirements (Bylaw- July 2020/ June 2008)

Land Use	Units	GFA (m²)	Class	Bylaw Section	Bylaw Loading Rate - Min. Space Requirements	Min. Required Stalls
Hotel	270	15,238.7	Class A	5.2.2	2 spaces for a hotel with 250 units up to a max of 499 units	2
			Class B	5.2.2	2 spaces for a hotel with 75 units up to a max of 399 units	2
			Class C	5.2.2	No requirement.	0
Restaurant	-	230.8	Class A	5.2.5	No requirement.	0
			Class B	5.2.5	1 for the first 465 m² of GFA.	1
			Class C	5.2.5	No requirement for less than 2 000 m² of GFA	0
Total Class A:						2
Total Class B:						3
Total Class C:						0

Currently, the developer is proposing:

- Two (2) Class A loading spaces, meeting the bylaw requirements.
- Two (2) Class B loading spaces. The provision of two (2) Class B loading spaces is expected to sufficiently accommodate the anticipated loading demand for the proposed development. Given that the hotel and restaurant will function as a cohesive and integrated unit within the building, these loading spaces will be shared between the two uses. This shared arrangement will be efficiently managed to ensure optimal utilization of the loading facilities, minimizing any potential conflicts or disruptions to operations.
- No Class C loading space, as the bylaw requires none.

5.4 Passenger Loading Spaces

As indicated in Exhibit 5-6 the City of Vancouver Bylaw Section 7 requires the proposed development to have:

- Six (6) Class A passenger loading spaces,
- Zero (0) Class B passenger loading space, and
- One (1) Class C passenger loading space.

Exhibit 5-6: Passenger Loading Spaces Requirements (Bylaw- January 2019)

Land Use	Units	GLA (m ²)	Class	Bylaw Section	Bylaw Rate – Minimum Space Requirements	Required Stalls
Hotel	270	15,238.7	Class A	7.2.5.2	A minimum of one space for every 50 sleeping, housekeeping or dwelling units up to a maximum of 200 units, and one additional space for each additional 75 units, except there shall be no requirement for a hotel with less than 75 units	5
			Class B	7.2.5.2	No Requirement.	0
			Class C	7.2.5.2	1 space for every 200 sleeping, house-keeping or dwelling units up to a maximum of 400 units, and one additional space for each additional 300 units.	1
Restaurant	-	230.8	Class A	7.2.5.1	1 space for each 4000 m ² of GFA	1
			Class B	7.2.5.1	No requirement.	0
			Class C	7.2.5.1	No requirement.	0
Total Class A:						6
Total Class B:						0
Total Class C:						1

Currently, the developer is proposing:

- Six (6) Class A passenger loading spaces, meeting the bylaw requirement.
- No Class B passenger loading space, as the bylaw requires none.
- Not to provide Class C loading spaces, as the development does not require them based on the anticipated operational needs.

6 Conclusions and Recommendations

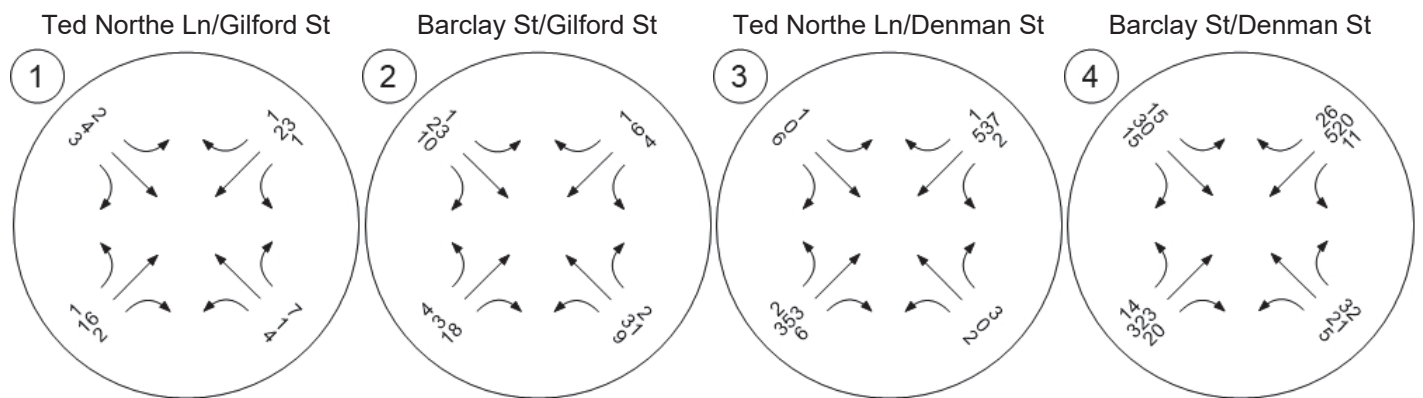
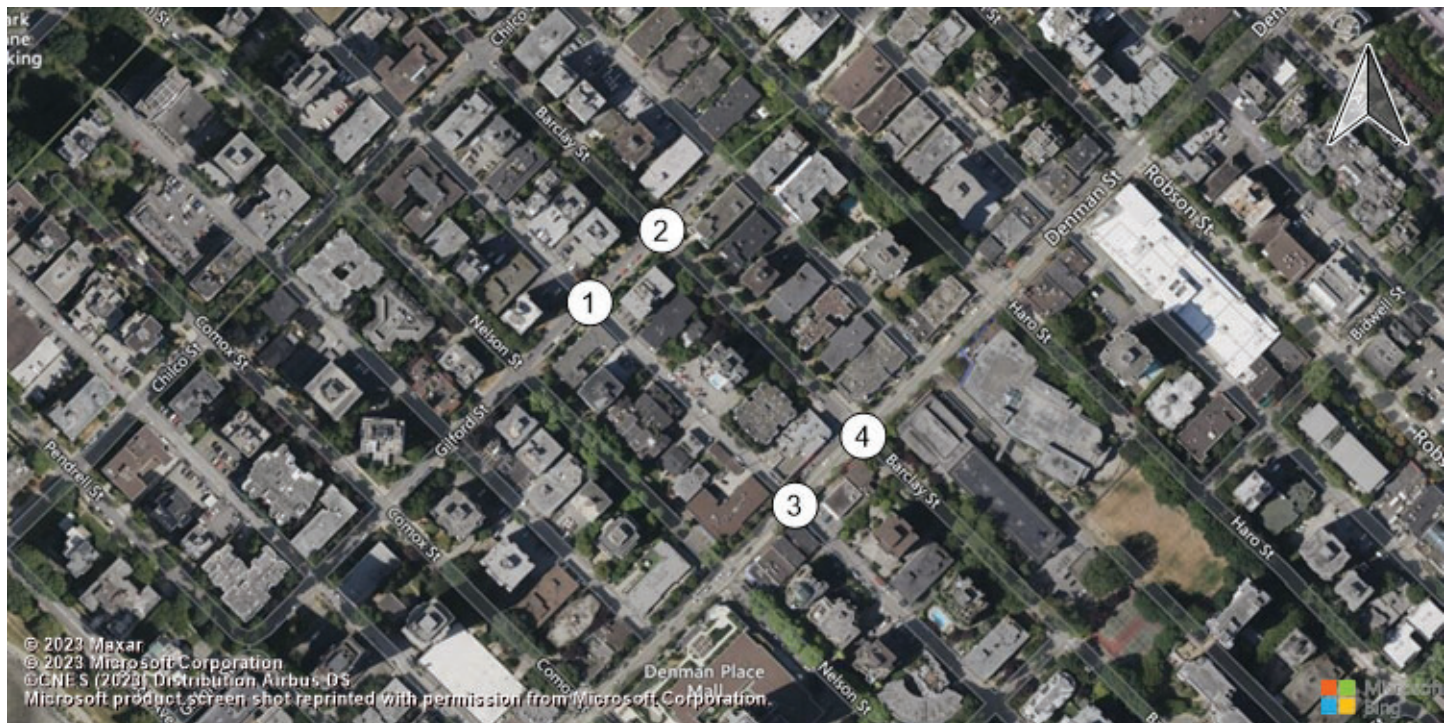
The following conclusions and recommendations are noted:

- Proposed Development:
 - The proposed development involves demolishing the existing Rosellen Suites at Stanley Park hotel and constructing a 27-story tower. The new building will feature 270 hotel rooms and a restaurant.
- Site Trip Generation:
 - The proposed development is expected to generate a total of 62 and 80 vehicle trips during the AM and PM peak hours respectively.
- Study Intersections Operation:
 - The current network operates reasonably well.
 - The road network is expected to operate reasonably well with the site traffic.
 - The proposed development is expected to have a minimal impact on the performance of study intersections.
- Sidewalks and Crosswalks:
 - Good sidewalk connections exist between the site and most of the surrounding area.
 - Most of the sidewalks in this area are in good pavement conditions with necessary let-downs in place.
 - The network would benefit from providing painted crosswalk (white parallel lines) at strategic locations (e.g. along Barclay St to maintain connectivity with the signalized crossing at Denman St).
 - Denman Street and Barclay Street intersection provides pedestrian actuated half traffic signal, along with marked crosswalks.
 - The bus stop on Denman St is well accessible from site via sidewalks.
 - Several car-share vehicles and a bike share station are nearby, offering excellent alternatives transportation options.
- Safety Review:
 - Crosswalk pavement marking installation on the approaches of Barclay Street at Denman Street and Barclay Street intersection.
 - Proper signage and markings must be considered to help ensure safe operations for vehicles entering and exiting the proposed parkade.
- Parking Provided:
 - 70 car parking spaces with a total of 7 accessible spaces.
 - 15 Class A bicycle parking spaces, meeting the bylaw requirements.
 - 6 Class B bicycle parking spaces, meeting the bylaw requirements.
 - 2 Class A loading spaces, meeting the bylaw requirements.
 - 2 Class B loading spaces. The loading spaces will be jointly utilized and managed collaboratively between the hotel and restaurant.
 - 6 Class A passenger loading spaces, meeting the bylaw requirements.

