Appendix C of PL-08-20

Burlington Wind and Shadow Study

Public Engagement Workshops

February 2019

BrookMcIlroy/

Contents

Introduction

On November 21st, two Public Engagement Workshops (the Workshop) were conducted as part of the Burlington Wind and Shadow Study (the Study). Session One was located at the Central Recreation Centre between 12:00 pm and 2:00 pm. Session Two was located at the Art Gallery of Burlington between 6:00 pm and 8:00 pm.

The session was attended by City of Burlington Staff and members of the consultant team from Brook McIlroy Inc. A total of 11 participants signed into the workshops.

Purpose of Public Consultation

The purpose of the Public Engagement Workshop is to inform participants about the Study's purpose, process, and expected outcomes. Participants were presented with materials to provide a basic understanding of the purpose, principles, methods, and components of both a Pedestrian Level Wind Study and a Sun/Shadow Study. Participants were also able to provide feedback on the draft materials and ideas presented.

Presentation from Brook McIlroy Team

Agenda

The agenda for both Public Engagement Workshops was the same and included the following:

- Open House;
- Presentation; and
- Workshop.

Open House

The Open House portion of the session was conducted within the first 30 minutes of the Workshop. The Open House allowed the session participants to review six boards. The boards provided information on:

- Background information on the Study including what the Study is and how it will be applied;
- Information on Pedestrian-Level Wind Studies;
- Information on Sun and Shadow Studies; and
- A board which included an area for written comments, and information such as the project webpage and contact info. No comments were provided.

In addition to the Open House Boards, participants were encouraged to sign in at the entrance. Participants were also provided with a two page handout which asked four questions. Questions on the handouts included:

1. Tell us your thoughts and suggestions on our approach and ideas pertaining to Sun/ Shadow Studies;
2. Tell us your thoughts and suggestions on our approach and ideas pertaining to Wind Studies;
3. Tell us about some specific geographic locations that should have special considerations for sun and shadow impacts. Where are they, and what makes them special?
4. Do you have any additional comments or questions about this workshop or the study? Let us know!

A summary of the worksheets is provided page 8.

Presentation

The Presentation was conducted for approximately 45 minutes. Conducted by the Consultant Team, the presentation included the following topics:

- Introduction: An introduction of the purpose of the study; the outcome of the study; and the purpose of the public engagement
- Sun and Shadow Studies: An introduction to sun and shadow studies; an animated demonstration of how a shadow diagram are created; the output of a shadow study; and potential evaluation criteria and evaluation criteria locations
- Pedestrian-Level Wind Studies: An introduction to Pedestrian-Level Wind Studies (PLWS); an example of Wind Comfort and Wind Safety Categories; test methodologies; potential inputs and outputs; PLWS evaluation criteria; sensor planning; and mitigation strategies.

Workshop

The third part of the sessions was the workshop. The workshop was approximately 45 minutes. Conducted by the Consultant Team, the participants were divided into table groups depending on the number of attendees. The afternoon session included approximately nine individuals. As such, two tables were formed. The evening session included approximately two individuals, and only one table was required.

Participants were provided with two large format worksheets with aerial photographs of key areas which are anticipated to intensify. Key areas included:

1. Downtown Centre;
2. Aldershot Mobility Hub;
3. Burlington GO Mobility Hub;
4. Appleby Mobility Hub;
5. Plains Road East Corridor;
6. Appleby Line Corridor; and
7. Fairview Street Corridor.

Participants were asked to provide their input and feedback for areas or sites which required additional consideration for shadow and wind impacts. Coloured dots and post-it notes were provided to note where additional consideration was required. Images of all coloured dots and post-it notes comments are included in Appendix A.

Downtown Centre

A summary of the comments related to the Downtown Centre includes the following:

- Comments relating to Sun and Wind:
  - New development sites in the Downtown
  - Proposed development sites in the Downtown
  - Transportation Corridors
  - Areas where people walk and bike
  - Brant Street
- Comments relating to Wind only:
  - One participant suggested an evaluation of how wind effects snow drifts.
  - Undesirable wind conditions were noted at Eglin Street and Maple Avenue, and Eglin Street and Locus Street.

