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Date: March 26, 2025

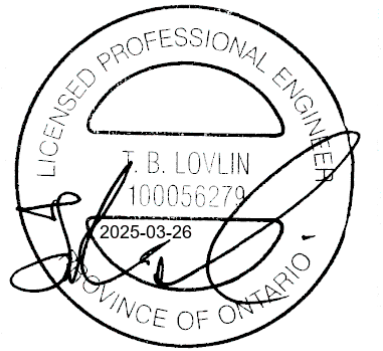
Re: Pedestrian Wind Study
2343 Eglinton Avenue West
Toronto, Ontario
SLR Project #241.031162.00001

Prepared by:

SLR Consulting (Canada) Ltd.
100 Stone Road West – Suite 201
Guelph, ON N1G 5L3

For:

1764174 Ontario Inc.
3080 Dufferin Street
Toronto, ON M6A 2S6



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Revision	Date	Prepared by	Checked by	Approved by
0	March 26, 2025	Mu'taz Suleiman	Tahrana Lovlin	Tahrana Lovlin

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1.0 Introduction

SLR Consulting (Canada) Ltd. (SLR) was retained by 1764174 Ontario Inc. to conduct a quantitative pedestrian wind study for the proposed development at 2343 Eglinton Avenue West in Toronto, Ontario. This report is in support of the Zoning Bylaw Amendment (ZBA) application for the development.

1.1 Existing Development

The proposed development is located on the south side of Eglinton Avenue West, between Caledonia Road and Gilbert Avenue. The site is currently occupied by a low-rise commercial building with a large parking lot. Figure 1 provides an aerial view of the immediate study area.

Immediately surrounding the site are low to mid-rise residential and commercial buildings, except to the west, where there is the Gilbert Parkette. Beyond the immediate surroundings, there are mainly low to mid-rise commercial and/or residential buildings in all directions. A few high-rise buildings are located to the northwest in the extended surroundings.

Typically, developments with ZBA approval within a 500 m radius are included as existing surroundings. For this study, the following ZBA-approved developments were included: 494-498 Gilbert Avenue, 2322 Eglinton Avenue West, 2400 Eglinton Avenue West, 2116 Eglinton Avenue West, and 2280 Eglinton Avenue West. The inclusion of this development was confirmed with the client and the City of Toronto planner.

Figure 1: Aerial view of existing site & surroundings
Credit: Esri, Maxar, Earthstar Geographics, and the GIS User Community (Image Date March 20, 2021)

1.2 Proposed Development

The proposed development consists of a tower and a mid-rise component sitting atop a six-storey podium. The east mid-rise building is 12 storeys tall and is approximately 45 m high, including the mechanical penthouse. The west tower is 43 storeys tall and is approximately 139 m high, including the mechanical penthouse. A 3D rendering of the proposed development is shown in Figure 2.

1.3 Areas of Interest

Areas of interest for pedestrian wind conditions include those areas which pedestrians are expected to use on a frequent basis. Typically, these include sidewalks, main entrances, transit stops, plazas and parks.

The main entrance to the proposed development is located on the north facade, with secondary entrances and exits located on all sides of the development. There are two retail entrances on the north facade along Eglinton Avenue West, with individual unit entrances located on the east facade along Caledonia Road and on the west facade along Gilbert Avenue. There is an outdoor amenity terrace on Level 7. On-site areas of interest are shown in Figures 3a and 3b.

There are five transit stops located within proximity to the proposed development. Four transit stops are located at the Eglinton Avenue West and Caledonia Road intersection, and one transit stop is located to the west of the development along Eglinton Avenue West.

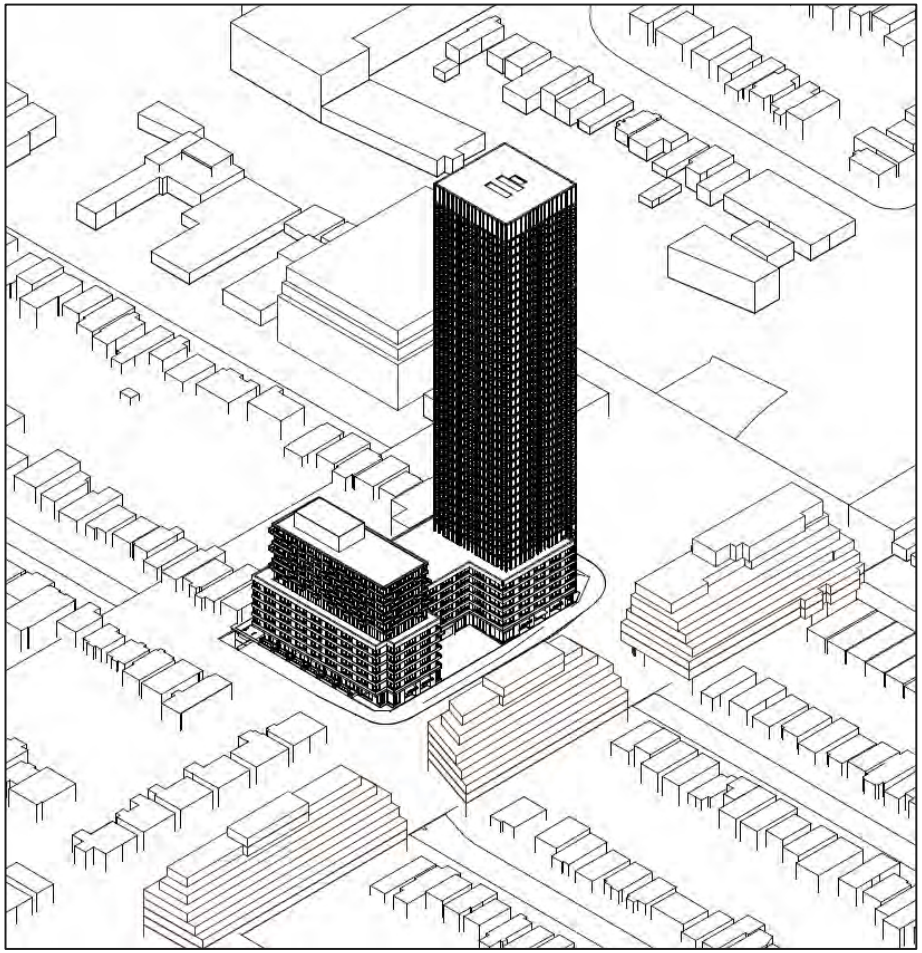


Figure 2: 3D rendering of the proposed development
Credit: RAW Design Inc.

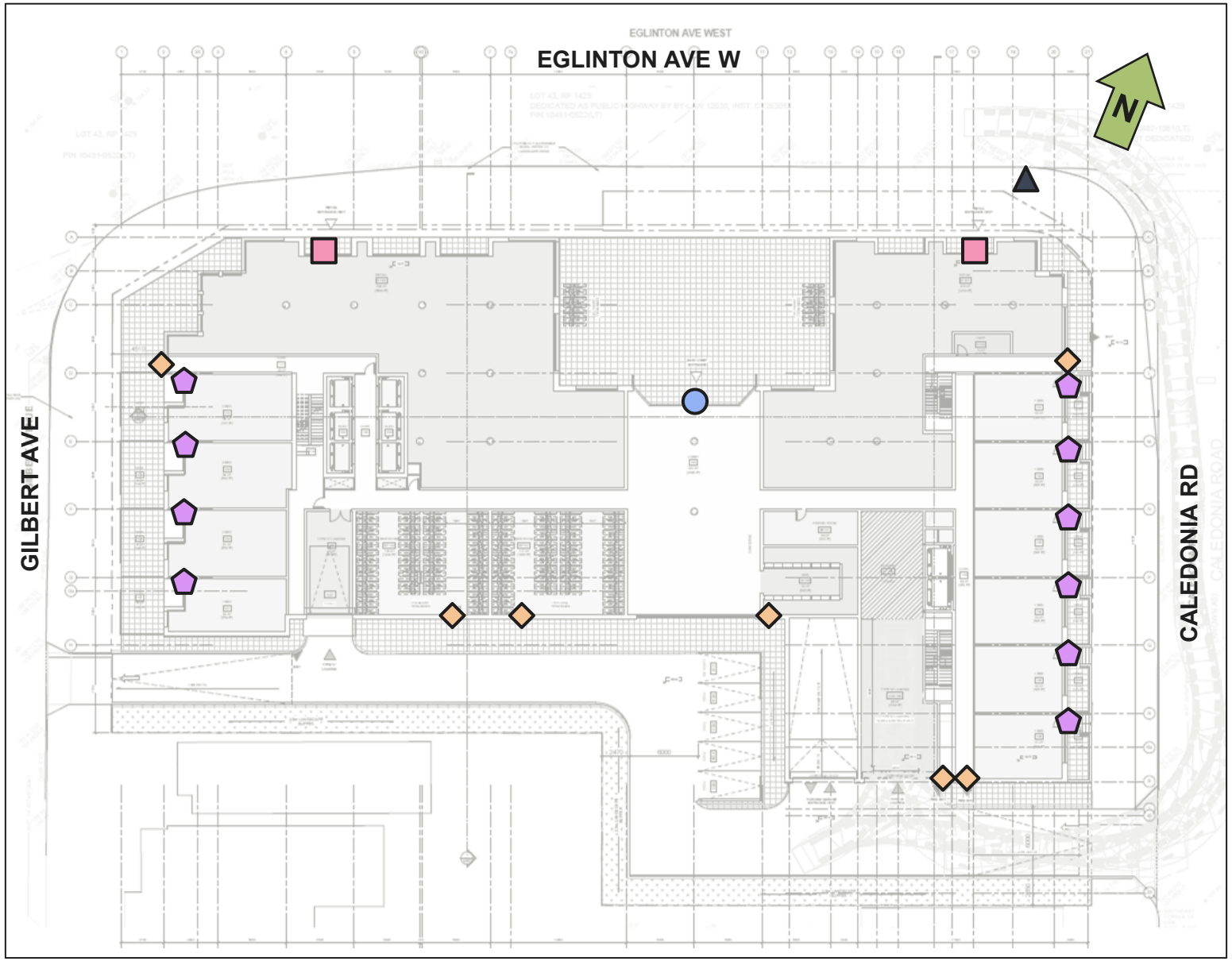


Figure 3a: Areas of interest – Grade
Credit: RAW Design Inc.