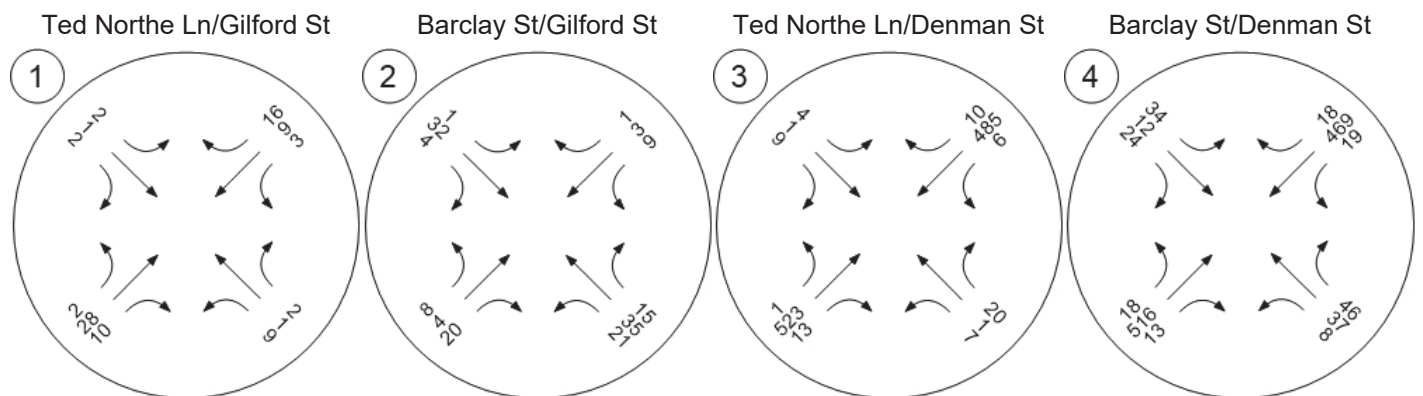
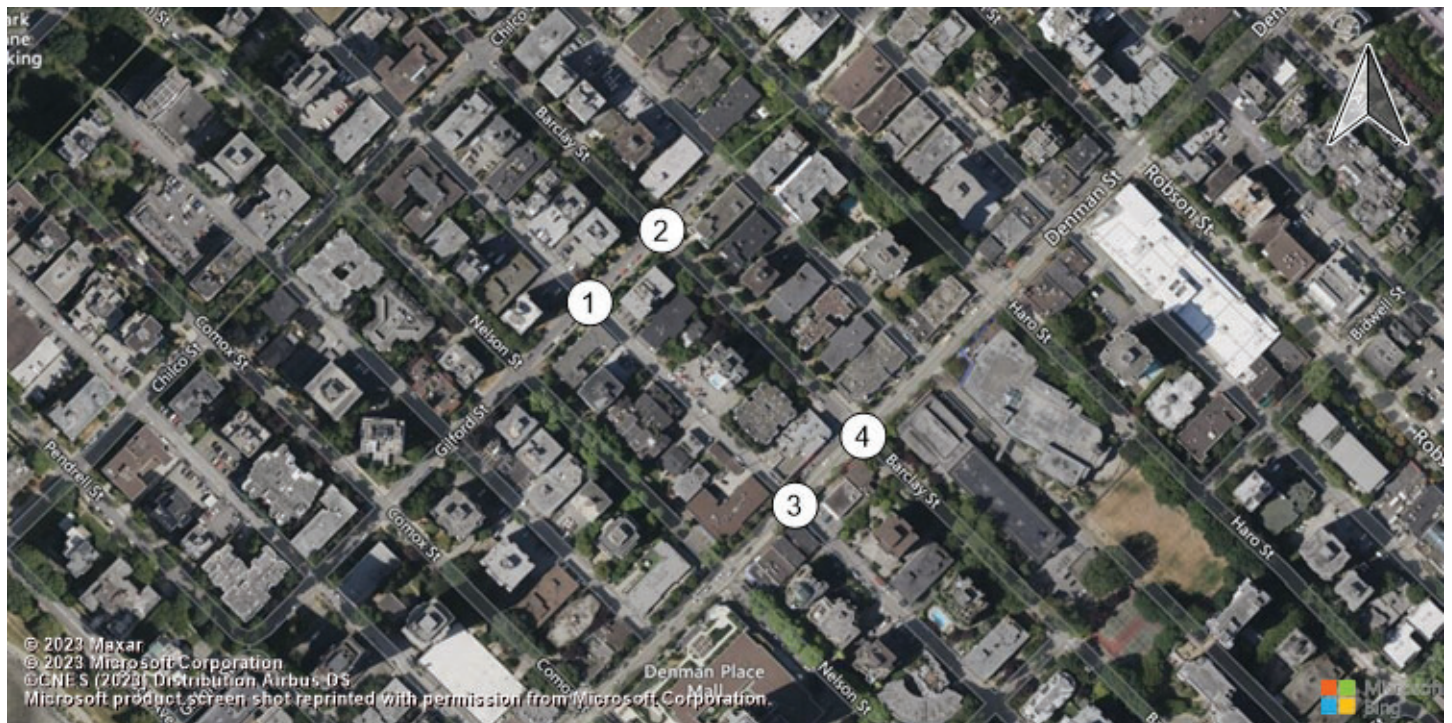
Appendix A

Existing Traffic Volumes

Report Figure 0f: Traffic Volume - Future Total Volume



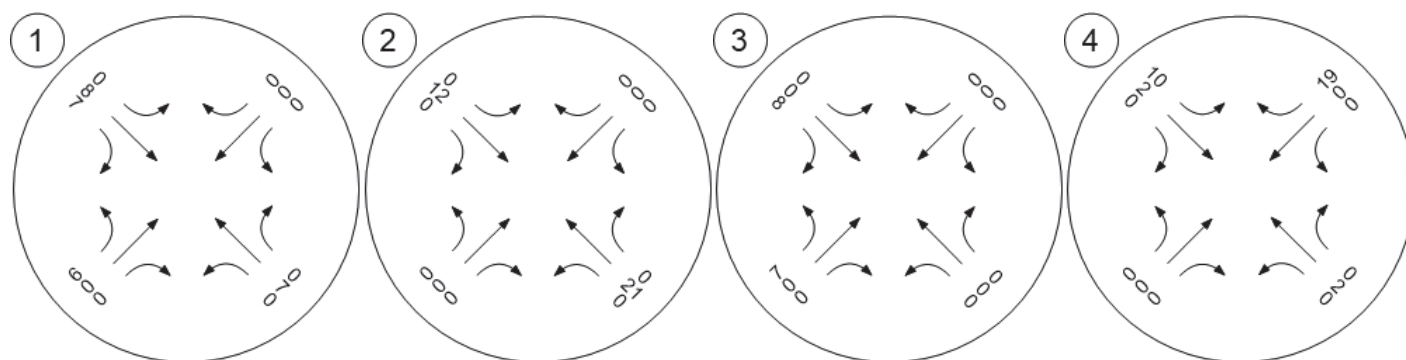
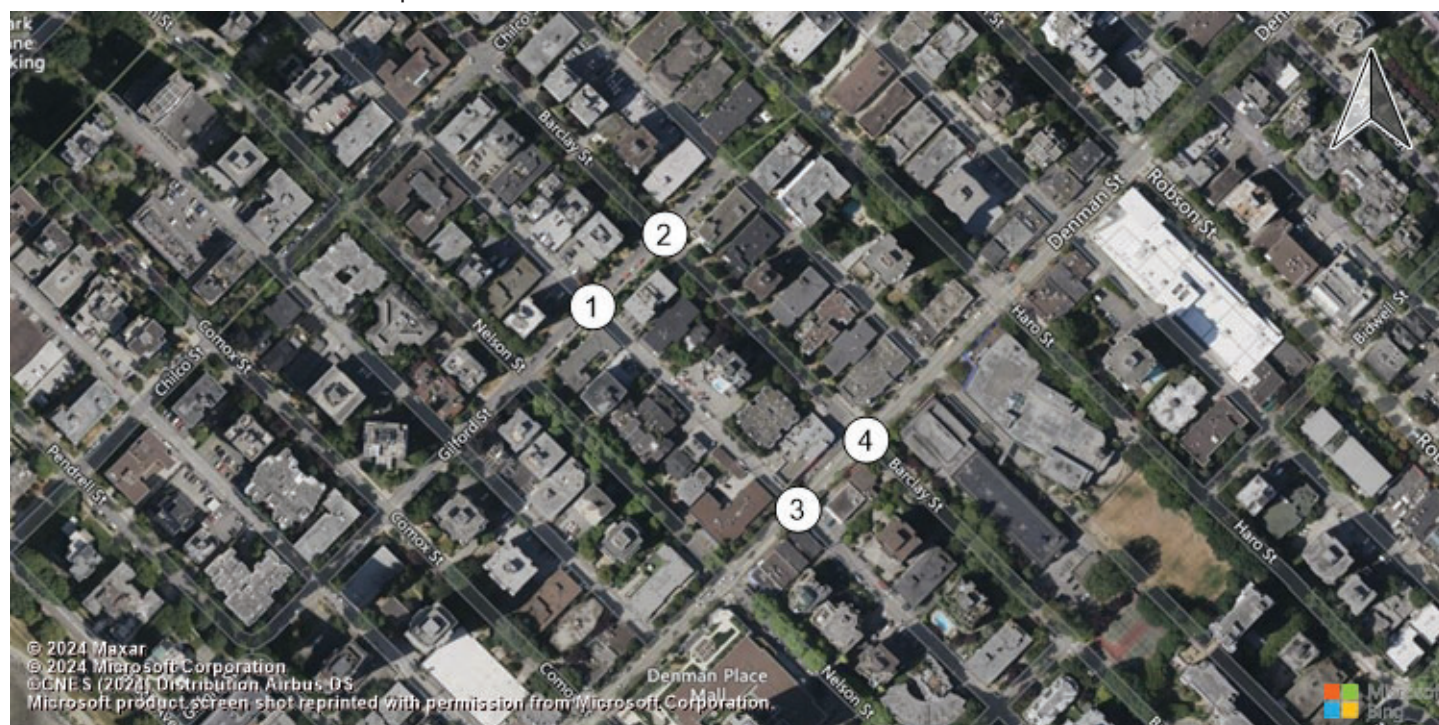
Report Figure 0f: Traffic Volume - Future Total Volume