Aldershot Mobility Hub

No comments were provided

Burlington GO Mobility Hub

No comments were provided

Appleby Mobility Hub

No comments were provided

Plains Road East Corridor

No comments were provided

Appleby Line Corridor

A summary of the comments related to the Appleby Corridor includes the following:

- Comments relating to Sun and Wind:
  - Many concerns and comments relating to the proposed development at Appleby Mall - 5111 New St. These included comments on the lack of setbacks and step backs which cause shading and poor wind conditions for the adjacent low-rise residential context.
  - Concern relating to sun and wind impacts from Lakeside Plaza

Fairview Street Corridor

No comments were provided

Summarized general comments from the Workshop

- Comments Relating to Sun and Wind
  - Based on zoning, any areas where outside seating can be placed should have wind and shade minimized
  - Confirm the accuracy of studies after a development is completed
- Comments Relating to Wind
  - The acceptability criterion for high winds should be an exceedance criterion. The impact of a building on wind cannot cause the exceedance level to be exceeded.
  - Wind off the lake in the spring and fall are affected by water temperatures that affect comfort up to 750 metres from the lake
  - Stipulate in the guidelines which type of wind analysis must be done for which type of development
  - The need for more accurate wind data is required
- Comments Relating to Sun
  - Concern over increased energy use from shading
  - Concern over sun access during winter season
  - Concern over sidewalk ice if sun does not hit sidewalks
  - Suggestion to include guidelines to allow for a maximum number of hours where shade can occur
  - Request feedback from those affected by new shadows
  - Shadow studies should be overlaid onto the existing community

Worksheets

A total of two worksheets were collected from the Public Engagement Workshops. The following is a high-level summary of key findings:

Question 1:

- Sun and Shadow Study's should occur on December 21st.
- Additional evaluations should go beyond the proposed dates.
- Shadow impacts must be evaluated for Stable Residential Areas, especially if adjacent to identified growth areas.

Question 2:

- How will impacts influence residential areas, especially when adjacent to identified growth areas.

Question 3:

- Residential areas adjacent to identified growth areas as identified in Schedule B-1 of the Official Plan.
- One participant suggested that a minimum of five hours of sunlight be utilized as a metric for equinoxes.
- Stronger protections from shadowing for residential areas was suggested.

No comments were included for Question 4.

Additonal comments

Participants were encouraged to submit additional feedback by email to the City of Burlington. One email was received by the City. The following is a summary of the email.

Regarding Wind:

- If an application caused uncomfortable wind conditions, then the applicant should compensate the existing structures for wind mediation to the satisfaction of the standards set by the City.
- City streetscape may require additional wind mitigation measures to protect pedestrians, especially in areas near the lake

Regarding Shadows:

- A minimum of 5 hours of sunlight on the spring and fall equinox and summer solstice should be established on locations including:
- Building faces associated with residential buildings;
- Stable residential neighbourhoods;
- Parks (especially those with desired tree canopies, gardens, and/or sports fields);
- School primary playground spaces and the school building faces associated with entrances and/or classrooms.
- Designated vehicular transit corridors
- Ensure shadow impact does not negatively influence tree growth

Additional comments

- Additional comments related to the street network within the Burlington Downtown area. These comments did not relate to the Burlington Wind and Sun Study.

Online Public Feedback

Two types of online resources were used to reach the public and receive feedback on the Wind and Shadow Study. These resources were available to the public between November 13, 2019 and January 13, 2020. The Engagement Tools included:

1. Map: Share Your Local Experiences and Ideas
2. Survey: Shadow and Wind Study Questionnaire

Map

The Map Engagement Tool asked participants to "Share Your Local Experiences and Ideas" by placing pins onto the online map or sharing comments. Of the 114 visitors to the online tool, 4 contributed to a placement of 8 pins with corresponding comments.