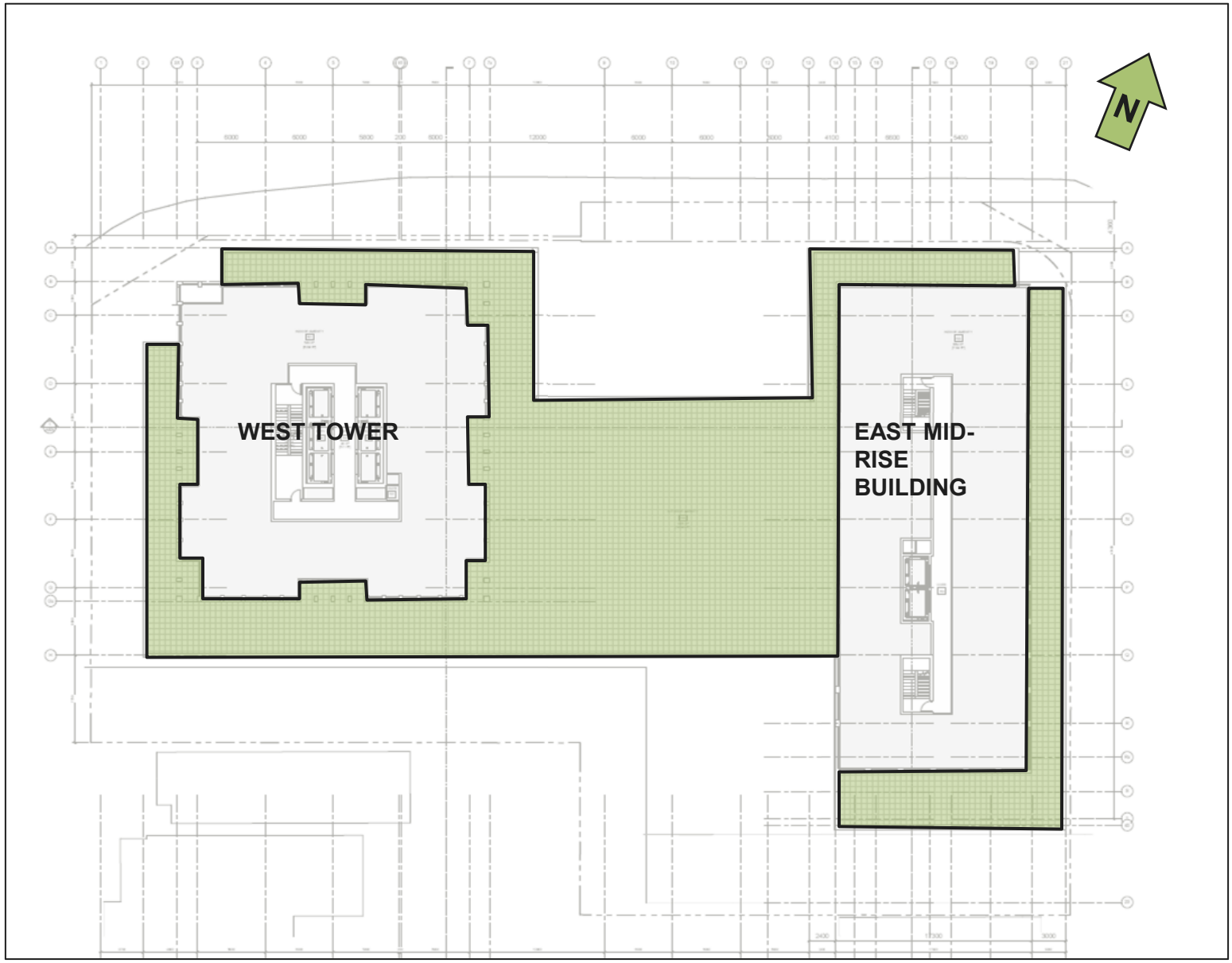


Figure 3b: Areas of interest – Level 7
Credit: RAW Design Inc.

2.0 Approach

The objective of the wind tunnel study is to assist the design team and City Planning officials in making informed decisions about the building form considered and its influence on pedestrian comfort. This quantitative analysis involves the construction of a physical model of the development and surrounding features that influence wind flow. The physical model is instrumented with probes and tested in a wind tunnel. Afterwards, the wind tunnel data are combined with regional meteorological data; this analysis is then compared to the relevant wind criteria and standards in order to determine how appropriate the wind conditions are for the intended pedestrian usage.

2.1 Scale Model Construction

A 1:400 scale model of the proposed development was constructed based on up-to-date drawing information received by SLR on September 9, 2024, from RAW Design Inc.

The proximity model of the surrounding area was built in block form for a radius of approximately 480 m from the site centre. As existing buildings surrounding the site will influence wind characteristics, existing buildings, and those buildings with ZBA approval were included in the model for both the Existing and Proposed Configurations. Information regarding which approved developments to include within the existing surrounds was determined per Section 1.1.

SLR assessed two configurations, for comparison, as follows:

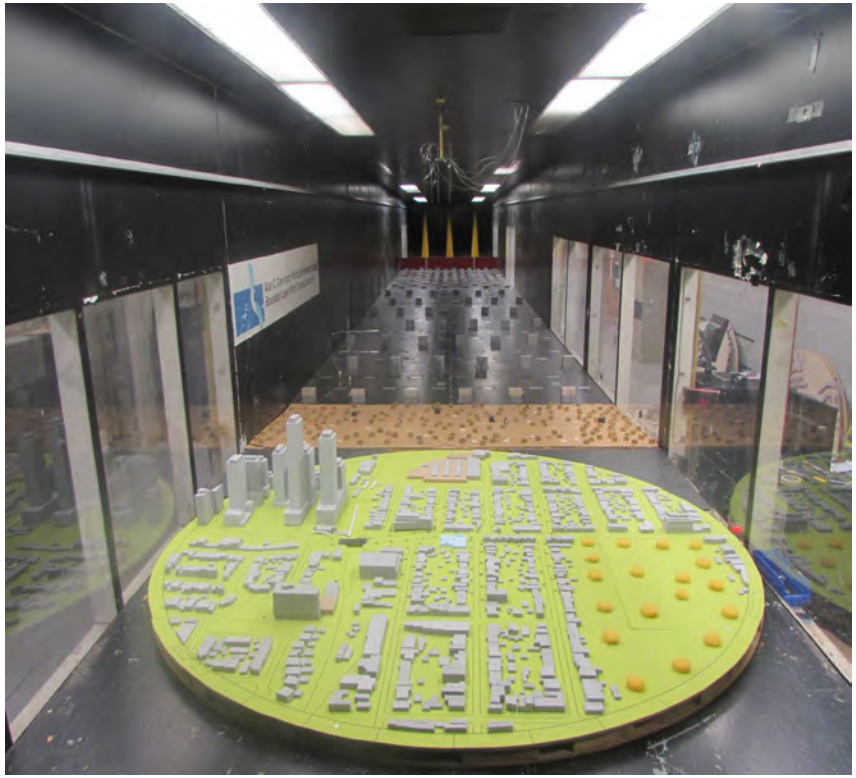
- **Existing Configuration:** Existing site with existing and ZBA-approved surroundings.
- **Proposed Configuration:** Proposed development with existing and ZBA-approved surroundings.

Photographs of the wind tunnel model showing both the Existing Configuration, and the Proposed Configuration are included in Figures 4a and 4b.

2.2 Wind Tunnel

Wind tunnel tests were conducted in the Alan G. Davenport Wind Engineering Group Boundary-Layer Wind Tunnel Laboratory at the University of Western Ontario. The upstream test section of the wind tunnel included generic roughness blocks and turbulence-generating spires to modify the wind flow approaching the model. These features develop characteristics of the wind flow that are similar to the actual site. The test model is rotated on a turn-table to simulate different wind directions with the upstream terrain being changed as appropriate to reflect the various upwind conditions encountered around the site.

The test model was equipped with 90 omni-directional probes to record wind speed at the pedestrian-level (approximately 1.5 m above grade). The orientation of the model was rotated in 10° intervals on the turn-table to permit measurement of wind speed at each probe location for 36 wind directions. The wind tunnel data were then combined with the wind climate model for this region to predict the occurrence of wind speeds in the pedestrian realm and compare against wind criteria for comfort and safety.



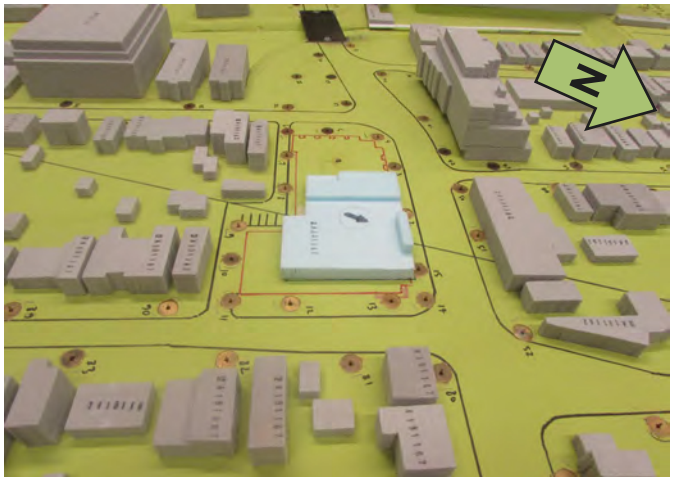
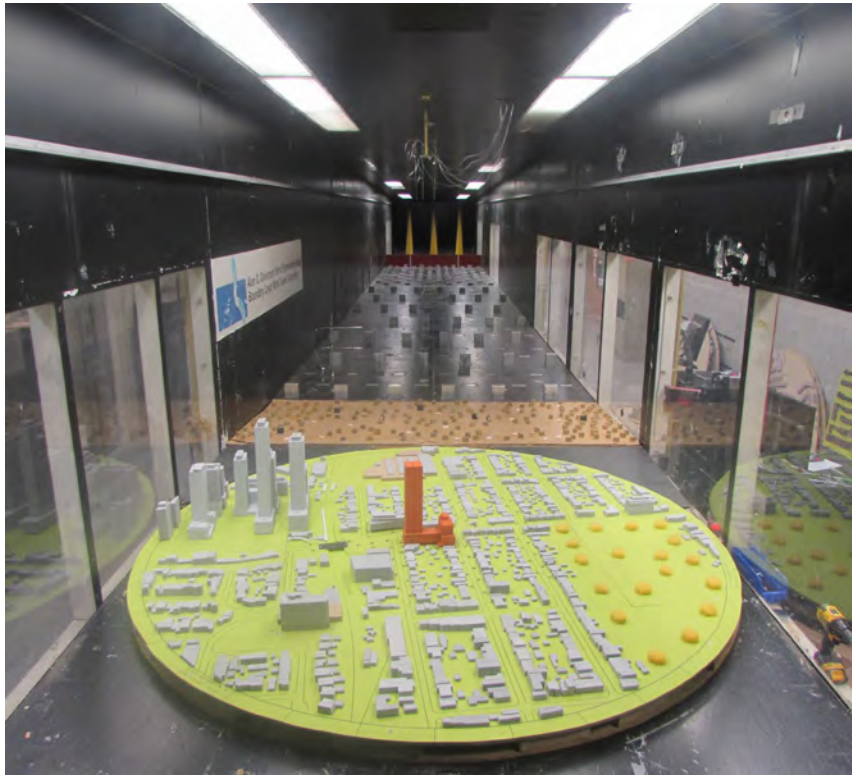


Figure 4a: Existing Configuration



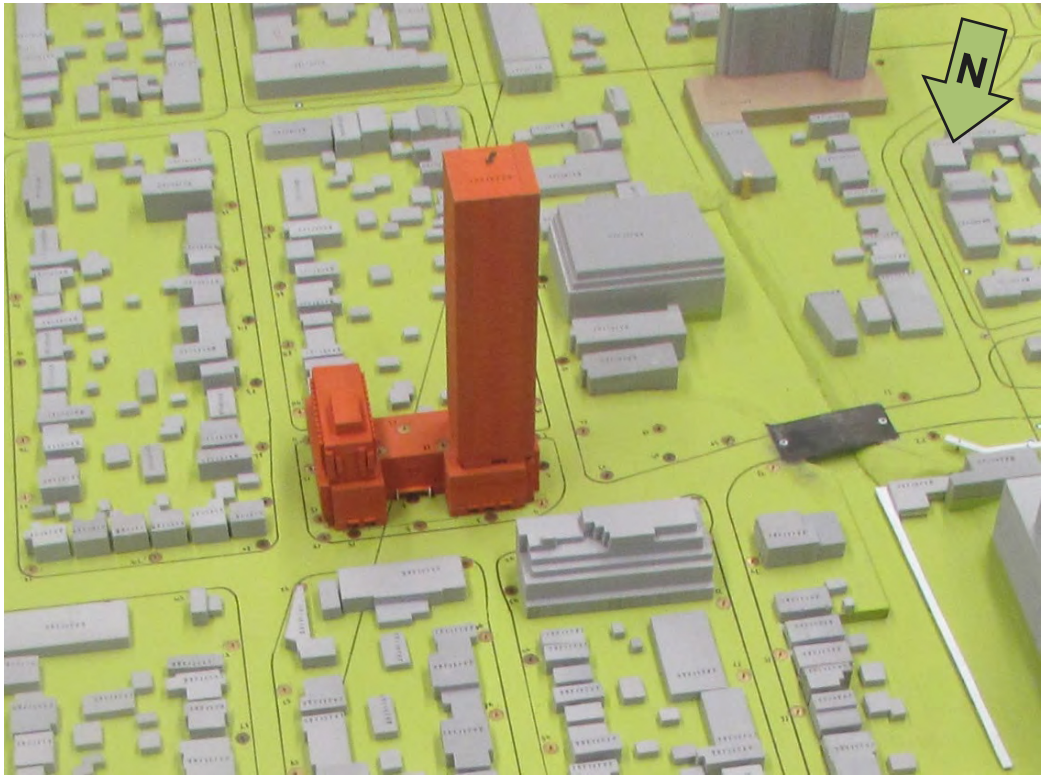


Figure 4b: Proposed Configuration

2.3 Wind Climate

Wind data recorded at Pearson International Airport in Toronto for the period of 1991 to 2020 were obtained and analysed to create a wind climate model for the region. Annual and seasonal wind distribution diagrams ("wind roses") are shown in Figure 5. These diagrams illustrate the percentage of time wind blows from the 16 main compass directions. Of main interest are the longest peaks that identify the most frequently occurring wind directions. The annual wind rose indicates that winds approaching from the northwest quadrant are most prevalent. The seasonal wind roses readily show how the prevalent winds shift throughout the year.