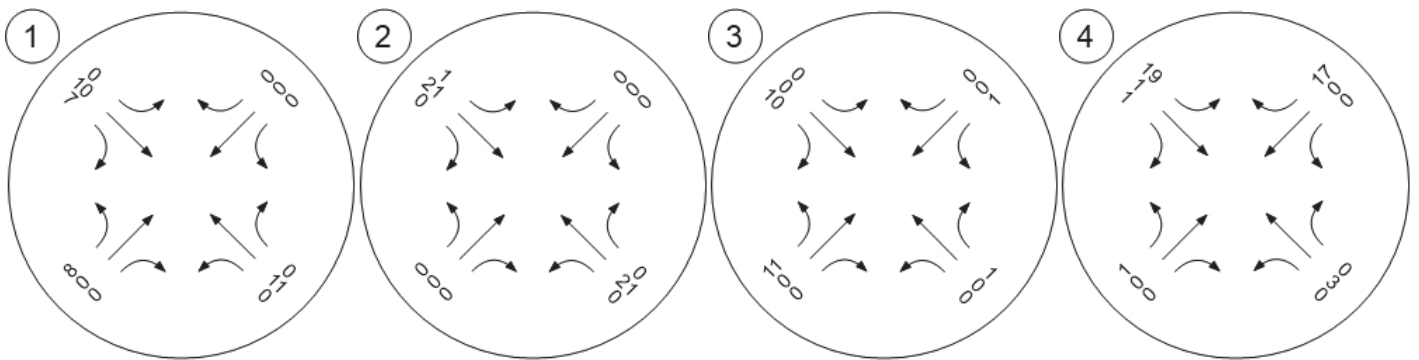
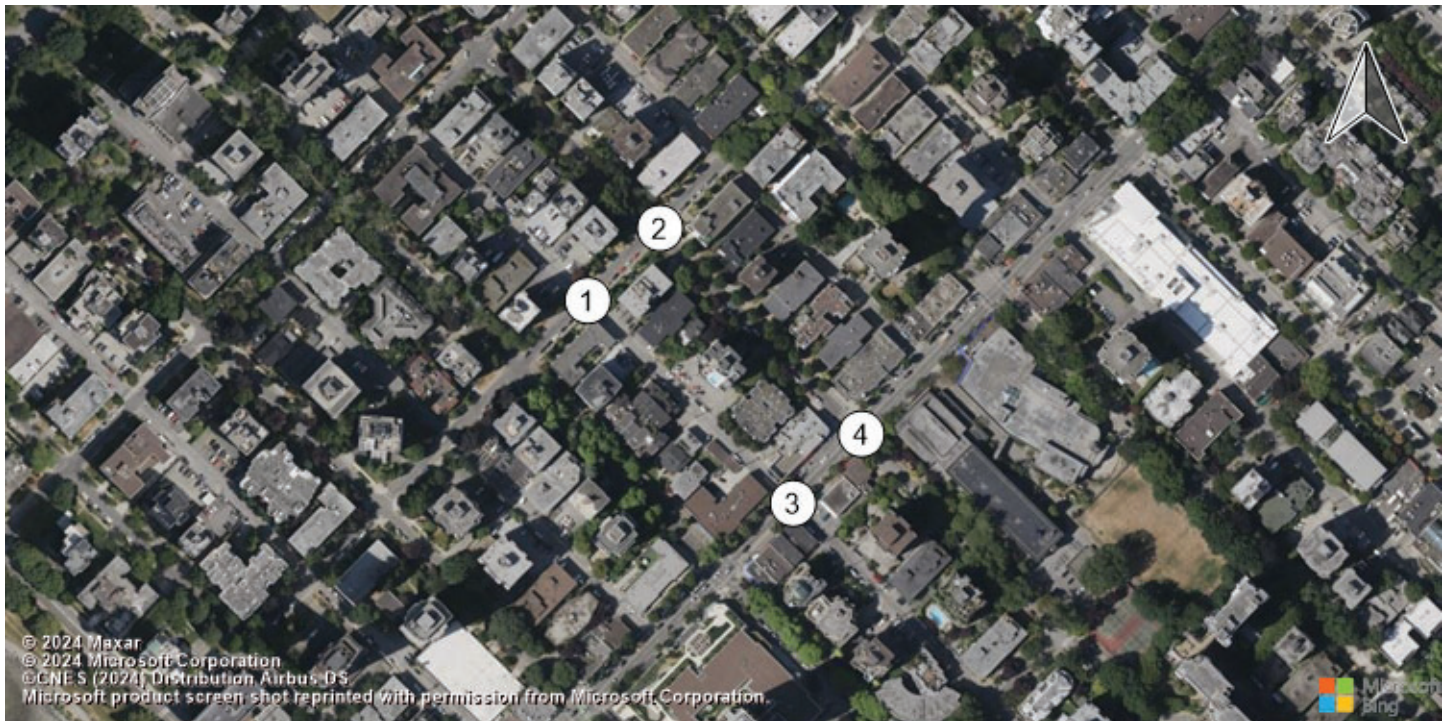
Appendix B

Site Traffic Volumes

Traffic Volume - Net New Site Trips



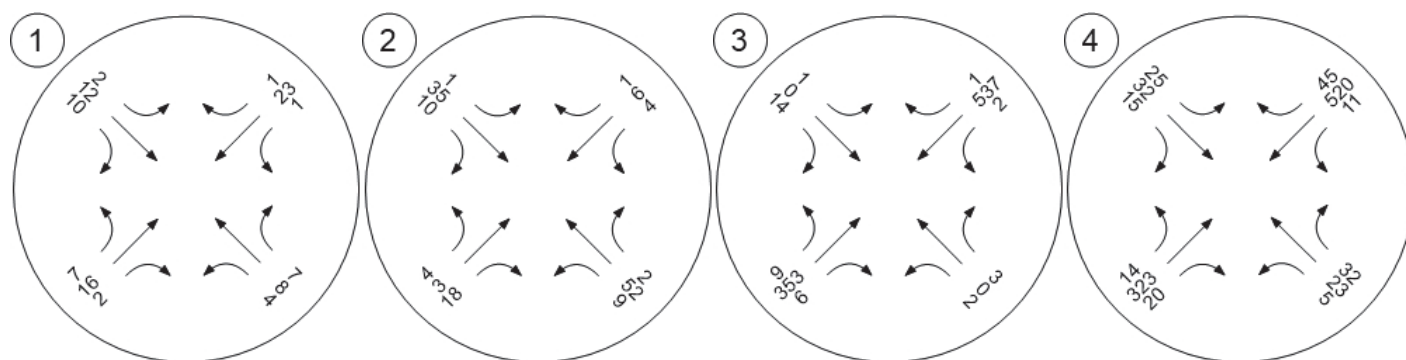
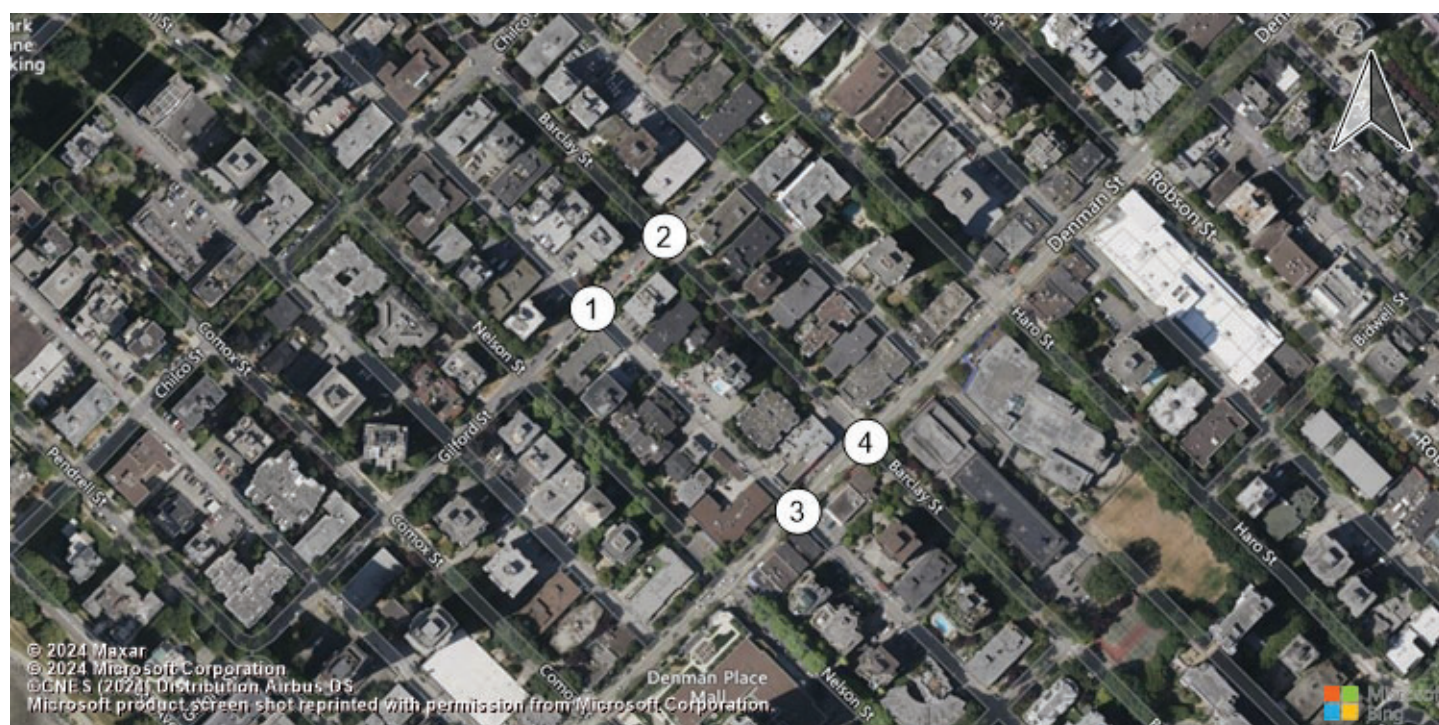
Traffic Volume - Net New Site Trips