Comments were divided into 2 Categories:
- Wind (Area that requires special consideration)
- Shadow (Area that requires special consideration)

Although 7 of 8 comments were selected for Wind category, 3 comments overall reflected concerns for Shadows as well. The pinned addresses and corresponding comments are as follows:

"Wind tunnel" (Category: Wind)
- 551 Maple Avenue, Burlington ON L7S 1M6
- 505 Locust Street, Burlington ON L7S 1V2
- 2025 Maria Street, Burlington ON L7R 2M3

"Future major wind tunnel and shadowing" (Category: Wind)
- 2002 James Street, Burlington ON L7R 2G2
- 411 Brant Street, Burlington ON L7R 2G2 ("severe shadowing")

"Very windy here due to high buildings and hydro fields, the city should consider this when planning on building more high rises in the area." (Category: Wind)
- 490 Nelson Avenue, Burlington ON L7S 1E9

"Lakeshore new tall builds are contributing to a wind tunnel effect. Same as Pine St between Lakeshore and Pine." (Category: Wind)
- 2069 Lakeshore Road, Burlington ON L7R 1E1

"The proposed 5 story development at this location will have a terrible shadow impact" (Category: Shadow)
- 1600 Kerns Road, Burlington ON L7P 4V7

Survey

The Survey Engagement Tool had 12 visitors and 2 participants. Participants were asked:

1. Please tell us your thoughts on our approach pertaining to Sun and Shadow studies.
2. Please tell us your thoughts on our approach pertaining to Wind Studies.
3. Do you have any additional comments about the studies?

Responses to Question 1 generally reflected positive feedback for the presentation of information, that it was logical and comprehensible for the complexity of the topic. One participant recommended that for proposed and developing mid-rise or tall towers, a minimum of 5 hours of sunlight for surrounding residential buildings and neighbourhoods be required. One participant expressed concern for sunlight reflections posing risks to drivers – suggesting some shadowing may be beneficial for road users.

Responses to Question 2 described the topic as "complex". One participant did not like the approach to mitigating wind through screening options, while the other restated the recommendation for a minimum of 5 hours of sunlight exposure.