The directions from which stronger winds (e.g., > 30 km/h) approach are also of interest as they have the highest potential of creating problematic wind conditions, depending upon site exposure and the building configurations. The wind roses in Figure 5 also identify the directional frequency of these stronger winds, as indicated in the figure's legend colour key. On an annual basis, strong winds occur from the west-southwest through northwest to north directions. All wind speeds and directions were included in the wind climate model.

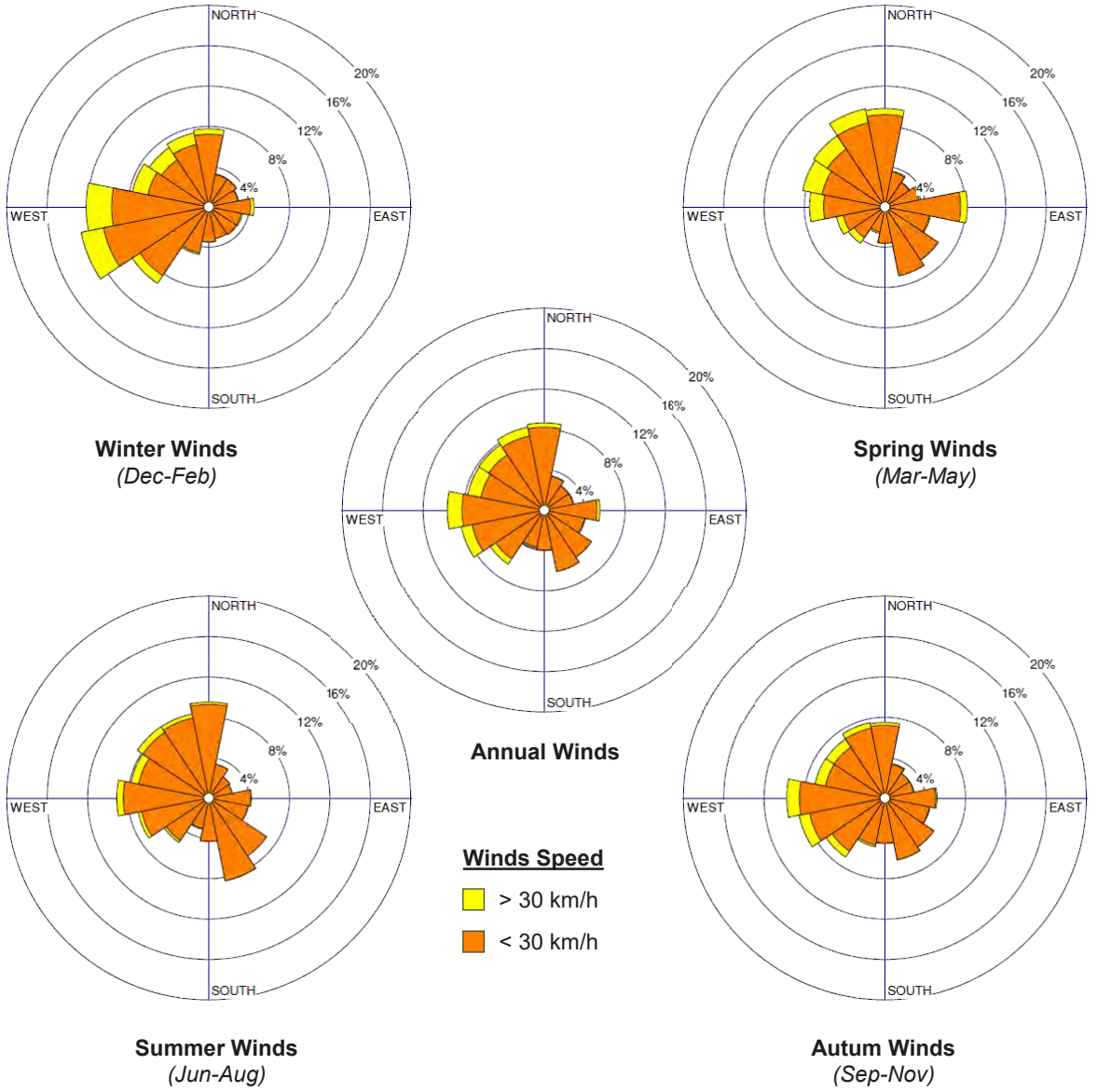


Figure 5: Wind Roses for Toronto Pearson International Airport (1991-2020)

3.0 Pedestrian Wind Criteria

Wind comfort conditions are discussed in terms of being acceptable for certain pedestrian activities and are based on predicted wind force and the expected frequency of occurrence. Wind chill, clothing, humidity and exposure to direct sun, for example, all affect a person's thermal comfort; however, these influences are not considered in the wind comfort criteria.

The comfort criteria, which are based on certain predicted hourly GEM wind speeds being exceeded 20% of the time, are summarized in Table 1. By allowing for a 20% exceedance, it assumes wind speeds will be comfortable for the corresponding activity for at least four out of five days. The comfort criteria consider only daytime hours, between 6:00 am and 11:00 pm. GEM is defined as the maximum of either mean wind speed or gust wind speed divided by 1.85.

The criterion for wind safety in the table is based on hourly gust wind speeds that are exceeded nine hours per year (approximately 0.1% of the time). When the criterion is exceeded, wind mitigation measures are advised. The wind safety criterion is shown in Table 2.

These criteria are based on the Pedestrian Level Wind Study Terms of Reference Guide of the City of Toronto, which came into effect in June of 2022.

Table 1: Wind Comfort Criteria

Comfort Category	GEM Wind Speed Exceeded 20% of the time	Description of Wind Comfort
Sitting	≤ 10 km/h	Calm or light breezes desired for outdoor restaurants and seating areas where one can read a paper without having it blown away.
Standing	≤ 15 km/h	Gentle breezes suitable for main building entrances and bus stops.
Walking	≤ 20 km/h	Moderate breezes that can be tolerated if one's objective is to walk, run or cycle without lingering.
Uncomfortable	> 20 km/h	Strong winds of this magnitude are considered a nuisance for most activities, and wind mitigation is typically recommended.

Table 2: Wind Safety Criterion

Safety Criterion	Gust Wind Speed Exceeded Once Per Year (0.1%)	Description of Wind Effects
Exceeded	> 90 km/h	Excessive gust speeds that can adversely affect a pedestrian's balance and footing. Wind mitigation is typically required.

4.0 Results

Figures 6a through 7b present graphical images of the wind comfort conditions for the summer and winter months around the proposed development. These typically represent the seasonal extremes of best and worst case. Appendix A presents the wind comfort conditions for spring and autumn. The “comfort zones” shown are based on an integration of wind speed and frequency for all 36 wind directions tested with the seasonal wind climate model. The presence of mature trees can lead to wind comfort levels that are marginally more comfortable than shown, during seasons when foliage is present. Appendix B presents wind comfort and safety conditions in tabular form.

There are generally accepted wind comfort levels that are desired for various pedestrian uses. However, in some climates, these may be difficult to achieve in the winter due to the overall climate. For sidewalks, walkways and pathways, wind conditions suitable for walking are desirable year-round but may not be feasible in the winter. For main entrances, transit stops, and public amenity spaces such as parks and playgrounds, wind conditions conducive to standing are preferred throughout the year. For on-site amenity areas, wind conditions suitable for sitting or standing are desirable during the summer, with stronger wind flows, conducive to walking, tolerated in the winter. The most stringent category of sitting is desirable during the summer for dedicated seating areas, such as patios, where calmer wind is expected for the comfort of patrons.

4.1 Building Entrances & Walkways (Locations 1-15)

In the Existing Configuration, on-site wind conditions are comfortable for walking or better year-round (Figures 6a and 6b). Wind conditions at the nearby transit stop (Location 14) are generally comfortable for standing or better throughout the year, which is appropriate for the intended use.

In the Proposed Configuration, wind conditions on the site are generally comfortable for standing in the summer. The exception is around the northwest building corner, where conditions are comfortable for walking (Figure 7a). During the winter, wind conditions around the proposed development are comfortable for walking or better (Figure 7b).

Wind conditions at the main entrance (Location 1) are suitable for standing throughout the year (Figures 7a and 7b), which is appropriate. Wind conditions at the exits (Locations 5, 10, and 13) are comfortable for standing in the summer (Figure 7a), and for walking or better in the winter (Figure 7b), which is considered appropriate for the intended use. Wind conditions at the retail entrances (Locations 3 and 15) are generally comfortable for standing throughout the year (Figures 7a and 7b). An exception is a retail entrance to the east, where wind conditions are comfortable for walking in the winter; however, the entrances are recessed behind the main facade, which is positive in providing local wind protection. Individual unit entrances are located along the east and west facades (Locations 6 and 12). Wind conditions at these entrances are comfortable for standing in the summer, and for walking or better in the winter (Figures 7a and 7b). The individual unit entrances are recessed beneath the main facade and are surrounded by local wind screens, which are positive in providing local wind protection. Thus, these wind conditions are considered suitable for the intended use. We recommend maintaining these design features in the final design.