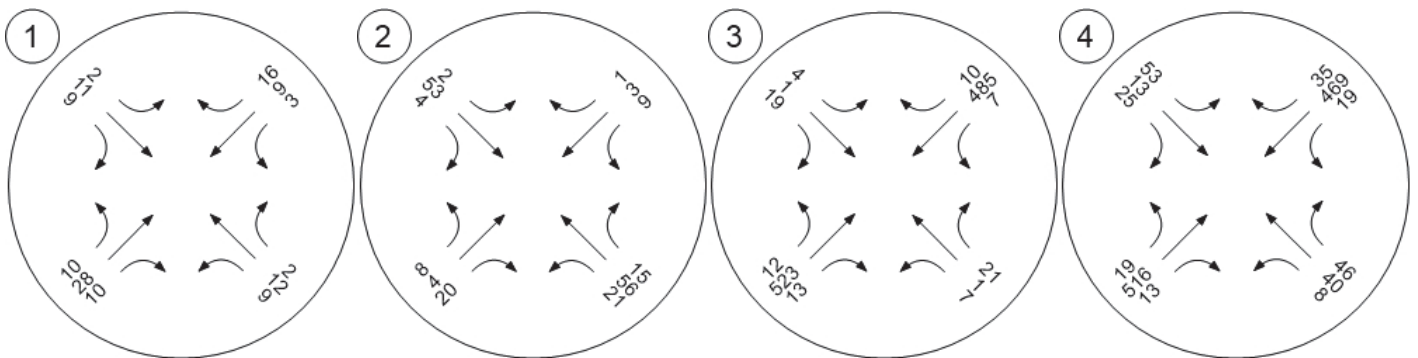
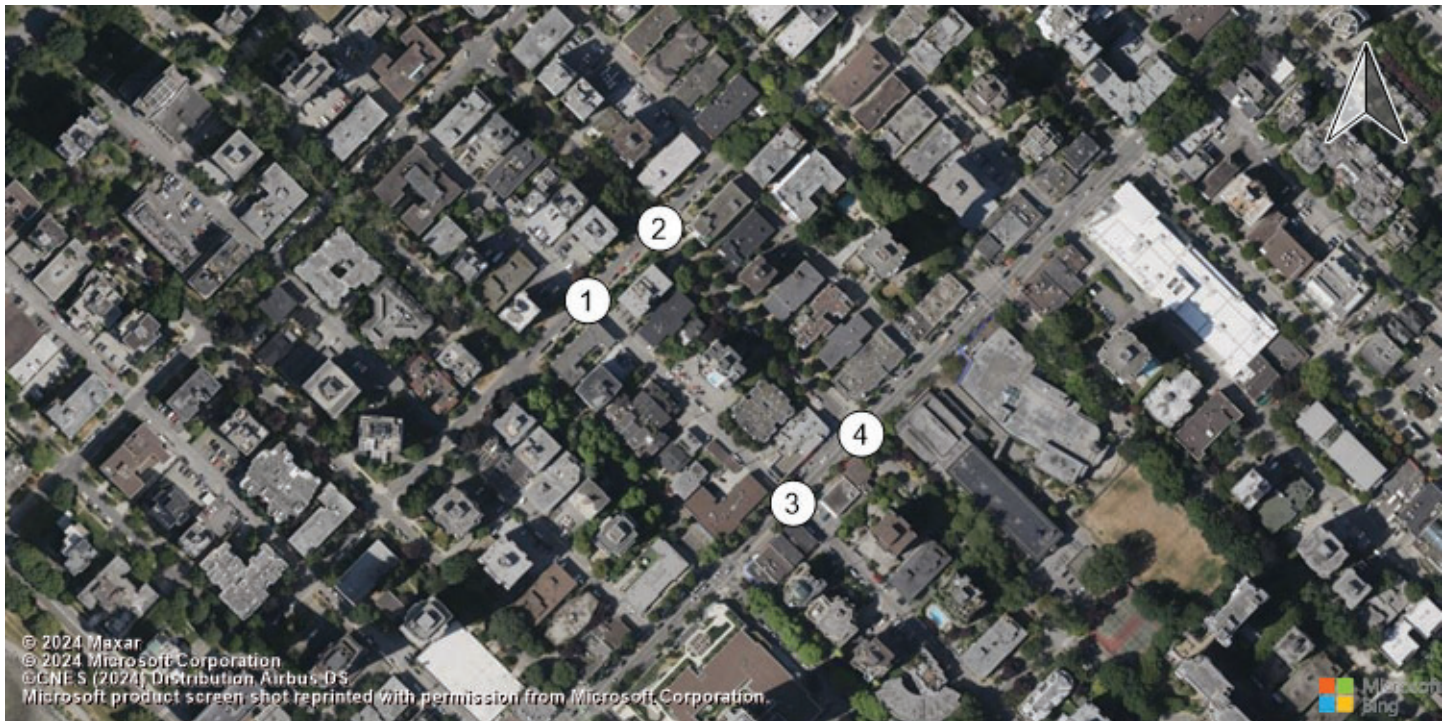
Appendix C

Future Combined Traffic Volumes

Traffic Volume - Future Total Volume



Traffic Volume - Future Total Volume



Appendix D

Capacity Analysis Report – Existing Traffic Volumes

1: Gilford Street & Ted Northe Lane
146324 - 2030 Barclay TIA

Existing
AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	4	3	4	1	7	1	16	2	1	23	1
Future Volume (vph)	2	4	3	4	1	7	1	16	2	1	23	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.955			0.917			0.986			0.995	
Flt Protected		0.989			0.985			0.998			0.998	
Satd. Flow (prot)	0	1685	0	0	1612	0	0	1756	0	0	1772	0
Flt Permitted		0.989			0.985			0.998			0.998	
Satd. Flow (perm)	0	1685	0	0	1612	0	0	1756	0	0	1772	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		60.5			162.8			48.3			57.6	
Travel Time (s)		4.4			11.7			3.5			4.1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	2	4	3	4	1	8	1	17	2	1	25	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	9	0	0	13	0	0	20	0	0	27	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		2.4			2.4			0.0			0.0	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 13.3%												
ICU Level of Service A												
Analysis Period (min) 15												

1: Gilford Street & Ted Northe Lane
146324 - 2030 Barclay TIA

Existing
AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	4	3	4	1	7	1	16	2	1	23	1
Future Volume (Veh/h)	2	4	3	4	1	7	1	16	2	1	23	1
Sign Control	Stop		Stop		Free		Free		Free		Free	
Grade	0%		0%		0%		0%		0%		0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	2	4	3	4	1	8	1	17	2	1	25	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							None			None		
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	56	48	26	52	48	18	26				19	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	56	48	26	52	48	18	26				19	
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1				4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2	
p0 queue free %	100	100	100	100	100	99	100				100	
cM capacity (veh/h)	932	842	1050	939	843	1061	1588				1597	
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	9	13	20	27								
Volume Left	2	4	1	1								
Volume Right	3	8	2	1								
cSH	923	1001	1588	1597								
Volume to Capacity	0.01	0.01	0.00	0.00								
Queue Length 95th (m)	0.2	0.3	0.0	0.0								
Control Delay (s)	8.9	8.6	0.4	0.3								
Lane LOS	A	A	A	A								
Approach Delay (s)	8.9	8.6	0.4	0.3								
Approach LOS	A	A										
Intersection Summary												
Average Delay			3.0									
Intersection Capacity Utilization			13.3%	ICU Level of Service				A				
Analysis Period (min)			15									

2: Gilford Street & Barclay Street
146324 - 2030 Barclay TIA

Existing
AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	23	10	9	31	2	4	3	18	4	6	1
Future Volume (vph)	1	23	10	9	31	2	4	3	18	4	6	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.960			0.994			0.901			0.988	
Flt Protected		0.999			0.989			0.992			0.982	
Satd. Flow (prot)	0	1711	0	0	1754	0	0	1595	0	0	1731	0
Flt Permitted		0.999			0.989			0.992			0.982	
Satd. Flow (perm)	0	1711	0	0	1754	0	0	1595	0	0	1731	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		60.0			162.3			57.6			46.7	
Travel Time (s)		4.3			11.7			4.1			3.4	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	1	25	11	10	33	2	4	3	19	4	6	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	37	0	0	45	0	0	26	0	0	11	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		0.0			0.0			0.0			0.0	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 16.7%												
ICU Level of Service A												
Analysis Period (min) 15												

2: Gilford Street & Barclay Street
146324 - 2030 Barclay TIA

Existing
AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	23	10	9	31	2	4	3	18	4	6	1
Future Volume (Veh/h)	1	23	10	9	31	2	4	3	18	4	6	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	1	25	11	10	33	2	4	3	19	4	6	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None				None							
Median storage veh												
Upstream signal (m)												
162												
pX, platoon unblocked												
vC, conflicting volume	35			36			90	88	30	107	92	34
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	35			36			90	88	30	107	92	34
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	98	100	99	100
cM capacity (veh/h)	1576			1575			883	797	1044	849	792	1039
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	37	45	26	11								
Volume Left	1	10	4	4								
Volume Right	11	2	19	1								
cSH	1576	1575	981	831								
Volume to Capacity	0.00	0.01	0.03	0.01								
Queue Length 95th (m)	0.0	0.1	0.6	0.3								
Control Delay (s)	0.2	1.7	8.8	9.4								
Lane LOS	A	A	A	A								
Approach Delay (s)	0.2	1.7	8.8	9.4								
Approach LOS			A	A								
Intersection Summary												
Average Delay												
3.5												
Intersection Capacity Utilization												
16.7%												
ICU Level of Service												
A												
Analysis Period (min)												
15												