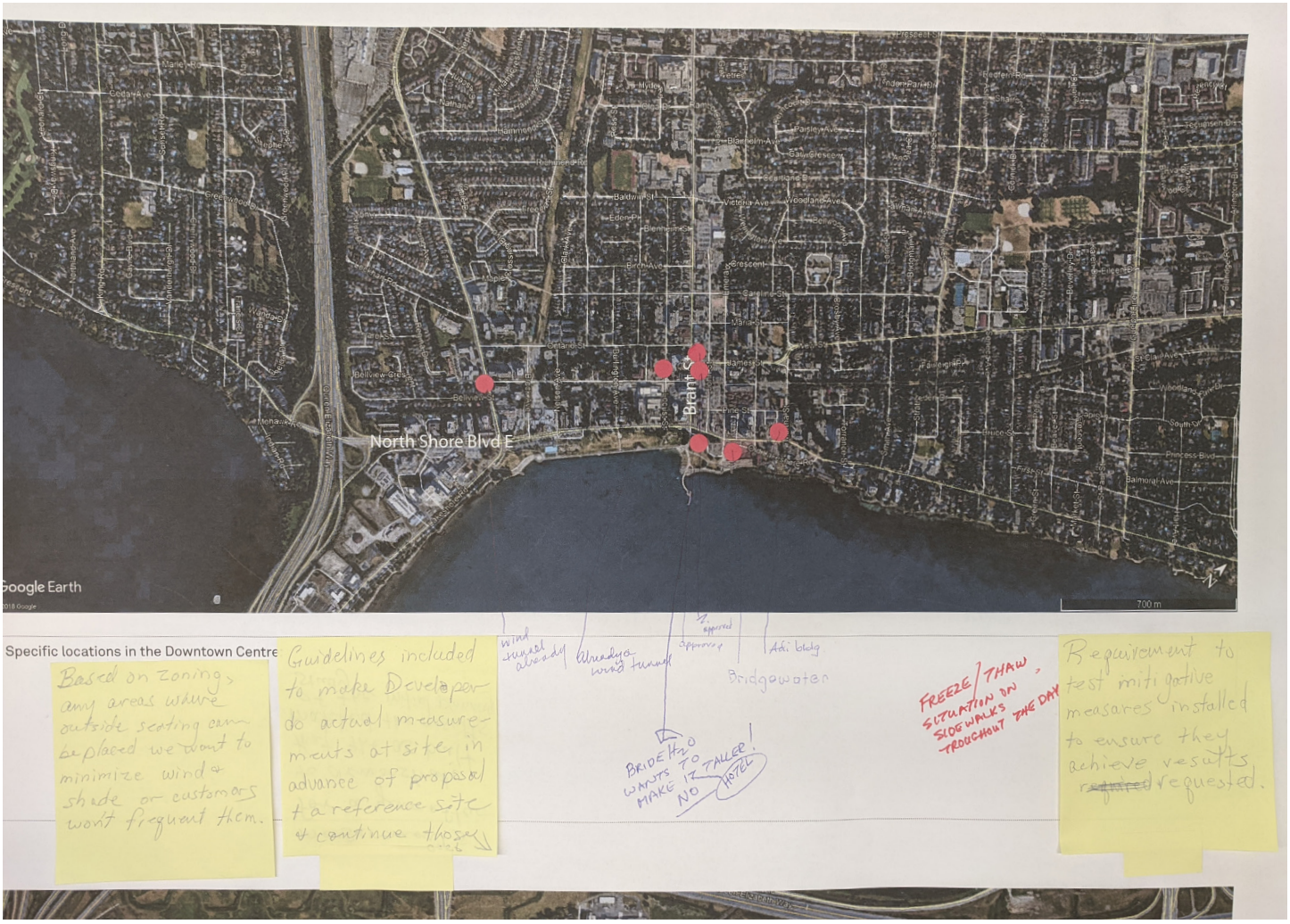
Responses to Question 3 were varied. One reflected on the uncertainties that climate change poses, potentially creating more extreme conditions and bigger wind issues in the future. Bordering residential neighbourhoods, parks and transit corridors were highlighted as areas of concern for the Study. Attention was drawn to protection of building entrances from wind conditions and the need for retrofits to existing buildings. Additionally, a respondent asked for shadow and wind impacts on existing trees to be considered.