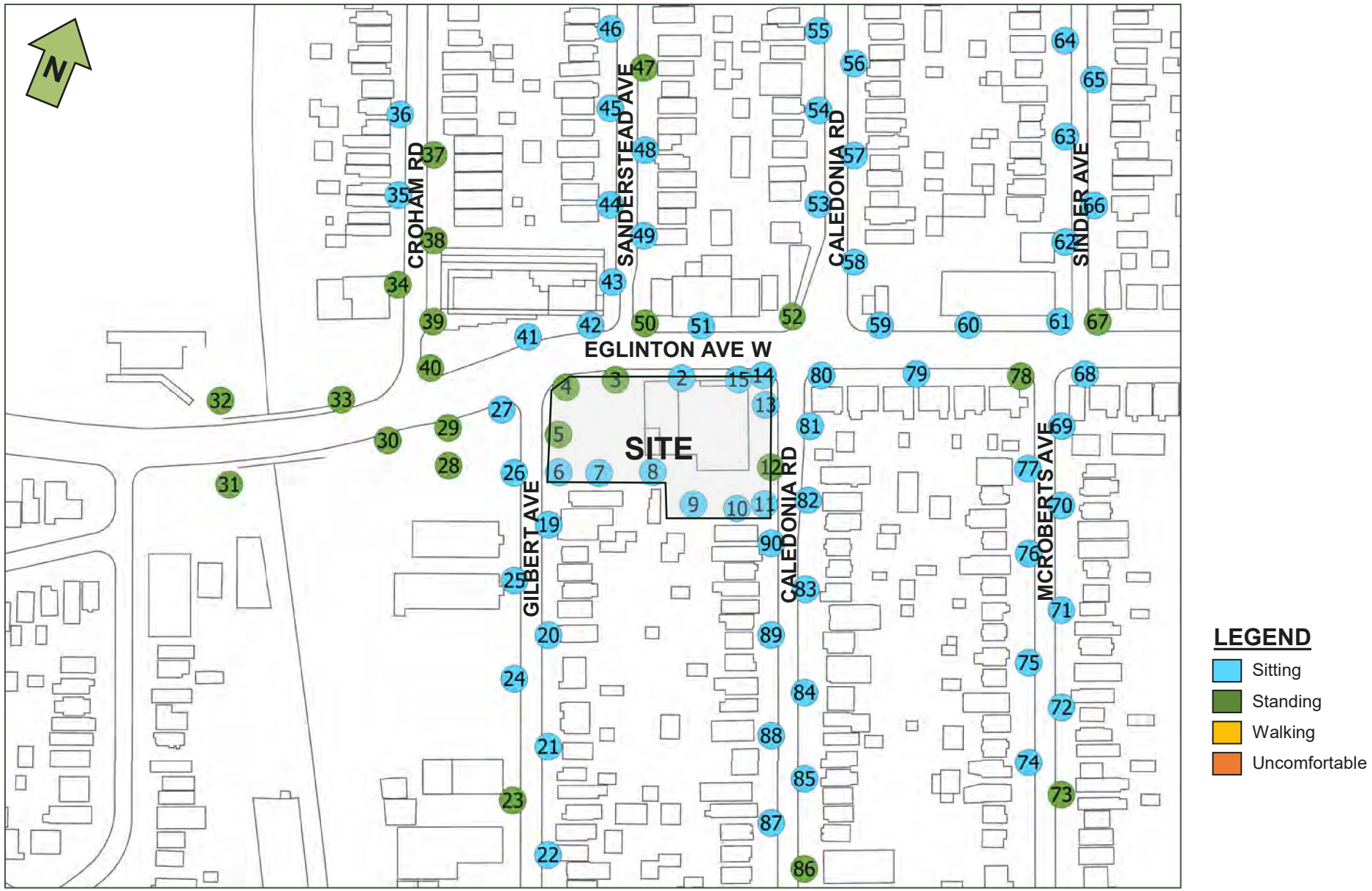


Figure 6a: Existing Configuration – Pedestrian Wind Comfort Conditions – Summer

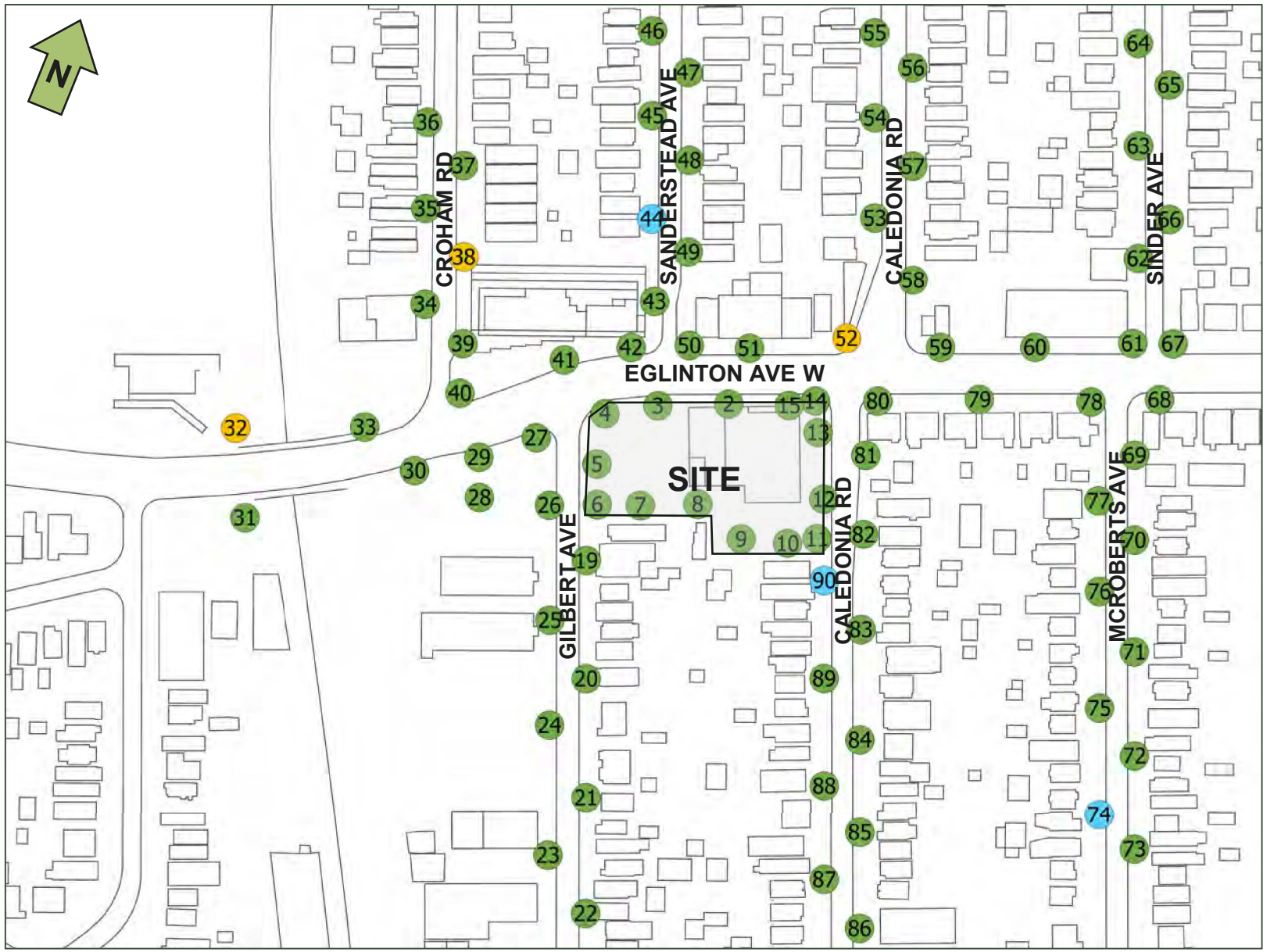


Figure 6b: Existing Configuration – Pedestrian Wind Comfort Conditions – Winter

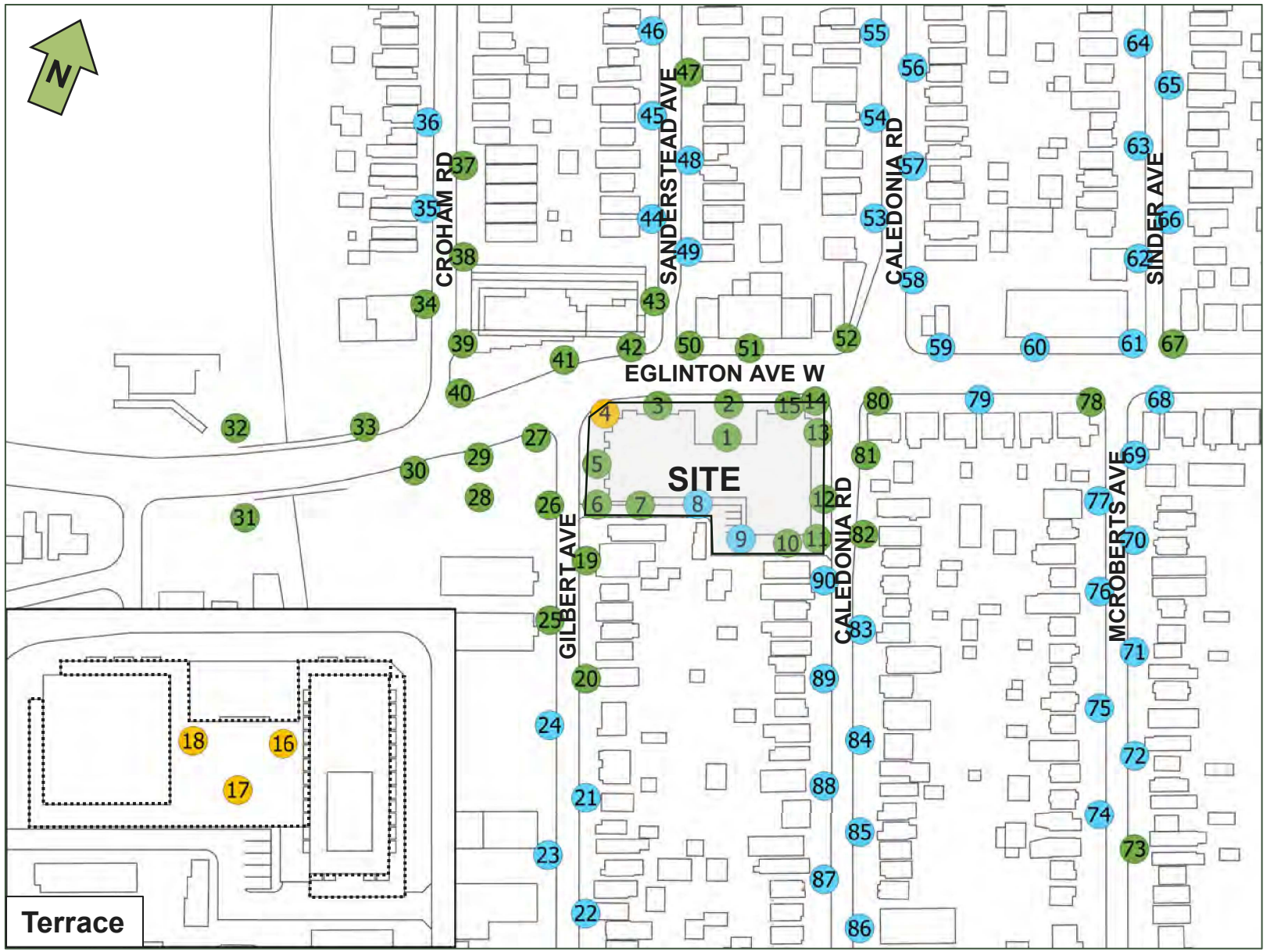


Figure 7a: Proposed Configuration – Pedestrian Wind Comfort Conditions – Summer

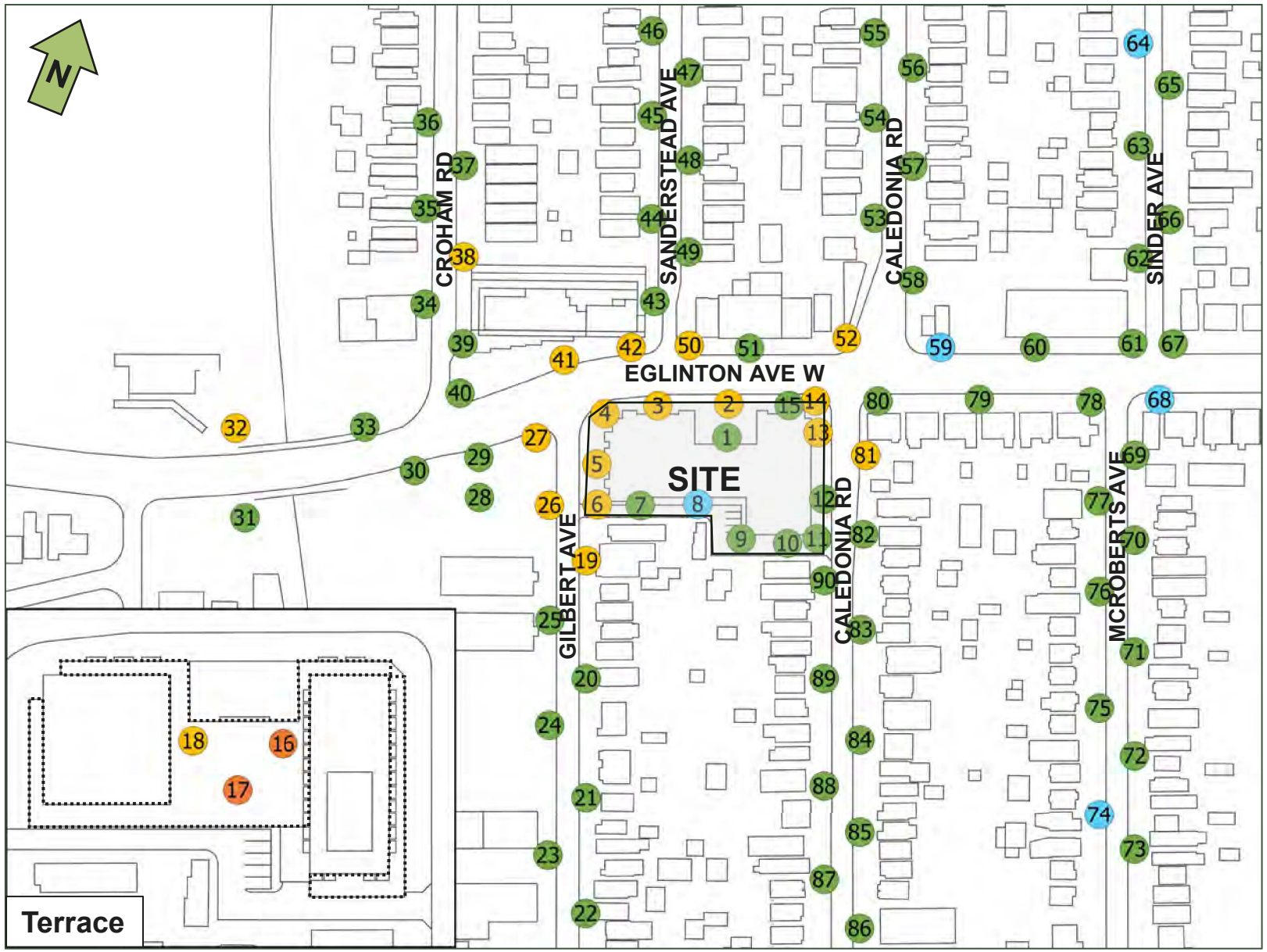


Figure 7b: Proposed Configuration – Pedestrian Wind Comfort Conditions – Winter

Wind conditions at the nearby transit stop (Location 14) are conducive to standing in the summer (Figure 7a), and for walking in the winter (Figure 7b). Winter wind speeds marginally exceed the standing threshold; therefore, these conditions are considered appropriate.

4.2 Level 7 Outdoor Amenity Terrace (Locations 16-18)

Wind conditions on the Level 7 outdoor amenity terrace are comfortable for walking in the summer (Figure 7a) and are uncomfortable in the winter (Figure 7b).

These wind conditions are windier than desired for the intended use. SLR will work with the design team to develop effective wind control features to improve the windy conditions. The details and placement of these features can be determined at the SPA phase.

4.3 Surrounding Sidewalks (Locations 19-90)

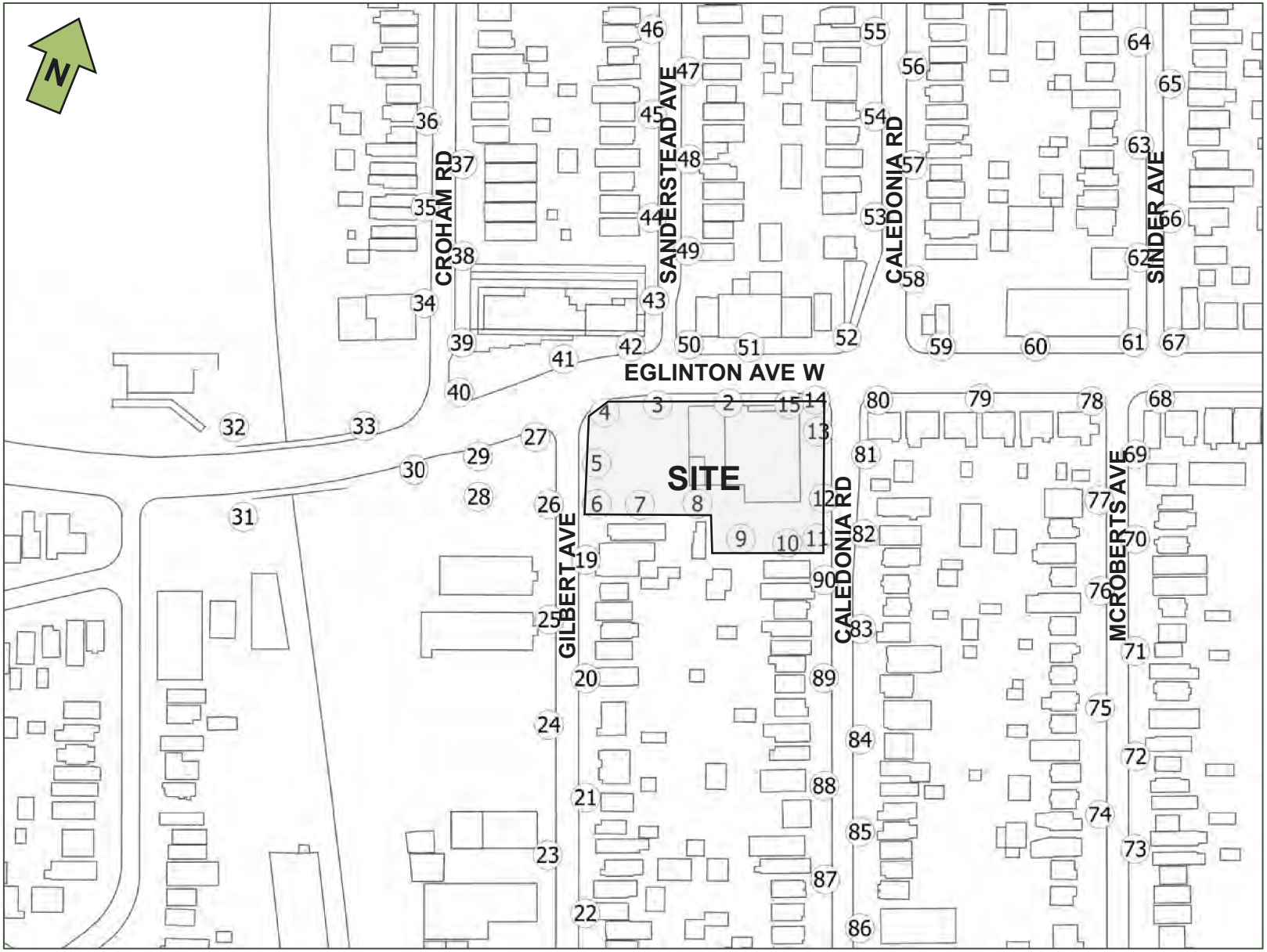
Existing wind conditions along the surrounding sidewalks are comfortable for walking or better throughout the year (Figures 6a and 6b), which is suitable for the intended use. Wind conditions in the Gilbert Parkette (Location 28) are comfortable for standing throughout the year (Figures 6a and 6b), which is suitable for the intended use. Wind conditions at the nearby transit stops (Locations 27, 52, 59, and 81) are generally comfortable for standing or better throughout the year, which is appropriate for the intended use. One exception is at the transit stop across from the site (Location 52), where wind conditions are suitable for walking in the winter months.

In the Proposed Configuration, wind conditions continue to be suitable for the intended use. Wind conditions comfortable for walking or better occur along the surrounding sidewalks throughout the year (Figures 7a and 7b). In the Gilbert Parkette (Location 28), wind conditions continue to be comfortable for standing throughout the year. Wind conditions at the nearby transit stops (Locations 27, 52, 59, and 81) are generally comfortable for standing or better year-round (Figures 7a and 7b). Exceptions include the transit stop at Location 52, where wind conditions continue to be comfortable for walking in the winter, and the transit stop at Location 81, where the transit stop incorporates a shelter. Thus, these wind conditions are considered suitable.