3: Denman Street & Ted Northe Lane
146324 - 2030 Barclay TIA

Existing
AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	0	6	2	0	3	2	353	3	2	537	1
Future Volume (vph)	1	0	6	2	0	3	2	353	3	2	537	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.884			0.919			0.999				
Flt Protected		0.993			0.980							
Satd. Flow (prot)	0	1566	0	0	1607	0	0	3387	0	0	3390	0
Flt Permitted		0.993			0.980							
Satd. Flow (perm)	0	1566	0	0	1607	0	0	3387	0	0	3390	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		162.8			64.7			50.9			54.9	
Travel Time (s)		11.7			4.7			3.7			4.0	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	1	0	6	2	0	3	2	380	3	2	577	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	7	0	0	5	0	0	385	0	0	580	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		0.0			0.0			0.0			0.0	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 27.2%	ICU Level of Service A											
Analysis Period (min) 15												

3: Denman Street & Ted Northe Lane
146324 - 2030 Barclay TIA

Existing
AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	0	6	2	0	3	2	353	3	2	537	1
Future Volume (Veh/h)	1	0	6	2	0	3	2	353	3	2	537	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	1	0	6	2	0	3	2	380	3	2	577	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (m)											55	
pX, platoon unblocked	0.88	0.88	0.88	0.88	0.88		0.88					
vC, conflicting volume	778	968	289	684	968	192	578			383		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	482	697	0	374	696	192	254			383		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	99	100	100	100	100			100		
cM capacity (veh/h)	410	319	956	487	320	818	1154			1172		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	7	5	192	193	290	290						
Volume Left	1	2	2	0	2	0						
Volume Right	6	3	0	3	0	1						
cSH	803	643	1154	1700	1172	1700						
Volume to Capacity	0.01	0.01	0.00	0.11	0.00	0.17						
Queue Length 95th (m)	0.2	0.2	0.0	0.0	0.0	0.0						
Control Delay (s)	9.5	10.6	0.1	0.0	0.1	0.0						
Lane LOS	A	B	A		A							
Approach Delay (s)	9.5	10.6	0.1		0.0							
Approach LOS	A	B										
Intersection Summary												
Average Delay			0.2									
Intersection Capacity Utilization			27.2%		ICU Level of Service		A					
Analysis Period (min)			15									

4: Denman Street & Barclay Street
146324 - 2030 Barclay TIA

Existing
AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	30	15	5	21	32	14	323	20	11	520	26
Future Volume (vph)	15	30	15	5	21	32	14	323	20	11	520	26
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor		0.98			0.97			1.00			1.00	
Frt		0.966			0.926			0.991			0.993	
Flt Protected		0.988			0.996			0.998			0.999	
Satd. Flow (prot)	0	1679	0	0	1594	0	0	3342	0	0	3355	0
Flt Permitted		0.940			0.984			0.924			0.944	
Satd. Flow (perm)	0	1580	0	0	1570	0	0	3092	0	0	3169	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			34			17			12	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		162.3			69.7			54.9			50.1	
Travel Time (s)		11.7			5.0			4.0			3.6	
Confl. Peds. (#/hr)	30		30	30		30	15		15	15		15
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	1.00
Adj. Flow (vph)	16	32	16	5	23	34	15	347	22	12	559	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	64	0	0	62	0	0	384	0	0	597	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		0.0			0.0			2.4			2.4	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	0	0		0	0		0	0		0	0	
Detector Template												
Leading Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	1.0	1.0		1.0	1.0		16.0	16.0		16.0	16.0	
Minimum Split (s)	21.0	21.0		21.0	21.0		21.0	21.0		21.0	21.0	
Total Split (s)	21.0	21.0		21.0	21.0		61.0	61.0		61.0	61.0	
Total Split (%)	25.6%	25.6%		25.6%	25.6%		74.4%	74.4%		74.4%	74.4%	
Maximum Green (s)	16.0	16.0		16.0	16.0		56.0	56.0		56.0	56.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												

4: Denman Street & Barclay Street
146324 - 2030 Barclay TIA

Existing
AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		Max	Max		Ped	Ped		Ped	Ped	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	9.0	9.0		9.0	9.0		9.0	9.0		9.0	9.0	
Pedestrian Calls (#/hr)	30	30		30	30		15	15		15	15	
Act Effect Green (s)		16.0			16.0			16.0			16.0	
Actuated g/C Ratio		0.38			0.38			0.38			0.38	
v/c Ratio		0.10			0.10			0.32			0.49	
Control Delay		7.4			5.7			9.7			11.4	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		7.4			5.7			9.7			11.4	
LOS		A			A			A			B	
Approach Delay		7.4			5.7			9.7			11.4	
Approach LOS		A			A			A			B	
90th %ile Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
90th %ile Term Code	MaxR	MaxR		MaxR	MaxR		Min	Min		Min	Min	
70th %ile Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
70th %ile Term Code	MaxR	MaxR		MaxR	MaxR		Min	Min		Min	Min	
50th %ile Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
50th %ile Term Code	MaxR	MaxR		MaxR	MaxR		Min	Min		Min	Min	
30th %ile Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
30th %ile Term Code	MaxR	MaxR		MaxR	MaxR		Min	Min		Min	Min	
10th %ile Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
10th %ile Term Code	MaxR	MaxR		MaxR	MaxR		Min	Min		Min	Min	
Stops (vph)		31			23			219			382	
Fuel Used(l)		2			1			9			16	
CO Emissions (g/hr)		36			21			175			299	
NOx Emissions (g/hr)		7			4			34			58	
VOC Emissions (g/hr)		8			5			40			69	
Dilemma Vehicles (#)		0			0			0			0	
Queue Length 50th (m)		2.1			1.2			9.2			15.9	
Queue Length 95th (m)		7.1			6.0			16.4			26.2	
Internal Link Dist (m)		138.3			45.7			30.9			26.1	
Turn Bay Length (m)												
Base Capacity (vph)		611			619			3092			3169	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.10			0.10			0.12			0.19	
Intersection Summary												
Area Type:	Other											
Cycle Length: 82												
Actuated Cycle Length: 42												
Natural Cycle: 45												
Control Type: Semi Act-Uncoord												
Maximum v/c Ratio: 0.49												
Intersection Signal Delay: 10.3							Intersection LOS: B					
Intersection Capacity Utilization 46.1%							ICU Level of Service A					

4: Denman Street & Barclay Street
146324 - 2030 Barclay TIA

Existing
AM Peak

Analysis Period (min) 15

90th %ile Actuated Cycle: 42

70th %ile Actuated Cycle: 42

50th %ile Actuated Cycle: 42

30th %ile Actuated Cycle: 42

10th %ile Actuated Cycle: 42

Splits and Phases: 4: Denman Street & Barclay Street



1: Gilford Street & Ted Northe Lane
146324 - 2030 Barclay TIA

Existing
PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	1	2	9	1	2	2	28	10	3	9	16
Future Volume (vph)	2	1	2	9	1	2	2	28	10	3	9	16
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.946			0.979			0.965			0.923	
Flt Protected		0.980			0.963			0.998			0.995	
Satd. Flow (prot)	0	1654	0	0	1682	0	0	1718	0	0	1639	0
Flt Permitted		0.980			0.963			0.998			0.995	
Satd. Flow (perm)	0	1654	0	0	1682	0	0	1718	0	0	1639	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		60.5			162.8			48.3			57.6	
Travel Time (s)		4.4			11.7			3.5			4.1	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	2	1	2	10	1	2	2	30	11	3	10	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	5	0	0	13	0	0	43	0	0	30	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		2.4			2.4			0.0			0.0	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	13.3%						ICU Level of Service A					
Analysis Period (min)	15											

1: Gilford Street & Ted Northe Lane
146324 - 2030 Barclay TIA

Existing
PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	1	2	9	1	2	2	28	10	3	9	16
Future Volume (Veh/h)	2	1	2	9	1	2	2	28	10	3	9	16
Sign Control	Stop		Stop		Free		Free		Free		Free	
Grade	0%		0%		0%		0%		0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	2	1	2	10	1	2	2	30	11	3	10	17
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							None			None		
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	66	70	18	66	72	36	27				41	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	66	70	18	66	72	36	27				41	
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1				4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2	
p0 queue free %	100	100	100	99	100	100	100				100	
cM capacity (veh/h)	922	818	1060	922	815	1037	1587				1568	
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	5	13	43	30								
Volume Left	2	10	2	3								
Volume Right	2	2	11	17								
cSH	947	928	1587	1568								
Volume to Capacity	0.01	0.01	0.00	0.00								
Queue Length 95th (m)	0.1	0.3	0.0	0.0								
Control Delay (s)	8.8	8.9	0.3	0.7								
Lane LOS	A	A	A	A								
Approach Delay (s)	8.8	8.9	0.3	0.7								
Approach LOS	A	A										
Intersection Summary												
Average Delay				2.2								
Intersection Capacity Utilization				13.3%	ICU Level of Service				A			
Analysis Period (min)				15								

2: Gilford Street & Barclay Street
146324 - 2030 Barclay TIA

Existing
PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	32	4	21	35	15	8	4	20	9	3	1
Future Volume (vph)	1	32	4	21	35	15	8	4	20	9	3	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.986			0.971			0.917			0.990	
Flt Protected		0.999			0.986			0.987			0.966	
Satd. Flow (prot)	0	1758	0	0	1708	0	0	1615	0	0	1706	0
Flt Permitted		0.999			0.986			0.987			0.966	
Satd. Flow (perm)	0	1758	0	0	1708	0	0	1615	0	0	1706	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		60.0			162.3			57.6			46.7	
Travel Time (s)		4.3			11.7			4.1			3.4	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	1	34	4	22	37	16	9	4	21	10	3	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	39	0	0	75	0	0	34	0	0	14	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		0.0			0.0			0.0			0.0	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	20.8%											
Analysis Period (min)	15											
ICU Level of Service A												

2: Gilford Street & Barclay Street
146324 - 2030 Barclay TIA

Existing
PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	32	4	21	35	15	8	4	20	9	3	1
Future Volume (Veh/h)	1	32	4	21	35	15	8	4	20	9	3	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	1	34	4	22	37	16	9	4	21	10	3	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (m)	162											
pX, platoon unblocked												
vC, conflicting volume	53			38			130	135	36	150	129	45
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	53			38			130	135	36	150	129	45
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			99	99	98	99	100	100
cM capacity (veh/h)	1553			1572			831	745	1037	789	750	1025
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	39	75	34	14								
Volume Left	1	22	9	10								
Volume Right	4	16	21	1								
cSH	1553	1572	932	793								
Volume to Capacity	0.00	0.01	0.04	0.02								
Queue Length 95th (m)	0.0	0.3	0.9	0.4								
Control Delay (s)	0.2	2.2	9.0	9.6								
Lane LOS	A	A	A	A								
Approach Delay (s)	0.2	2.2	9.0	9.6								
Approach LOS			A	A								
Intersection Summary												
Average Delay			3.8									
Intersection Capacity Utilization			20.8%	ICU Level of Service					A			
Analysis Period (min)			15									