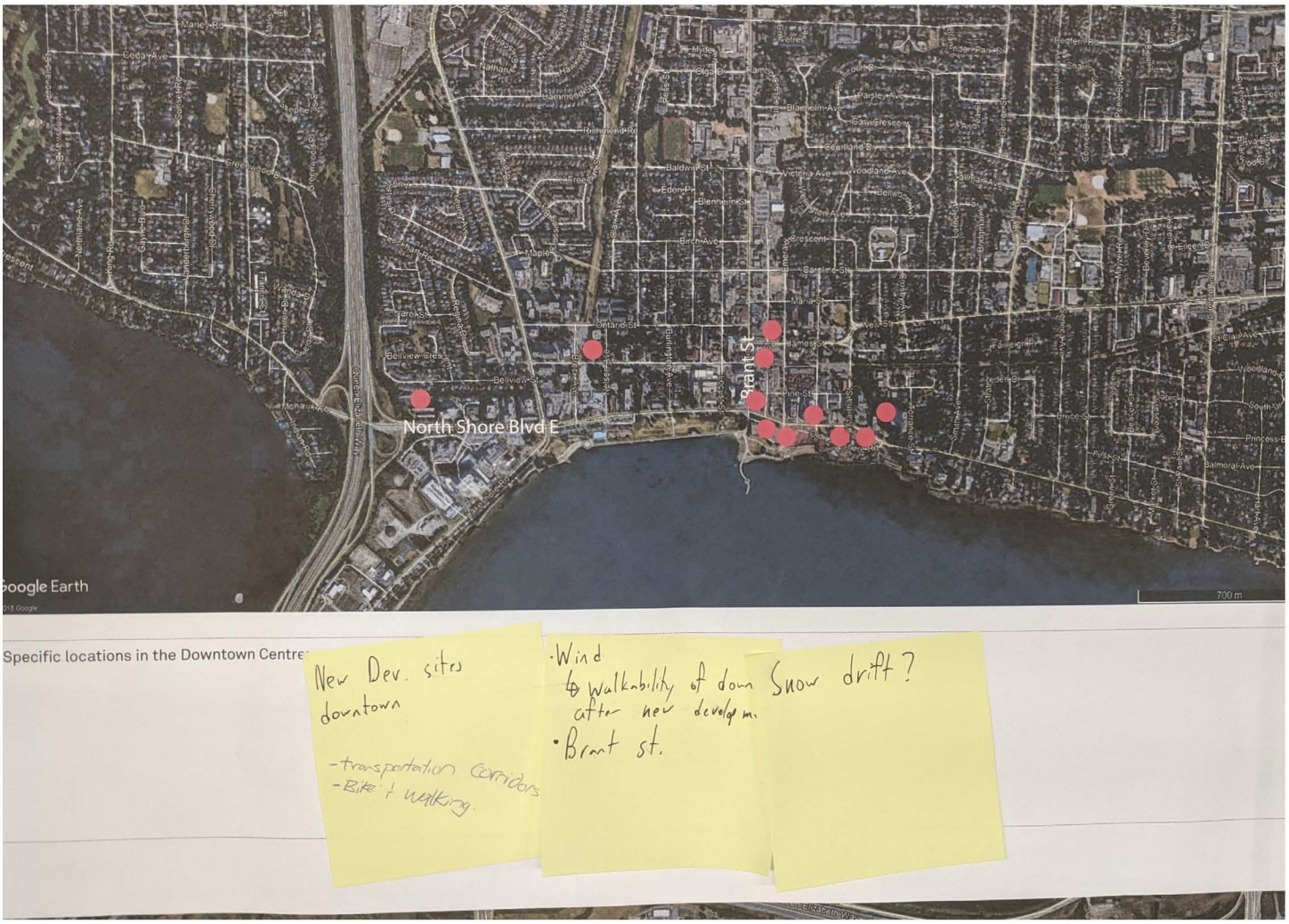
Next Steps

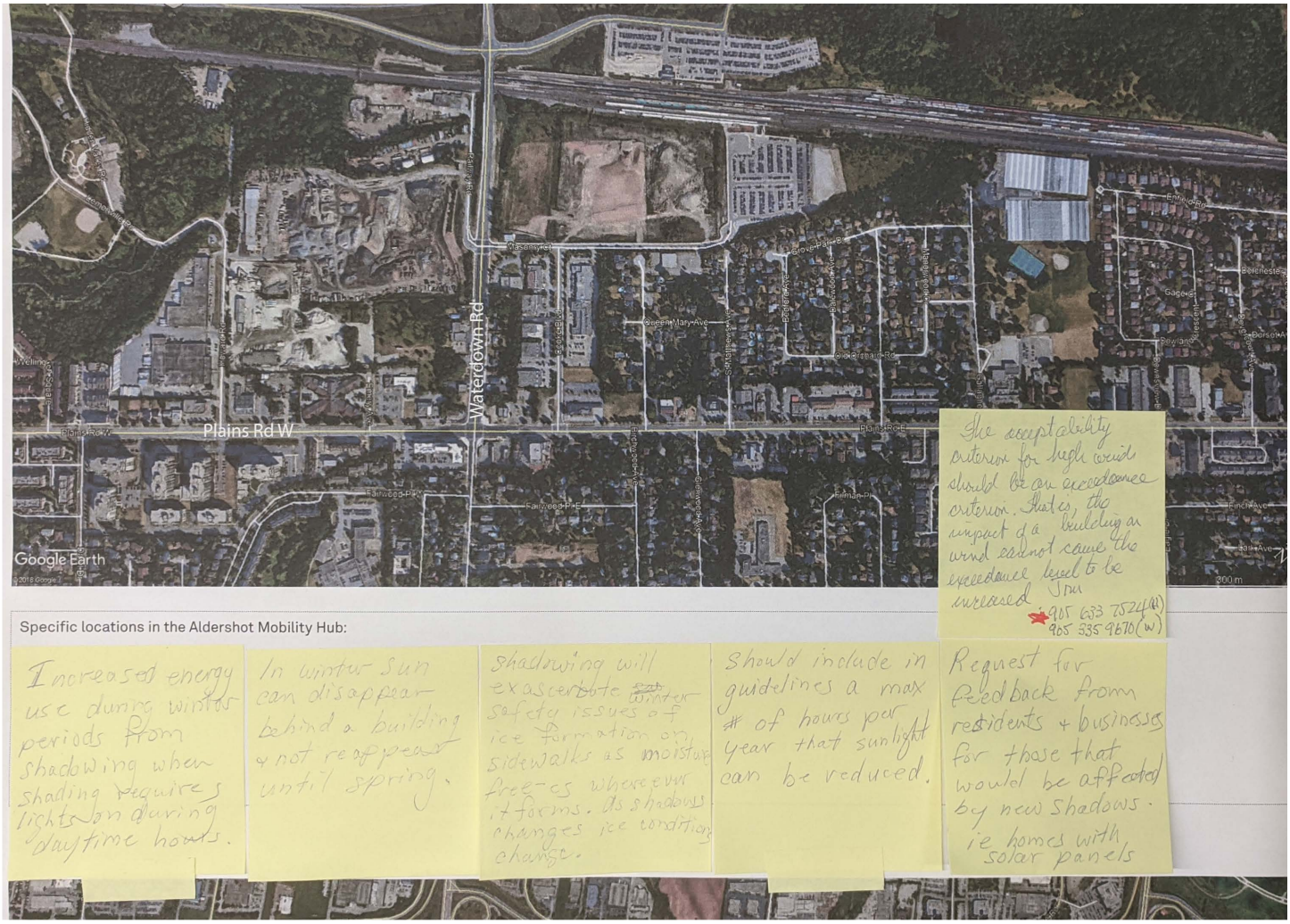
The next phase of the Burlington Wind and Shadow Study include:

- The development and refinement of the Wind and Shadow Guideline Documents;
- The development and refinement of the Terms of Reference;
- A review of Official Plan Policy and Design Guidelines; and
- A presentation to Council.

Appendix A


North Shore Blvd E
Bridgewater
Specific locations in the Downtown Centre
Based on zonings any areas where outside seating can be placed we want to minimize wind & shade or customers won't frequent them.
Guidelines included to make Developer do actual measurements at site in advance of proposal & reference site & continue those
Requirement to test mitigative measures installed to ensure they achieve results requested.
FREEZE / THAW SITUATION ON SIDEWALKS TROUGHOUT THE DAY
BRIDGE TO WANTS TO MAKE IT TALLER! NO HOTEL


North Shore Blvd E
Grant St
Google Earth
700 m
Specific locations in the Downtown Centre
New Dev. sites downtown
- transportation corridors
- Bike + walking
· Wind
↳ Walkability of dow after new develop
· Brant st.
Snow drift?



The acceptability criterion for high wind should be an exceedance criterion. That is, the impact of a building on wind cannot cause the exceedance level to be increased. Jan
905 633 7524(H)
905 335 9670(W)

Specific locations in the Aldershot Mobility Hub:

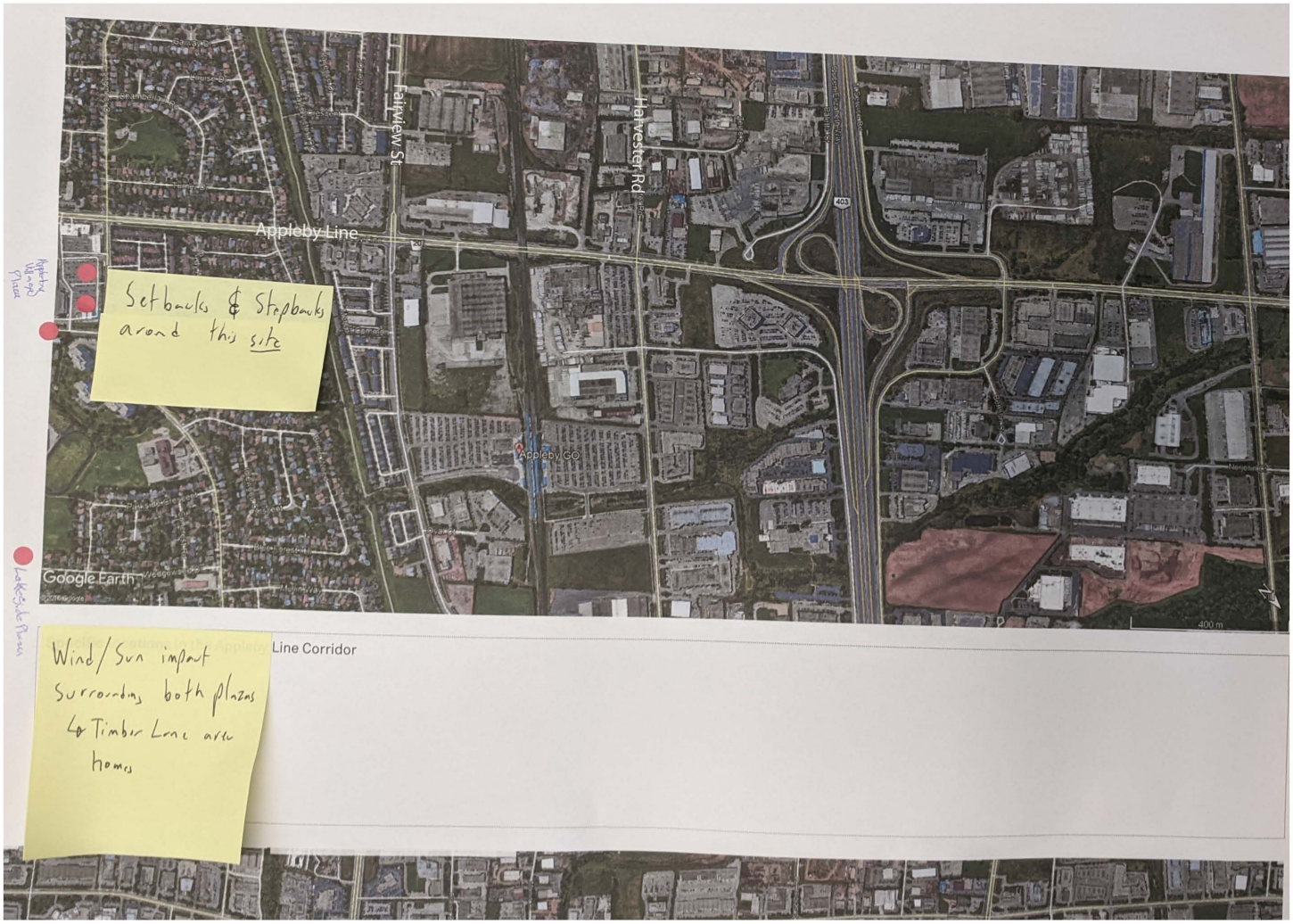
Increased energy use during winter periods from shadowing when shading requires lights on during daytime hours.

In winter sun can disappear behind a building & not reappear until spring.

Shadowing will exascerbate ~~winter~~ safety issues of ice formation on sidewalks as moisture free-es wherever it forms. As shadows changes ice conditions change.

Should include in guidelines a max # of hours per year that sunlight can be reduced.