4.4 Wind Safety

In the Existing Configuration, the wind safety criterion is met in all areas on-site and surrounding the site on an annual basis (Figure 8a).

In the Proposed Configuration (Figure 8b), the wind safety criterion is met in all areas at grade on an annual basis. The one exception is on the Level 7 outdoor amenity terrace (Location 17), where the criterion is exceeded annually. Recommendations are discussed in Section 4.2.



LEGEND

Exceeds Safety Criterion

Figure 8a: Existing Configuration – Pedestrian Wind Safety Conditions – Annual

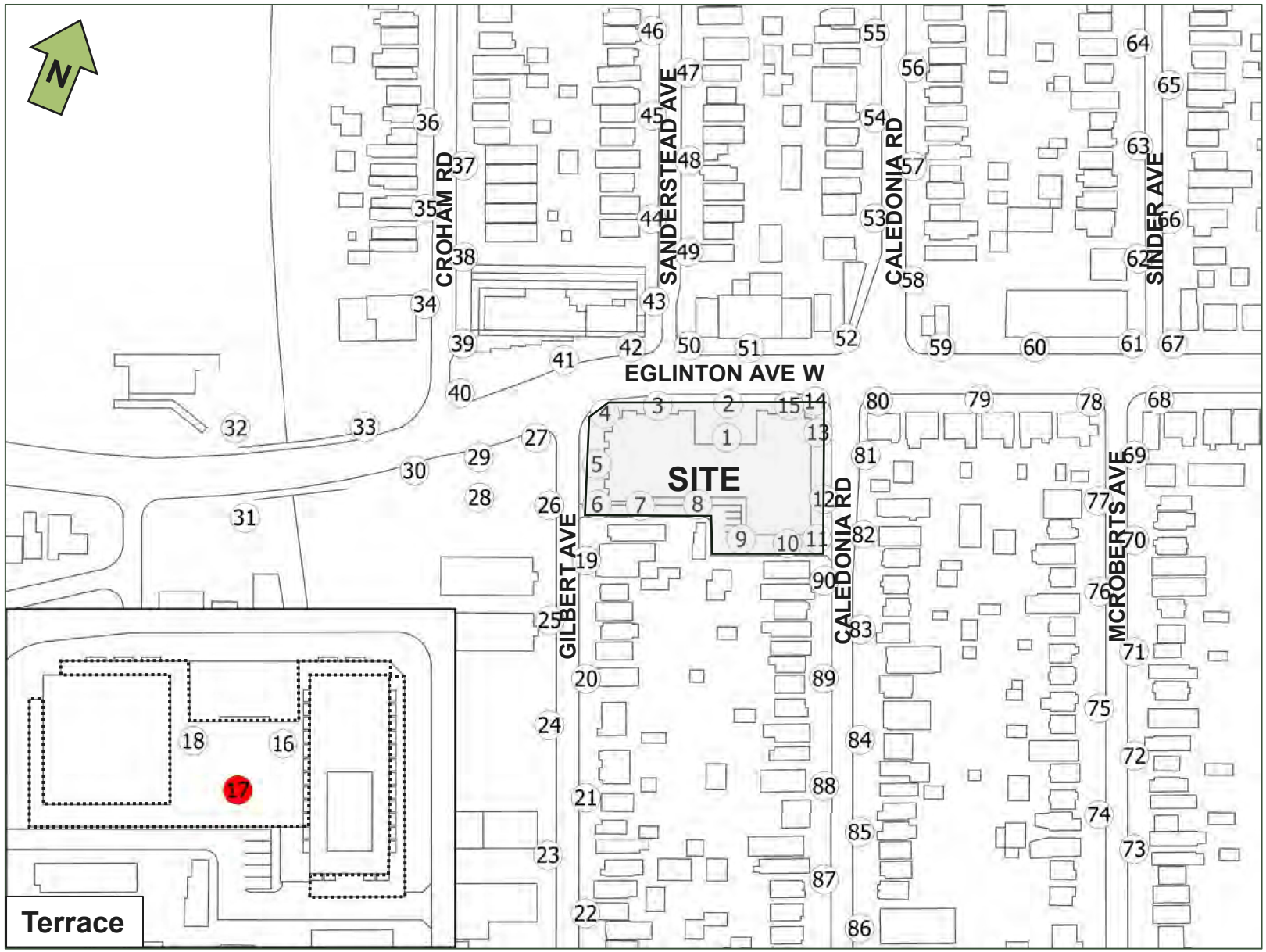


Figure 8b: Proposed Configuration – Pedestrian Wind Safety Conditions – Annual

5.0 Conclusion & Recommendations

The pedestrian wind conditions predicted for the proposed development at 2343 Eglinton Avenue West in Toronto have been assessed through quantitative wind tunnel modelling techniques. Based on the results of our study, the following conclusions have been reached:

- On an annual basis, the wind safety criterion is generally met in all areas on and off the site in the Existing Configuration and the Proposed Configuration. The exception is the central area of the Level 7 outdoor amenity terrace in the Proposed Configuration. Recommendations are provided.
- Existing wind conditions on and around the site are generally suitable for the intended use throughout the year, including the surrounding sidewalks, the Gilbert Parkette, and the nearby transit stops.
- With the addition of the proposed development, wind conditions on site, including the main entrance, secondary entrances and exits, retail entrances, and individual unit entrances are generally appropriate for the intended use year-round. Recommendations are provided.
- On the outdoor amenity terraces, wind conditions are considered breezier than desired for the intended use. SLR will work with the design team to develop effective wind control features for the SPA phase.
- Wind conditions continue to be suitable for the intended use throughout the year on the surrounding sidewalks around the proposed development, in the Gilbert Parkette, and at the nearby transit stops.