3: Denman Street & Ted Northe Lane
146324 - 2030 Barclay TIA

Existing
PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	1	9	7	1	20	1	523	13	6	485	10
Future Volume (vph)	4	1	9	7	1	20	1	523	13	6	485	10
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.910			0.902			0.996			0.997	
Flt Protected		0.987			0.988						0.999	
Satd. Flow (prot)	0	1603	0	0	1590	0	0	3377	0	0	3377	0
Flt Permitted		0.987			0.988						0.999	
Satd. Flow (perm)	0	1603	0	0	1590	0	0	3377	0	0	3377	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		162.8			64.7			50.9			54.9	
Travel Time (s)		11.7			4.7			3.7			4.0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	4	1	10	7	1	21	1	556	14	6	516	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	15	0	0	29	0	0	571	0	0	533	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		0.0			0.0			0.0			0.0	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 29.0%	ICU Level of Service A											
Analysis Period (min) 15												

3: Denman Street & Ted Northe Lane
146324 - 2030 Barclay TIA

Existing
PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	1	9	7	1	20	1	523	13	6	485	10
Future Volume (Veh/h)	4	1	9	7	1	20	1	523	13	6	485	10
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	4	1	10	7	1	21	1	556	14	6	516	11
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None								None			
Median storage veh												
Upstream signal (m)												55
pX, platoon unblocked	0.90	0.90	0.90	0.90	0.90		0.90					
vC, conflicting volume	835	1106	264	846	1104	285	527	570				
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	595	895	0	607	894	285	253	570				
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1	4.1				
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2	2.2				
p0 queue free %	99	100	99	98	100	97	100	99				
cM capacity (veh/h)	336	249	976	336	250	712	1179	999				
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	15	29	279	292	264	269						
Volume Left	4	7	1	0	6	0						
Volume Right	10	21	0	14	0	11						
cSH	573	534	1179	1700	999	1700						
Volume to Capacity	0.03	0.05	0.00	0.17	0.01	0.16						
Queue Length 95th (m)	0.6	1.3	0.0	0.0	0.1	0.0						
Control Delay (s)	11.4	12.1	0.0	0.0	0.3	0.0						
Lane LOS	B	B	A		A							
Approach Delay (s)	11.4	12.1	0.0		0.1							
Approach LOS	B	B										
Intersection Summary												
Average Delay			0.5									
Intersection Capacity Utilization			29.0%	ICU Level of Service					A			
Analysis Period (min)			15									

4: Denman Street & Barclay Street
146324 - 2030 Barclay TIA

Existing
PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	12	24	8	37	46	18	516	13	19	469	18
Future Volume (vph)	34	12	24	8	37	46	18	516	13	19	469	18
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor		0.93			0.94			1.00			0.99	
Frt		0.953			0.932			0.996			0.995	
Flt Protected		0.977			0.995			0.998			0.998	
Satd. Flow (prot)	0	1602	0	0	1569	0	0	3360	0	0	3352	0
Flt Permitted		0.858			0.978			0.929			0.923	
Satd. Flow (perm)	0	1356	0	0	1531	0	0	3123	0	0	3095	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		26			49			7			10	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		162.3			69.7			54.9			50.1	
Travel Time (s)		11.7			5.0			4.0			3.6	
Confl. Peds. (#/hr)	60		60	60		60	40		40	40		40
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	36	13	26	9	39	49	19	549	14	20	499	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	75	0	0	97	0	0	582	0	0	538	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		0.0			0.0			2.4			2.4	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	0	0		0	0		0	0		0	0	
Detector Template												
Leading Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	1.0	1.0		1.0	1.0		16.0	16.0		16.0	16.0	
Minimum Split (s)	21.0	21.0		21.0	21.0		21.0	21.0		21.0	21.0	
Total Split (s)	21.0	21.0		21.0	21.0		61.0	61.0		61.0	61.0	
Total Split (%)	25.6%	25.6%		25.6%	25.6%		74.4%	74.4%		74.4%	74.4%	
Maximum Green (s)	16.0	16.0		16.0	16.0		56.0	56.0		56.0	56.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												

4: Denman Street & Barclay Street
146324 - 2030 Barclay TIA

Existing
PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Ped	Ped		Ped	Ped		Ped	Ped		Ped	Ped	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	9.0	9.0		9.0	9.0		9.0	9.0		9.0	9.0	
Pedestrian Calls (#/hr)	60	60		60	60		40	40		40	40	
Act Effct Green (s)		16.0			16.0			16.0			16.0	
Actuated g/C Ratio		0.38			0.38			0.38			0.38	
v/c Ratio		0.14			0.16			0.49			0.45	
Control Delay		7.1			5.9			11.5			11.1	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		7.1			5.9			11.5			11.1	
LOS		A			A			B			B	
Approach Delay		7.1			5.9			11.5			11.1	
Approach LOS		A			A			B			B	
90th %ile Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
90th %ile Term Code	Ped	Ped		Ped	Ped		Min	Min		Min	Min	
70th %ile Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
70th %ile Term Code	Ped	Ped		Ped	Ped		Min	Min		Min	Min	
50th %ile Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
50th %ile Term Code	Ped	Ped		Ped	Ped		Min	Min		Min	Min	
30th %ile Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
30th %ile Term Code	Ped	Ped		Ped	Ped		Min	Min		Min	Min	
10th %ile Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
10th %ile Term Code	Ped	Ped		Ped	Ped		Min	Min		Min	Min	
Stops (vph)		35			35			377			340	
Fuel Used(l)		2			2			16			14	
CO Emissions (g/hr)		42			34			300			267	
NOx Emissions (g/hr)		8			6			58			51	
VOC Emissions (g/hr)		10			8			69			62	
Dilemma Vehicles (#)		0			0			0			0	
Queue Length 50th (m)		2.2			2.1			15.6			14.1	
Queue Length 95th (m)		7.7			8.2			25.9			23.6	
Internal Link Dist (m)		138.3			45.7			30.9			26.1	
Turn Bay Length (m)												
Base Capacity (vph)		532			613			3123			3095	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.14			0.16			0.19			0.17	
Intersection Summary												
Area Type:	Other											
Cycle Length: 82												
Actuated Cycle Length: 42												
Natural Cycle: 45												
Control Type: Semi Act-Uncoord												
Maximum v/c Ratio: 0.49												
Intersection Signal Delay: 10.6							Intersection LOS: B					
Intersection Capacity Utilization 51.1%							ICU Level of Service A					

4: Denman Street & Barclay Street
146324 - 2030 Barclay TIA

Existing
PM Peak

Analysis Period (min) 15
90th %ile Actuated Cycle: 42
70th %ile Actuated Cycle: 42
50th %ile Actuated Cycle: 42
30th %ile Actuated Cycle: 42
10th %ile Actuated Cycle: 42

Splits and Phases: 4: Denman Street & Barclay Street



Appendix E

Capacity Analysis Report – Future Combined Traffic Volumes

1: Gilford Street & Ted Northe Lane
146324 - 2030 Barclay TIA

Future Built-out - Combined
AM PEAK

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	12	10	4	8	7	7	16	2	1	23	1
Future Volume (vph)	2	12	10	4	8	7	7	16	2	1	23	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.943			0.949			0.990			0.995	
Flt Protected		0.996			0.991			0.985			0.998	
Satd. Flow (prot)	0	1676	0	0	1678	0	0	1740	0	0	1772	0
Flt Permitted		0.996			0.991			0.985			0.998	
Satd. Flow (perm)	0	1676	0	0	1678	0	0	1740	0	0	1772	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		60.5			162.8			48.3			57.6	
Travel Time (s)		4.4			11.7			3.5			4.1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	2	13	11	4	9	8	8	17	2	1	25	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	26	0	0	21	0	0	27	0	0	27	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		2.4			2.4			0.0			0.0	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	14.4%											
Analysis Period (min)	15											
ICU Level of Service A												

1: Gilford Street & Ted Northe Lane
146324 - 2030 Barclay TIA

Future Built-out - Combined
AM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	12	10	4	8	7	7	16	2	1	23	1
Future Volume (Veh/h)	2	12	10	4	8	7	7	16	2	1	23	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	2	13	11	4	9	8	8	17	2	1	25	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	74	62	26	79	62	18	26			19		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	74	62	26	79	62	18	26			19		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	98	99	100	99	99	99			100		
cM capacity (veh/h)	898	824	1050	885	824	1061	1588			1597		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	26	21	27	27								
Volume Left	2	4	8	1								
Volume Right	11	8	2	1								
cSH	913	914	1588	1597								
Volume to Capacity	0.03	0.02	0.01	0.00								
Queue Length 95th (m)	0.7	0.5	0.1	0.0								
Control Delay (s)	9.1	9.0	2.2	0.3								
Lane LOS	A	A	A	A								
Approach Delay (s)	9.1	9.0	2.2	0.3								
Approach LOS	A	A										
Intersection Summary												
Average Delay			4.9									
Intersection Capacity Utilization			14.4%		ICU Level of Service				A			
Analysis Period (min)			15									

2: Gilford Street & Barclay Street
146324 - 2030 Barclay TIA

Future Built-out - Combined
AM PEAK

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	35	10	9	52	2	4	3	18	4	6	1
Future Volume (vph)	1	35	10	9	52	2	4	3	18	4	6	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.970			0.996			0.901			0.988	
Flt Protected		0.999			0.993			0.992			0.982	
Satd. Flow (prot)	0	1729	0	0	1765	0	0	1595	0	0	1731	0
Flt Permitted		0.999			0.993			0.992			0.982	
Satd. Flow (perm)	0	1729	0	0	1765	0	0	1595	0	0	1731	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		60.0			162.3			57.6			46.7	
Travel Time (s)		4.3			11.7			4.1			3.4	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	1	38	11	10	56	2	4	3	19	4	6	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	50	0	0	68	0	0	26	0	0	11	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		0.0			0.0			0.0			0.0	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	18.2%											
Analysis Period (min)	15											
	ICU Level of Service A											