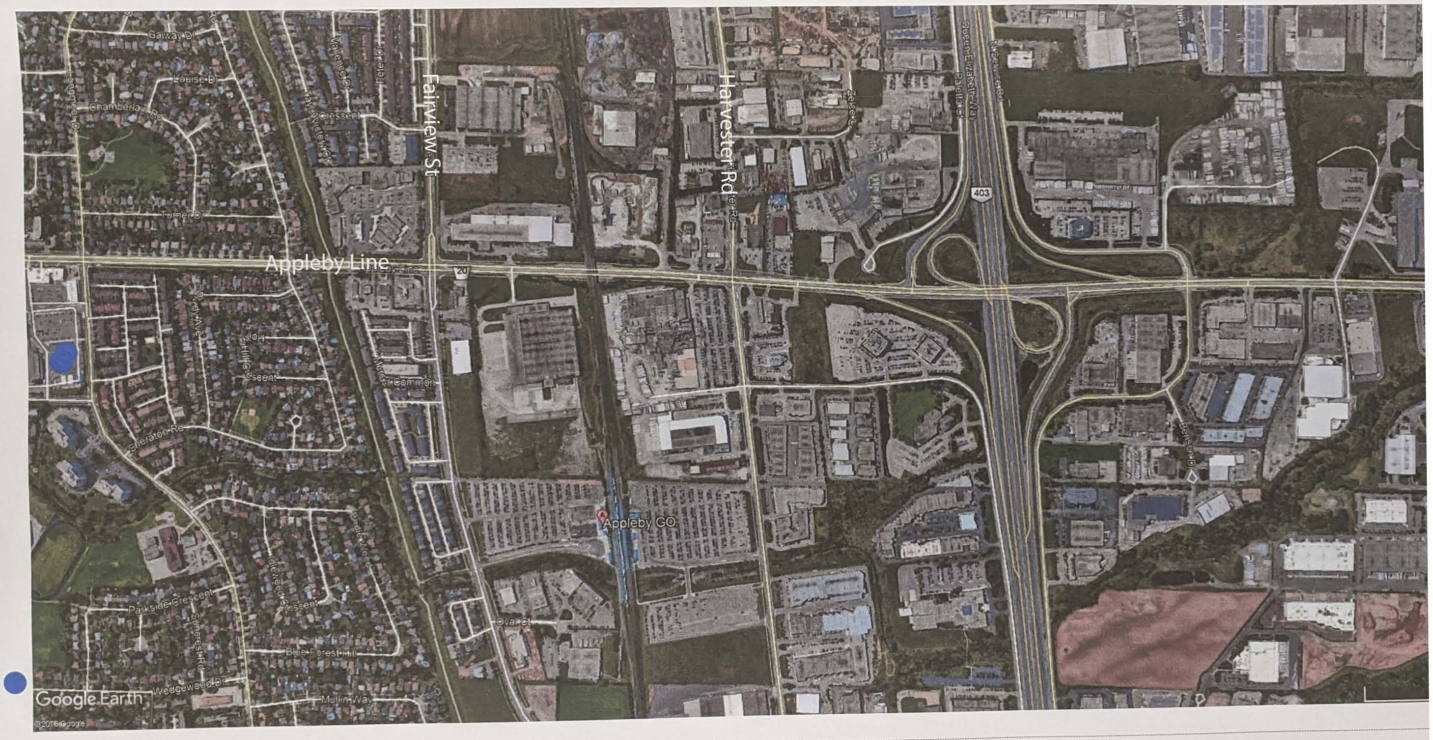
Request for feedback from residents + business for those that would be affected by new shadows. ie homes with solar panels


Fairview St
Harvester Rd
Appleby Line
403
Appleby GO
Google Earth
400 m
Setbacks & Stepbacks around this site
Line Corridor
Wind/Sun impact surrounding both plazas & Timber Lane area homes

Specific locations in the Appleby Line Corridor

Specific locations in the Appleby Line Corridor

Specific locations in the Appleby Line Corridor



Specific locations in the Appleby Line Corridor