6.0 Statement of Limitations

This report has been prepared by SLR Consulting (Canada) Ltd. (SLR) for 1764174 Ontario Inc. (Client) in accordance with the scope of work and all other terms and conditions of the agreement between such parties. SLR acknowledges and agrees that the Client may provide this report to government agencies, interest holders, and/or Indigenous communities as part of project planning or regulatory approval processes. Copying or distribution of this report, in whole or in part, for any other purpose other than as aforementioned is not permitted without the prior written consent of SLR.

Any findings, conclusions, recommendations, or designs provided in this report are based on conditions and criteria that existed at the time work was completed and the assumptions and qualifications set forth herein.

This report may contain data or information provided by third party sources on which SLR is entitled to rely without verification and SLR does not warranty the accuracy of any such data or information.

Nothing in this report constitutes a legal opinion nor does SLR make any representation as to compliance with any laws, rules, regulations, or policies established by federal, provincial territorial, or local government bodies, other than as specifically set forth in this report. Revisions to legislative or regulatory standards referred to in this report may be expected over time and, as a result, modifications to the findings, conclusions, or recommendations may be necessary.

Appendix A

Pedestrian Wind Comfort & Safety
Spring (March – May) & Autumn (September – November)

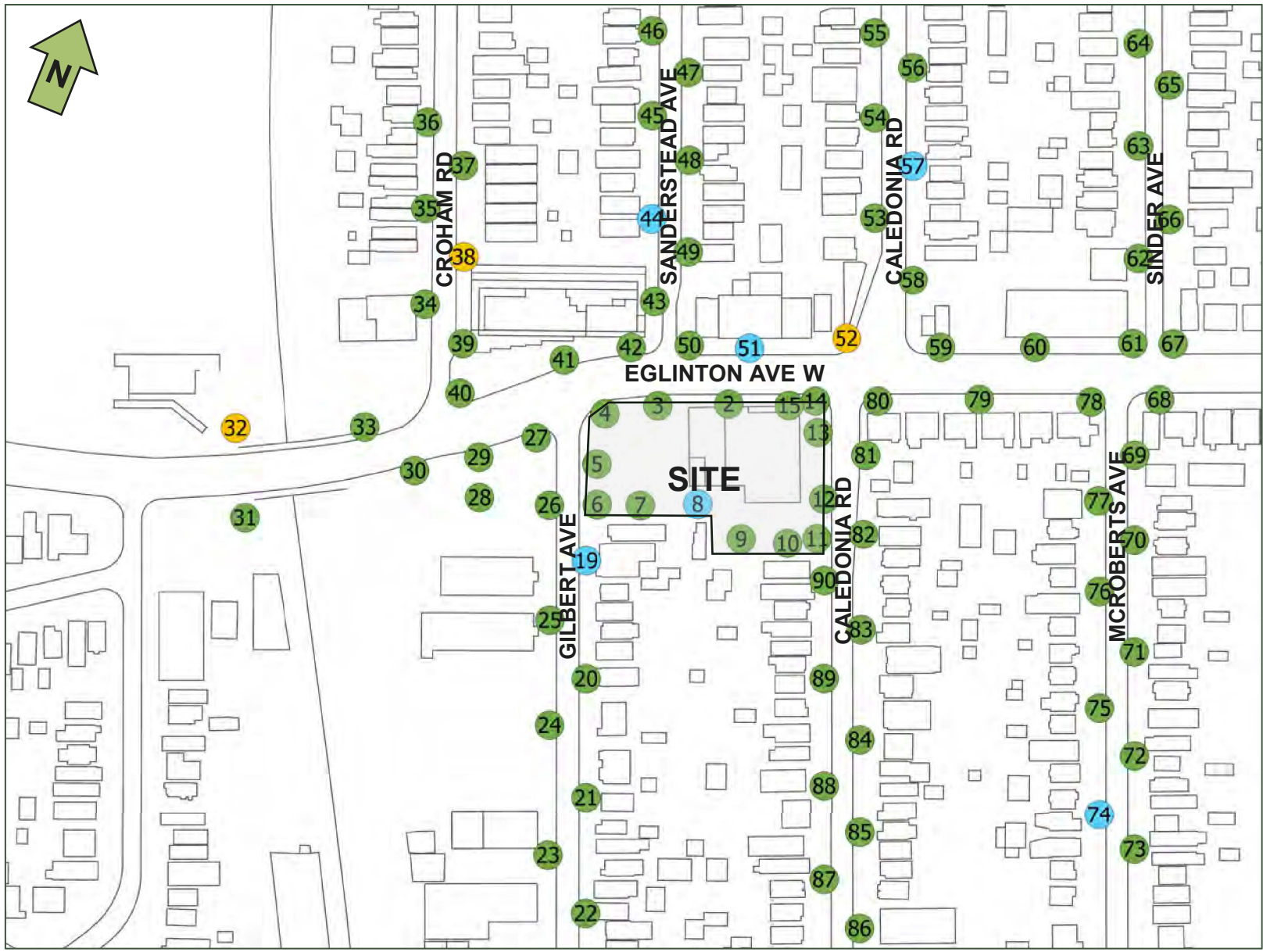


Figure A1a: Existing Configuration – Pedestrian Wind Comfort Conditions – Spring

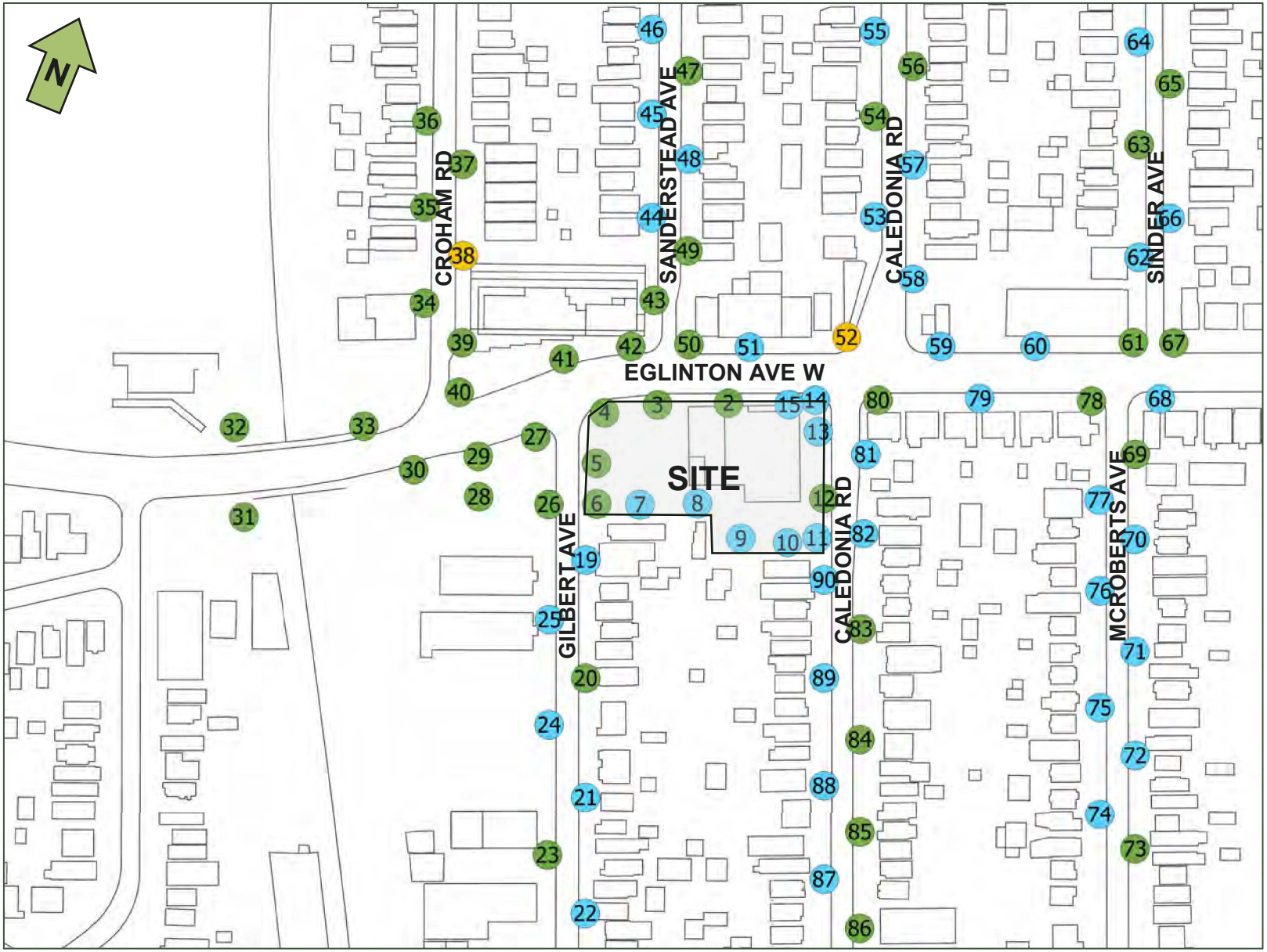


Figure A1b: Existing Configuration – Pedestrian Wind Comfort Conditions – Autumn

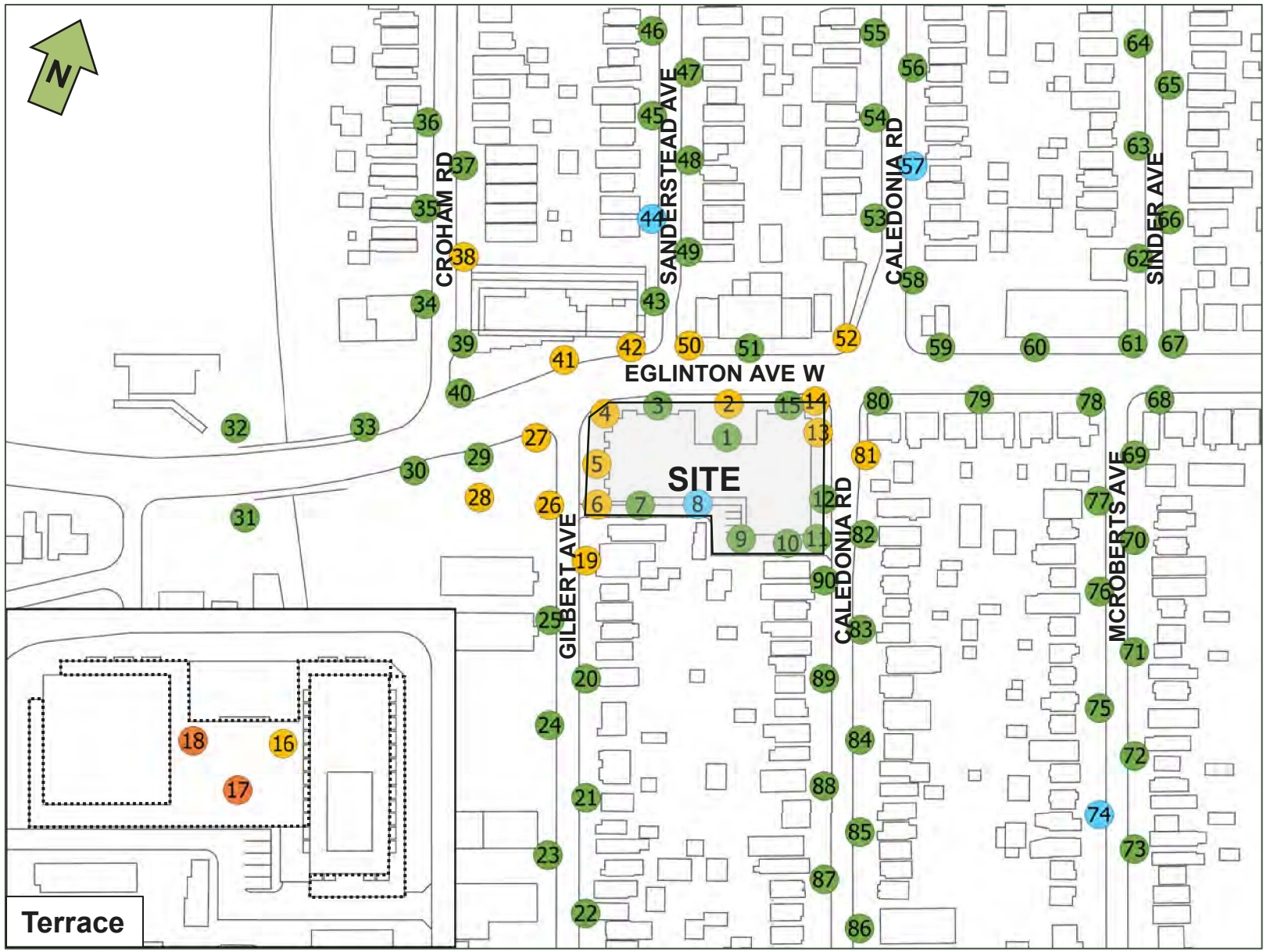


Figure A2a: Proposed Configuration – Pedestrian Wind Comfort Conditions – Spring

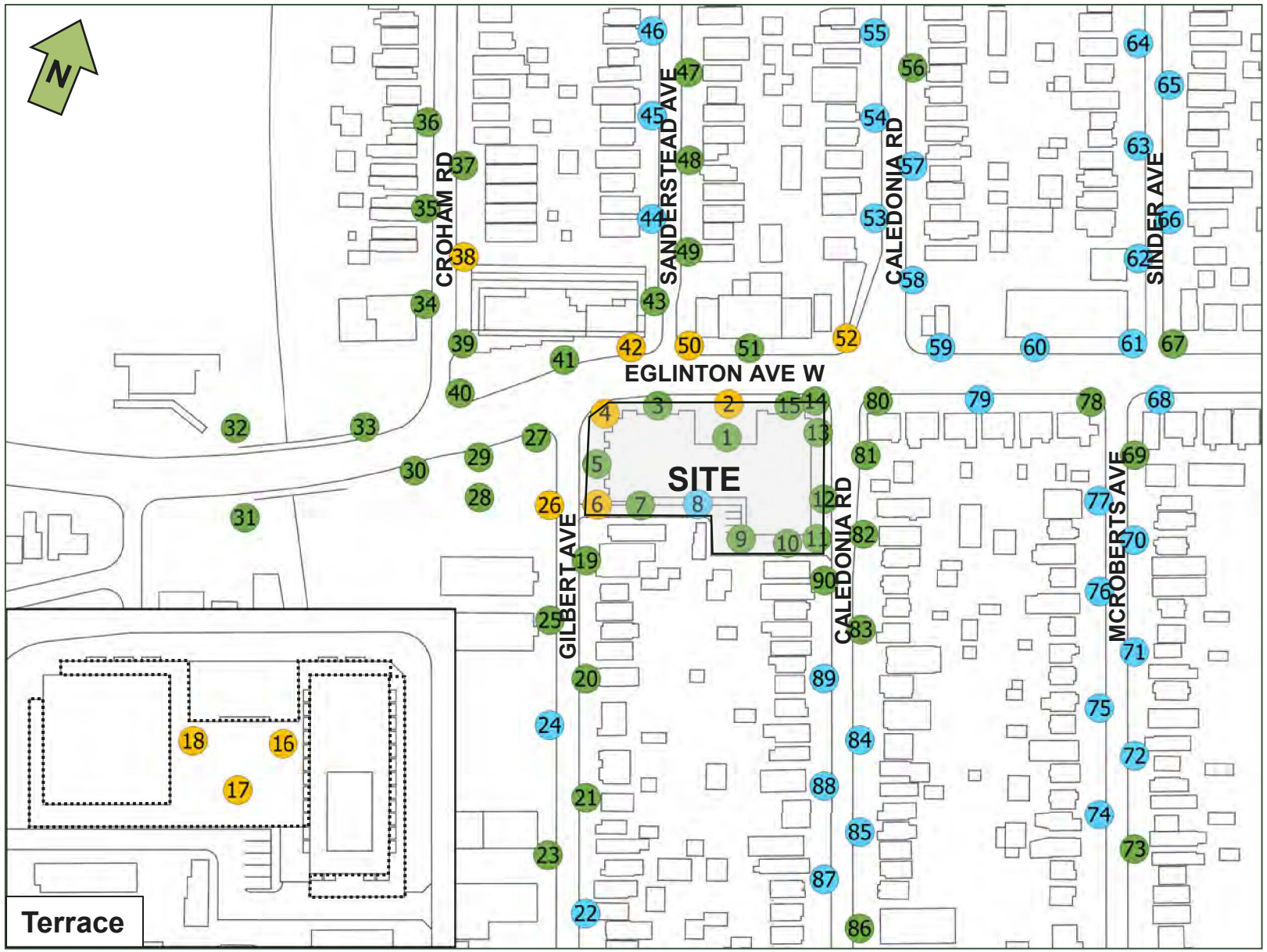


Figure A2b: Proposed Configuration – Pedestrian Wind Comfort Conditions – Autumn

Appendix B

Pedestrian Wind Comfort & Safety Tables

Interpretation of Results

Example Table 1 illustrates the wind comfort and safety criteria. The table provides the GEM (Gust Equivalent Mean) wind speed (in km/h) exceeded 20% of the time for comfort for each of the four seasons for each configuration. It also categorizes the wind speeds as either sitting, standing, walking or uncomfortable (see wind speed ranges in Example Table 2). In addition, the table provides the gust wind speed exceeded 0.1% of the time annually.

For instance, at Location 1 there is not data in the Existing Configuration, while in the Proposed Configuration, wind conditions are suitable for walking in the winter, spring and autumn seasons, while in the summer wind conditions are suitable for standing.