2: Gilford Street & Barclay Street
146324 - 2030 Barclay TIA

Future Built-out - Combined
AM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	35	10	9	52	2	4	3	18	4	6	1
Future Volume (Veh/h)	1	35	10	9	52	2	4	3	18	4	6	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	1	38	11	10	56	2	4	3	19	4	6	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None				None							
Median storage veh												
Upstream signal (m)												
162												
pX, platoon unblocked												
vC, conflicting volume	58			49			126	124	44	143	128	57
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	58			49			126	124	44	143	128	57
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	98	100	99	100
cM capacity (veh/h)	1546			1558			837	761	1027	804	757	1009
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	50	68	26	11								
Volume Left	1	10	4	4								
Volume Right	11	2	19	1								
cSH	1546	1558	955	792								
Volume to Capacity	0.00	0.01	0.03	0.01								
Queue Length 95th (m)	0.0	0.1	0.6	0.3								
Control Delay (s)	0.2	1.1	8.9	9.6								
Lane LOS	A	A	A	A								
Approach Delay (s)	0.2	1.1	8.9	9.6								
Approach LOS			A	A								
Intersection Summary												
Average Delay												
2.7												
Intersection Capacity Utilization												
18.2%												
ICU Level of Service												
A												
Analysis Period (min)												
15												

3: Denman Street & Ted Northe Lane
146324 - 2030 Barclay TIA

Future Built-out - Combined
AM PEAK

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	0	14	2	0	3	9	353	6	2	537	1
Future Volume (vph)	1	0	14	2	0	3	9	353	6	2	537	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.873			0.919			0.998				
Flt Protected		0.997			0.980			0.999				
Satd. Flow (prot)	0	1553	0	0	1607	0	0	3380	0	0	3390	0
Flt Permitted		0.997			0.980			0.999				
Satd. Flow (perm)	0	1553	0	0	1607	0	0	3380	0	0	3390	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		162.8			64.7			50.9			54.9	
Travel Time (s)		11.7			4.7			3.7			4.0	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	1	0	15	2	0	3	10	380	6	2	577	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	16	0	0	5	0	0	396	0	0	580	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		0.0			0.0			0.0			0.0	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 27.3%	ICU Level of Service A											
Analysis Period (min) 15												

3: Denman Street & Ted Northe Lane
146324 - 2030 Barclay TIA

Future Built-out - Combined
AM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	0	14	2	0	3	9	353	6	2	537	1
Future Volume (Veh/h)	1	0	14	2	0	3	9	353	6	2	537	1
Sign Control	Stop		Stop		Free		Free		Free		Free	
Grade	0%		0%		0%		0%		0%		0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	1	0	15	2	0	3	10	380	6	2	577	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							None			None		
Median storage veh												
Upstream signal (m)												55
pX, platoon unblocked	0.88	0.88	0.88	0.88	0.88	0.88						
vC, conflicting volume	794	988	289	710	985	193	578				386	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	493	712	0	398	710	193	247				386	
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1				4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2	
p0 queue free %	100	100	98	100	100	100	99				100	
cM capacity (veh/h)	399	310	954	461	311	816	1158				1169	
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	16	5	200	196	290	290						
Volume Left	1	2	10	0	2	0						
Volume Right	15	3	0	6	0	1						
cSH	878	624	1158	1700	1169	1700						
Volume to Capacity	0.02	0.01	0.01	0.12	0.00	0.17						
Queue Length 95th (m)	0.4	0.2	0.2	0.0	0.0	0.0						
Control Delay (s)	9.2	10.8	0.5	0.0	0.1	0.0						
Lane LOS	A	B	A	A								
Approach Delay (s)	9.2	10.8	0.2	0.0								
Approach LOS	A	B										
Intersection Summary												
Average Delay			0.3									
Intersection Capacity Utilization			27.3%	ICU Level of Service					A			
Analysis Period (min)			15									

4: Denman Street & Barclay Street
146324 - 2030 Barclay TIA

Future Built-out - Combined
AM PEAK

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	32	15	5	23	32	14	323	20	11	520	45
Future Volume (vph)	25	32	15	5	23	32	14	323	20	11	520	45
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor		0.97			0.97			1.00			1.00	
Frt		0.972			0.928			0.991			0.989	
Flt Protected		0.983			0.996			0.998			0.999	
Satd. Flow (prot)	0	1685	0	0	1599	0	0	3342	0	0	3335	0
Flt Permitted		0.907			0.983			0.923			0.945	
Satd. Flow (perm)	0	1532	0	0	1573	0	0	3089	0	0	3154	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			34			17			22	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		162.3			69.7			54.9			50.1	
Travel Time (s)		11.7			5.0			4.0			3.6	
Confl. Peds. (#/hr)	30		30	30		30	15		15	15		15
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	1.00
Adj. Flow (vph)	27	34	16	5	25	34	15	347	22	12	559	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	77	0	0	64	0	0	384	0	0	616	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		0.0			0.0			2.4			2.4	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	0	0		0	0		0	0		0	0	
Detector Template												
Leading Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	1.0	1.0		1.0	1.0		16.0	16.0		16.0	16.0	
Minimum Split (s)	21.0	21.0		21.0	21.0		21.0	21.0		21.0	21.0	
Total Split (s)	21.0	21.0		21.0	21.0		61.0	61.0		61.0	61.0	
Total Split (%)	25.6%	25.6%		25.6%	25.6%		74.4%	74.4%		74.4%	74.4%	
Maximum Green (s)	16.0	16.0		16.0	16.0		56.0	56.0		56.0	56.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												

4: Denman Street & Barclay Street
146324 - 2030 Barclay TIA

Future Built-out - Combined
AM PEAK

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		Max	Max		Ped	Ped		Ped	Ped	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	9.0	9.0		9.0	9.0		9.0	9.0		9.0	9.0	
Pedestrian Calls (#/hr)	30	30		30	30		15	15		15	15	
Act Effct Green (s)		16.0			16.0			16.0			16.0	
Actuated g/C Ratio		0.38			0.38			0.38			0.38	
v/c Ratio		0.13			0.10			0.32			0.51	
Control Delay		8.0			5.8			9.7			11.4	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		8.0			5.8			9.7			11.4	
LOS		A			A			A			B	
Approach Delay		8.0			5.8			9.7			11.4	
Approach LOS		A			A			A			B	
90th %ile Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
90th %ile Term Code	MaxR	MaxR		MaxR	MaxR		Min	Min		Min	Min	
70th %ile Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
70th %ile Term Code	MaxR	MaxR		MaxR	MaxR		Min	Min		Min	Min	
50th %ile Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
50th %ile Term Code	MaxR	MaxR		MaxR	MaxR		Min	Min		Min	Min	
30th %ile Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
30th %ile Term Code	MaxR	MaxR		MaxR	MaxR		Min	Min		Min	Min	
10th %ile Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
10th %ile Term Code	MaxR	MaxR		MaxR	MaxR		Min	Min		Min	Min	
Stops (vph)		40			24			219			391	
Fuel Used(l)		2			1			9			17	
CO Emissions (g/hr)		46			22			176			308	
NOx Emissions (g/hr)		9			4			34			59	
VOC Emissions (g/hr)		11			5			40			71	
Dilemma Vehicles (#)		0			0			0			0	
Queue Length 50th (m)		2.8			1.3			9.2			16.2	
Queue Length 95th (m)		8.4			6.1			16.4			26.9	
Internal Link Dist (m)		138.3			45.7			30.9			26.1	
Turn Bay Length (m)												
Base Capacity (vph)		592			620			3089			3154	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.13			0.10			0.12			0.20	
Intersection Summary												
Area Type:	Other											
Cycle Length: 82												
Actuated Cycle Length: 42												
Natural Cycle: 45												
Control Type: Semi Act-Uncoord												
Maximum v/c Ratio: 0.51												
Intersection Signal Delay: 10.3							Intersection LOS: B					
Intersection Capacity Utilization 46.8%							ICU Level of Service A					

Analysis Period (min) 15
90th %ile Actuated Cycle: 42
70th %ile Actuated Cycle: 42
50th %ile Actuated Cycle: 42
30th %ile Actuated Cycle: 42
10th %ile Actuated Cycle: 42

Splits and Phases: 4: Denman Street & Barclay Street



1: Gilford Street & Ted Northe Lane
146324 - 2030 Barclay TIA

Future Built-out - Combined
PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	11	9	9	12	2	10	28	10	3	9	16
Future Volume (vph)	2	11	9	9	12	2	10	28	10	3	9	16
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.944			0.989			0.971			0.923	
Flt Protected		0.996			0.980			0.990			0.995	
Satd. Flow (prot)	0	1678	0	0	1729	0	0	1715	0	0	1639	0
Flt Permitted		0.996			0.980			0.990			0.995	
Satd. Flow (perm)	0	1678	0	0	1729	0	0	1715	0	0	1639	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		60.5			162.8			48.3			57.6	
Travel Time (s)		4.4			11.7			3.5			4.1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	2	12	10	10	13	2	11	30	11	3	10	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	24	0	0	25	0	0	52	0	0	30	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		2.4			2.4			0.0			0.0	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	15.1%											
Analysis Period (min)	15											
ICU Level of Service A												