At Location 3, wind conditions are suitable for walking in the winter, spring and autumn seasons in the Existing Configuration, while in the summer wind conditions are conducive to sitting. In the Proposed Configuration, wind conditions are suitable for walking in the spring and autumn, standing in the summer, and uncomfortable in the winter. In addition, the safety criteria is exceeded on an annual basis at Location 3 in the Proposed Configuration.

Example Table 1: Pedestrian Wind Conditions

Location	Configuration	Wind Comfort				Wind Safety
		GEM Speed Exceeded 20% of the Time (km/h)				Gust Speed Exceeded 0.1% of the Time (km/h)
		Winter	Spring	Summer	Autumn	
1	Existing					
1	Proposed	19.3	18.3	15.0	16.1	71.7
2	Existing	12.5	11.3	6.8	11.7	71.4
2	Proposed	16.6	18.1	14.7	15.8	80.0
3	Existing	17.6	14.2	9.8	15.8	79.5
3	Proposed	20.9	15.7	10.3	18.6	95.6

Example Table 2: Categories

Criteria	Speed
Sitting	≤ 10 km/h
Standing	≤ 15 km/h
Walking	≤ 20 km/h
Uncomfortable	> 20 km/h
Safety	> 90 km/h

Table B1-1: Pedestrian Wind Conditions

Location	Configuration	Wind Comfort					Wind Safety
		GEM Speed Exceeded 20% of the Time (km/h)					Gust Speed Exceeded 0.1% of the Time (km/h)
		Annual	Winter	Spring	Summer	Autumn	
1	Existing						
1	Proposed	11.7	13.3	12.1	10.0	11.4	60.3
2	Existing	10.8	11.4	12.0	9.5	10.1	48.9
2	Proposed	16.0	17.8	16.8	13.6	15.6	70.2
3	Existing	12.2	13.2	13.1	10.6	11.6	50.0
3	Proposed	14.4	16.9	14.3	12.3	14.4	77.4
4	Existing	12.5	13.8	13.1	10.7	11.9	50.9
4	Proposed	18.2	19.3	19.8	16.1	17.4	73.0
5	Existing	11.8	13.0	12.5	10.2	11.3	49.4
5	Proposed	15.6	16.2	17.7	14.1	14.4	76.3
6	Existing	11.0	12.0	11.8	9.5	10.5	44.6
6	Proposed	16.7	17.7	18.4	15.0	15.8	73.2
7	Existing	9.9	10.8	10.7	8.5	9.4	43.5
7	Proposed	11.6	12.7	12.4	10.1	11.1	49.4
8	Existing	9.6	10.7	10.0	8.1	9.2	43.3
8	Proposed	9.0	9.9	9.7	7.9	8.6	43.7
9	Existing	10.1	10.9	11.1	8.8	9.6	45.2
9	Proposed	10.9	11.6	11.7	9.5	10.5	46.0
10	Existing	9.8	10.8	10.4	8.4	9.4	41.2
10	Proposed	12.0	13.6	12.2	10.0	11.9	58.7

Table B1-2: Pedestrian Wind Conditions

Location	Configuration	Wind Comfort					Wind Safety
		GEM Speed Exceeded 20% of the Time (km/h)					Gust Speed Exceeded 0.1% of the Time (km/h)
		Annual	Winter	Spring	Summer	Autumn	
11	Existing	9.8	10.5	10.5	8.6	9.3	43.3
11	Proposed	13.2	13.9	14.2	12.1	12.8	51.6
12	Existing	11.6	12.5	12.5	10.2	11.0	51.7
12	Proposed	12.5	13.3	13.8	11.0	11.8	53.4
13	Existing	10.3	11.0	11.2	9.1	9.8	46.0
13	Proposed	15.2	15.6	17.8	13.4	13.7	84.1
14	Existing	10.3	11.2	11.2	9.1	9.9	44.0
14	Proposed	15.3	16.2	17.0	13.2	14.4	68.4
15	Existing	10.2	11.0	11.1	8.8	9.6	44.0
15	Proposed	12.4	14.1	12.6	10.4	12.1	59.1
16	Existing						
16	Proposed	18.8	20.7	19.6	16.3	18.0	80.8
17	Existing						
17	Proposed	20.6	21.7	23.1	17.9	19.4	105.1
18	Existing						
18	Proposed	18.5	19.8	20.3	16.5	17.2	87.7
19	Existing	9.5	10.5	10.0	8.3	9.1	42.2
19	Proposed	14.6	15.9	16.0	12.8	13.6	70.8
20	Existing	10.4	11.2	11.2	9.1	10.0	44.1
20	Proposed	11.6	12.5	12.8	10.0	10.9	50.1