1: Gilford Street & Ted Northe Lane
146324 - 2030 Barclay TIA

Future Built-out - Combined
PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	11	9	9	12	2	10	28	10	3	9	16
Future Volume (Veh/h)	2	11	9	9	12	2	10	28	10	3	9	16
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	2	12	10	10	13	2	11	30	11	3	10	17
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None								None			
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	90	88	18	98	90	36	27	41				
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	90	88	18	98	90	36	27	41				
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1	4.1				
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2	2.2				
p0 queue free %	100	98	99	99	98	100	99	100				
cM capacity (veh/h)	875	796	1060	860	793	1037	1587	1568				
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	24	25	52	30								
Volume Left	2	10	11	3								
Volume Right	10	2	11	17								
cSH	895	834	1587	1568								
Volume to Capacity	0.03	0.03	0.01	0.00								
Queue Length 95th (m)	0.6	0.7	0.2	0.0								
Control Delay (s)	9.1	9.4	1.6	0.7								
Lane LOS	A	A	A	A								
Approach Delay (s)	9.1	9.4	1.6	0.7								
Approach LOS	A	A										
Intersection Summary												
Average Delay	4.3											
Intersection Capacity Utilization	15.1%			ICU Level of Service					A			
Analysis Period (min)	15											

2: Gilford Street & Barclay Street
146324 - 2030 Barclay TIA

Future Built-out - Combined
PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	53	4	21	56	15	8	4	20	9	3	1
Future Volume (vph)	2	53	4	21	56	15	8	4	20	9	3	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.991			0.978			0.915			0.990	
Flt Protected		0.998			0.989			0.987			0.966	
Satd. Flow (prot)	0	1765	0	0	1726	0	0	1611	0	0	1706	0
Flt Permitted		0.998			0.989			0.987			0.966	
Satd. Flow (perm)	0	1765	0	0	1726	0	0	1611	0	0	1706	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		60.0			162.3			57.6			46.7	
Travel Time (s)		4.3			11.7			4.1			3.4	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	2	57	4	23	60	16	9	4	22	10	3	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	63	0	0	99	0	0	35	0	0	14	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		0.0			0.0			0.0			0.0	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	22.0%											
Analysis Period (min)	15											
	ICU Level of Service A											

2: Gilford Street & Barclay Street
146324 - 2030 Barclay TIA

Future Built-out - Combined
PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	53	4	21	56	15	8	4	20	9	3	1
Future Volume (Veh/h)	2	53	4	21	56	15	8	4	20	9	3	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	2	57	4	23	60	16	9	4	22	10	3	1
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None				None							
Median storage (veh)												
Upstream signal (m)	162											
pX, platoon unblocked												
vC, conflicting volume	76			61			180	185	59	201	179	68
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	76			61			180	185	59	201	179	68
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			99	99	98	99	100	100
cM capacity (veh/h)	1523			1542			769	698	1007	728	703	995
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	63	99	35	14								
Volume Left	2	23	9	10								
Volume Right	4	16	22	1								
cSH	1523	1542	891	737								
Volume to Capacity	0.00	0.01	0.04	0.02								
Queue Length 95th (m)	0.0	0.3	0.9	0.4								
Control Delay (s)	0.2	1.8	9.2	10.0								
Lane LOS	A	A	A	A								
Approach Delay (s)	0.2	1.8	9.2	10.0								
Approach LOS			A	A								
Intersection Summary												
Average Delay			3.1									
Intersection Capacity Utilization			22.0%	ICU Level of Service				A				
Analysis Period (min)			15									

3: Denman Street & Ted Northe Lane
146324 - 2030 Barclay TIA

Future Built-out - Combined
PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	1	19	7	1	21	12	523	13	7	485	10
Future Volume (vph)	4	1	19	7	1	21	12	523	13	7	485	10
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Frt		0.892			0.903			0.996			0.997	
Flt Protected		0.992			0.988			0.999			0.999	
Satd. Flow (prot)	0	1579	0	0	1592	0	0	3373	0	0	3377	0
Flt Permitted		0.992			0.988			0.999			0.999	
Satd. Flow (perm)	0	1579	0	0	1592	0	0	3373	0	0	3377	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		162.8			64.7			50.9			54.9	
Travel Time (s)		11.7			4.7			3.7			4.0	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	4	1	20	8	1	23	13	562	14	8	522	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	25	0	0	32	0	0	589	0	0	541	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		0.0			0.0			0.0			0.0	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	34.8%						ICU Level of Service A					
Analysis Period (min)	15											

3: Denman Street & Ted Northe Lane
146324 - 2030 Barclay TIA

Future Built-out - Combined
PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	1	19	7	1	21	12	523	13	7	485	10
Future Volume (Veh/h)	4	1	19	7	1	21	12	523	13	7	485	10
Sign Control	Stop		Stop		Free		Free		Free		Free	
Grade	0%		0%		0%		0%		0%		0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	4	1	20	8	1	23	13	562	14	8	522	11
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							None			None		
Median storage veh												
Upstream signal (m)												55
pX, platoon unblocked	0.90	0.90	0.90	0.90	0.90	0.90						
vC, conflicting volume	874	1146	266	892	1144	288	533	576				
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	630	932	0	650	931	288	250	576				
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1	4.1				
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2	2.2				
p0 queue free %	99	100	98	97	100	97	99	99				
cM capacity (veh/h)	312	233	973	305	234	709	1178	993				
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	25	32	294	295	269	272						
Volume Left	4	8	13	0	8	0						
Volume Right	20	23	0	14	0	11						
cSH	664	509	1178	1700	993	1700						
Volume to Capacity	0.04	0.06	0.01	0.17	0.01	0.16						
Queue Length 95th (m)	0.9	1.5	0.3	0.0	0.2	0.0						
Control Delay (s)	10.6	12.6	0.5	0.0	0.3	0.0						
Lane LOS	B	B	A	A								
Approach Delay (s)	10.6	12.6	0.2	0.2								
Approach LOS	B	B										
Intersection Summary												
Average Delay			0.8									
Intersection Capacity Utilization			34.8%		ICU Level of Service				A			
Analysis Period (min)			15									

4: Denman Street & Barclay Street
146324 - 2030 Barclay TIA

Future Built-out - Combined
PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	13	25	8	40	46	19	516	13	19	469	35
Future Volume (vph)	53	13	25	8	40	46	19	516	13	19	469	35
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor		0.93			0.94			1.00			0.99	
Frt		0.963			0.935			0.996			0.991	
Flt Protected		0.972			0.996			0.998			0.998	
Satd. Flow (prot)	0	1623	0	0	1579	0	0	3360	0	0	3328	0
Flt Permitted		0.811			0.978			0.927			0.924	
Satd. Flow (perm)	0	1296	0	0	1540	0	0	3116	0	0	3076	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21			49			7			19	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		162.3			69.7			54.9			50.1	
Travel Time (s)		11.7			5.0			4.0			3.6	
Confl. Peds. (#/hr)	60		60	60		60	40		40	40		40
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	1.00
Adj. Flow (vph)	57	14	27	9	43	49	20	555	14	20	504	35
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	98	0	0	101	0	0	589	0	0	559	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		0.0			0.0			2.4			2.4	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	0	0		0	0		0	0		0	0	
Detector Template												
Leading Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	1.0	1.0		1.0	1.0		16.0	16.0		16.0	16.0	
Minimum Split (s)	21.0	21.0		21.0	21.0		21.0	21.0		21.0	21.0	
Total Split (s)	21.0	21.0		21.0	21.0		61.0	61.0		61.0	61.0	
Total Split (%)	25.6%	25.6%		25.6%	25.6%		74.4%	74.4%		74.4%	74.4%	
Maximum Green (s)	16.0	16.0		16.0	16.0		56.0	56.0		56.0	56.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												

4: Denman Street & Barclay Street
146324 - 2030 Barclay TIA

Future Built-out - Combined
PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		Max	Max		Ped	Ped		Ped	Ped	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	9.0	9.0		9.0	9.0		9.0	9.0		9.0	9.0	
Pedestrian Calls (#/hr)	60	60		60	60		40	40		40	40	
Act Effct Green (s)		16.0			16.0			16.0			16.0	
Actuated g/C Ratio		0.38			0.38			0.38			0.38	
v/c Ratio		0.19			0.16			0.49			0.47	
Control Delay		8.4			6.1			11.6			11.1	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		8.4			6.1			11.6			11.1	
LOS		A			A			B			B	
Approach Delay		8.4			6.1			11.6			11.1	
Approach LOS		A			A			B			B	
90th %ile Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
90th %ile Term Code	MaxR	MaxR		MaxR	MaxR		Min	Min		Min	Min	
70th %ile Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
70th %ile Term Code	MaxR	MaxR		MaxR	MaxR		Min	Min		Min	Min	
50th %ile Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
50th %ile Term Code	MaxR	MaxR		MaxR	MaxR		Min	Min		Min	Min	
30th %ile Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
30th %ile Term Code	MaxR	MaxR		MaxR	MaxR		Min	Min		Min	Min	
10th %ile Green (s)	16.0	16.0		16.0	16.0		16.0	16.0		16.0	16.0	
10th %ile Term Code	MaxR	MaxR		MaxR	MaxR		Min	Min		Min	Min	
Stops (vph)		48			36			380			349	
Fuel Used(l)		3			2			16			15	
CO Emissions (g/hr)		57			35			302			275	
NOx Emissions (g/hr)		11			7			58			53	
VOC Emissions (g/hr)		13			8			70			63	
Dilemma Vehicles (#)		0			0			0			0	
Queue Length 50th (m)		3.5			2.3			15.8			14.5	
Queue Length 95th (m)		10.2			8.6			26.3			24.4	
Internal Link Dist (m)		138.3			45.7			30.9			26.1	
Turn Bay Length (m)												
Base Capacity (vph)		506			617			3116			3076	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.19			0.16			0.19			0.18	
Intersection Summary												
Area Type:	Other											
Cycle Length: 82												
Actuated Cycle Length: 42												
Natural Cycle: 45												
Control Type: Semi Act-Uncoord												
Maximum v/c Ratio: 0.49												
Intersection Signal Delay: 10.7							Intersection LOS: B					
Intersection Capacity Utilization 51.9%							ICU Level of Service A					

4: Denman Street & Barclay Street
146324 - 2030 Barclay TIA

Future Built-out - Combined
PM Peak

Analysis Period (min) 15

90th %ile Actuated Cycle: 42

70th %ile Actuated Cycle: 42

50th %ile Actuated Cycle: 42

30th %ile Actuated Cycle: 42

10th %ile Actuated Cycle: 42

Splits and Phases: 4: Denman Street & Barclay Street



Appendix F

On-Site Vehicle Circulation Analysis

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