Table B1-3: Pedestrian Wind Conditions

Location	Configuration	Wind Comfort					Wind Safety
		GEM Speed Exceeded 20% of the Time (km/h)					Gust Speed Exceeded 0.1% of the Time (km/h)
		Annual	Winter	Spring	Summer	Autumn	
21	Existing	10.3	11.4	10.8	8.9	9.9	45.1
21	Proposed	10.7	11.6	11.5	9.3	10.1	46.5
22	Existing	9.8	10.9	10.3	8.6	9.4	42.4
22	Proposed	9.8	10.8	10.3	8.6	9.4	42.2
23	Existing	11.6	12.4	12.5	10.0	11.1	47.1
23	Proposed	11.2	12.1	12.2	9.7	10.7	48.8
24	Existing	9.9	10.5	11.1	8.7	9.3	44.1
24	Proposed	10.6	11.4	11.8	9.2	10.0	47.5
25	Existing	10.4	11.0	11.6	9.1	10.0	51.3
25	Proposed	12.8	13.6	14.4	11.1	12.1	55.3
26	Existing	11.4	12.5	12.2	9.8	10.9	48.3
26	Proposed	16.2	17.2	18.1	14.2	15.1	74.1
27	Existing	11.6	12.9	12.2	9.9	11.2	49.2
27	Proposed	16.1	16.9	18.1	14.3	15.0	78.8
28	Existing	12.0	13.2	12.8	10.2	11.5	53.1
28	Proposed	13.5	14.4	15.1	11.7	12.5	58.0
29	Existing	12.8	14.3	13.4	11.0	12.3	57.5
29	Proposed	13.2	14.2	14.4	11.5	12.4	54.7
30	Existing	13.2	14.7	13.9	11.3	12.7	62.8
30	Proposed	13.3	14.4	14.3	11.5	12.6	55.7

Table B1-4: Pedestrian Wind Conditions

Location	Configuration	Wind Comfort					Wind Safety
		GEM Speed Exceeded 20% of the Time (km/h)					Gust Speed Exceeded 0.1% of the Time (km/h)
		Annual	Winter	Spring	Summer	Autumn	
31	Existing	13.0	14.4	13.7	11.1	12.5	56.9
31	Proposed	12.9	14.3	13.6	11.0	12.3	57.6
32	Existing	14.6	16.5	15.2	12.4	14.1	65.6
32	Proposed	14.3	16.1	14.9	12.2	13.8	65.0
33	Existing	13.0	14.5	13.6	11.2	12.5	60.8
33	Proposed	12.5	13.9	13.1	10.8	11.9	57.1
34	Existing	13.2	14.0	14.3	11.7	12.5	66.0
34	Proposed	12.8	13.6	13.6	11.4	12.2	59.7
35	Existing	10.9	11.8	11.6	9.5	10.4	47.7
35	Proposed	10.9	11.8	11.6	9.5	10.4	45.9
36	Existing	10.7	11.7	11.2	9.2	10.3	47.2
36	Proposed	10.8	11.9	11.4	9.4	10.5	47.4
37	Existing	11.8	13.1	12.2	10.3	11.5	54.0
37	Proposed	11.8	13.1	12.2	10.2	11.4	52.2
38	Existing	15.6	17.4	16.0	13.5	15.2	73.2
38	Proposed	15.8	17.9	16.1	13.6	15.5	73.8
39	Existing	13.7	14.5	14.9	12.3	12.9	69.9
39	Proposed	12.6	13.2	13.4	11.4	12.1	56.7
40	Existing	13.7	14.9	14.6	11.8	12.9	62.6
40	Proposed	12.1	13.1	13.1	10.6	11.5	50.4

Table B1-5: Pedestrian Wind Conditions

Location	Configuration	Wind Comfort					Wind Safety
		GEM Speed Exceeded 20% of the Time (km/h)					Gust Speed Exceeded 0.1% of the Time (km/h)
		Annual	Winter	Spring	Summer	Autumn	
41	Existing	10.2	11.4	10.5	9.1	10.1	48.8
41	Proposed	14.6	15.4	16.3	13.0	13.9	66.2
42	Existing	11.2	12.2	11.6	9.9	11.1	49.6
42	Proposed	16.7	17.6	18.0	14.9	16.0	64.7
43	Existing	11.2	11.8	12.4	9.8	10.4	53.4
43	Proposed	11.5	12.3	12.7	10.1	11.0	50.0
44	Existing	9.2	9.8	9.9	8.1	8.9	40.8
44	Proposed	9.4	10.1	10.0	8.2	9.2	51.2
45	Existing	9.7	10.5	10.3	8.5	9.4	40.1
45	Proposed	9.8	10.5	10.5	8.5	9.5	41.2
46	Existing	9.7	10.4	10.5	8.5	9.3	41.8
46	Proposed	9.6	10.2	10.3	8.3	9.2	39.8
47	Existing	12.2	13.5	12.7	10.5	11.6	62.3
47	Proposed	12.0	13.4	12.5	10.3	11.6	59.7
48	Existing	10.4	11.6	10.9	8.9	10.0	50.9
48	Proposed	10.7	12.0	11.0	9.2	10.4	50.1
49	Existing	10.7	11.3	11.4	9.7	10.3	44.0
49	Proposed	11.1	12.3	11.5	9.4	10.8	50.9
50	Existing	11.6	12.6	12.3	10.2	11.2	50.3
50	Proposed	15.9	17.1	16.8	14.2	15.4	75.0

Table B1-6: Pedestrian Wind Conditions

Location	Configuration	Wind Comfort					Wind Safety
		GEM Speed Exceeded 20% of the Time (km/h)					Gust Speed Exceeded 0.1% of the Time (km/h)
		Annual	Winter	Spring	Summer	Autumn	
51	Existing	9.6	10.6	9.7	8.5	9.4	43.8
51	Proposed	13.1	14.4	13.7	11.6	12.8	56.6
52	Existing	15.9	17.4	16.7	13.9	15.3	47.3
52	Proposed	15.8	17.2	16.8	13.8	15.2	52.3
53	Existing	10.1	10.9	10.7	8.8	9.7	43.6
53	Proposed	9.8	10.9	10.2	8.5	9.3	46.1
54	Existing	10.6	11.4	11.6	9.2	10.0	47.5
54	Proposed	10.1	10.9	11.0	8.7	9.5	44.1
55	Existing	9.7	10.2	10.6	8.4	9.2	41.6
55	Proposed	9.4	10.0	10.3	8.2	8.9	40.3
56	Existing	10.8	12.1	11.0	9.3	10.5	50.9
56	Proposed	10.6	12.1	10.8	9.1	10.2	52.4
57	Existing	9.5	10.5	9.7	8.3	9.2	43.6
57	Proposed	9.3	10.6	9.5	8.1	8.9	44.1
58	Existing	10.2	11.0	11.0	8.8	9.7	50.2
58	Proposed	10.5	11.7	11.1	9.0	10.0	48.7
59	Existing	9.9	10.8	10.4	8.4	9.5	39.9
59	Proposed	9.3	9.9	10.0	8.1	8.8	40.6
60	Existing	10.2	11.1	10.9	8.8	9.8	46.2
60	Proposed	9.8	10.3	10.7	8.8	9.2	45.1

Table B1-7: Pedestrian Wind Conditions

Location	Configuration	Wind Comfort					Wind Safety
		GEM Speed Exceeded 20% of the Time (km/h)					Gust Speed Exceeded 0.1% of the Time (km/h)
		Annual	Winter	Spring	Summer	Autumn	
61	Existing	10.7	11.6	11.4	9.3	10.3	42.6
61	Proposed	9.9	10.6	10.8	8.7	9.5	40.0
62	Existing	9.7	10.3	10.7	8.5	9.1	41.9
62	Proposed	9.7	10.3	10.7	8.5	9.1	41.4
63	Existing	10.7	11.5	11.6	9.4	10.1	46.1
63	Proposed	10.4	11.2	11.3	9.1	9.8	44.3
64	Existing	9.7	10.1	10.8	8.6	9.0	48.4
64	Proposed	9.3	9.7	10.5	8.3	8.6	47.0
65	Existing	10.5	11.5	11.1	9.1	10.1	51.6
65	Proposed	10.2	11.3	10.9	9.0	9.8	52.3
66	Existing	10.2	11.3	10.9	9.0	9.8	50.4
66	Proposed	10.2	11.2	10.8	8.9	9.7	49.0
67	Existing	11.9	13.1	12.6	10.3	11.3	56.7
67	Proposed	11.5	12.7	12.3	10.0	10.9	56.5
68	Existing	9.7	10.5	10.4	8.4	9.2	42.0
68	Proposed	9.2	9.9	10.0	8.0	8.7	41.0
69	Existing	11.3	12.3	12.3	9.9	10.7	57.6
69	Proposed	11.3	12.1	12.4	9.9	10.6	56.8
70	Existing	9.8	10.7	10.4	8.6	9.4	45.3
70	Proposed	9.9	10.7	10.5	8.7	9.5	47.5

Table B1-8: Pedestrian Wind Conditions

Location	Configuration	Wind Comfort					Wind Safety
		GEM Speed Exceeded 20% of the Time (km/h)					Gust Speed Exceeded 0.1% of the Time (km/h)
		Annual	Winter	Spring	Summer	Autumn	
71	Existing	9.8	10.7	10.4	8.6	9.4	45.1
71	Proposed	10.0	10.9	10.6	8.7	9.6	46.6
72	Existing	10.3	11.3	11.1	9.1	9.8	52.0
72	Proposed	10.4	11.4	11.2	9.1	9.8	53.4
73	Existing	12.8	13.7	14.1	11.2	12.0	51.3
73	Proposed	12.4	13.2	13.7	10.8	11.7	51.6
74	Existing	8.8	9.2	9.6	8.0	8.4	38.0
74	Proposed	8.8	9.3	9.7	8.1	8.5	39.0
75	Existing	9.6	10.2	10.4	8.5	8.9	44.2
75	Proposed	9.8	10.5	10.8	8.7	9.2	46.0
76	Existing	9.6	10.1	10.7	8.5	9.0	44.8
76	Proposed	9.9	10.4	11.1	8.8	9.3	49.7
77	Existing	10.0	10.7	11.0	8.7	9.5	43.0
77	Proposed	10.3	11.0	11.4	9.1	9.8	49.7
78	Existing	11.7	12.6	13.0	10.2	10.9	59.8
78	Proposed	11.6	12.5	13.0	10.3	10.8	59.6
79	Existing	9.9	10.7	10.9	8.6	9.3	44.5
79	Proposed	10.1	11.0	10.8	8.7	9.6	48.5
80	Existing	11.5	12.5	12.4	10.0	10.9	50.9
80	Proposed	11.8	13.0	12.6	10.3	11.3	61.7

Table B1-9: Pedestrian Wind Conditions

Location	Configuration	Wind Comfort					Wind Safety
		GEM Speed Exceeded 20% of the Time (km/h)					Gust Speed Exceeded 0.1% of the Time (km/h)
		Annual	Winter	Spring	Summer	Autumn	
81	Existing	10.2	11.3	10.8	8.8	9.8	45.6
81	Proposed	14.3	15.1	16.3	12.5	13.2	76.0
82	Existing	10.1	11.0	10.7	8.8	9.7	46.1
82	Proposed	11.9	12.8	13.1	10.4	11.4	48.1
83	Existing	11.1	12.1	11.6	9.7	10.6	48.9
83	Proposed	10.8	11.8	11.5	9.3	10.3	42.7
84	Existing	10.8	11.8	11.4	9.4	10.3	48.1
84	Proposed	9.9	10.9	10.4	8.5	9.5	39.9
85	Existing	11.1	12.2	11.7	9.7	10.7	46.6
85	Proposed	10.2	11.4	10.6	8.8	9.9	42.2
86	Existing	11.5	12.4	12.3	10.2	11.0	48.5
86	Proposed	10.8	11.7	11.5	9.7	10.3	43.4
87	Existing	9.8	10.4	10.5	8.6	9.3	38.4
87	Proposed	9.4	10.0	10.2	8.4	8.9	37.0
88	Existing	10.5	11.2	11.6	9.2	9.9	43.7
88	Proposed	9.8	10.6	10.7	8.5	9.3	38.4
89	Existing	10.1	10.8	11.0	8.8	9.6	42.2
89	Proposed	10.0	10.9	11.0	8.6	9.6	39.4
90	Existing	9.4	10.0	10.2	8.4	8.8	40.8
90	Proposed	10.7	11.3	12.2	9.3	10.0	46.6