



**SUBJECT: Shadow and Wind Studies**

**TO: Community Planning, Regulation & Mobility Cttee.**

**FROM: Community Planning Department**

Report Number: PL-08-20

Wards Affected: all

File Numbers: 502-02

Date to Committee: June 9, 2020

Date to Council: June 22, 2020

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**Recommendation:**

Approve, in principle, the Shadow Study Guidelines and Terms of Reference attached as Appendix A to community planning report PL-08-20; and

Approve, in principle, the Pedestrian Level Wind Study Guidelines and Terms of Reference attached as Appendix B to community planning report PL-08-20; and

Direct the Director of Community Planning to prepare the necessary by-laws to amend the current Official Plan and adopted Official Plan through a future housekeeping amendment and/or modification, respectively, substantially in accordance with the recommendations attached in Appendix E to community planning report PL-08-20.

**PURPOSE:**

- To present Council with:
  - the findings of the Shadow and Wind Studies; together with,
  - the recommended Shadow Study and Pedestrian Level Wind Study Guidelines and Terms of References for approval in principle.

**Vision to Focus Alignment:**

- Increase economic prosperity and community responsive city growth
- Improve integrated city mobility
- Support sustainable infrastructure and a resilient environment
- Building more citizen engagement, community health and culture

- Deliver customer centric services with a focus on efficiency and technology transformation
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## **Background and Discussion:**

### **1.0 Background**

In January of 2019, a Council Information Package (CIP) memo was prepared by staff responding to a motion from Council regarding a, April 2018 delegation related to concerns about shadow and wind impacts caused by new development related to the adopted Official Plan. The memo concluded with a confirmation that the 2019 departmental workplan included a review of the policy structure and development review procedures as they relate to shadow and wind studies.

In fall 2019, staff prepared a project terms of reference outlining the scope of work required to develop a set of criteria, policies, and guidelines to be used for consistently evaluating the shadow and wind impacts of new development in Burlington. This work is herein referred to as the “Studies”.

The intent and purpose of the Studies was:

- To review the best approaches for the City to assess the expected impacts of new development on sun and wind;
- To identify gaps in the current (in-force and effect) and adopted Official Plan policies as well as applicable Council approved Design Guidelines;
- Make recommendations on policies and guidelines that can assist staff and reinforce the City’s position regarding acceptable shadow and wind impacts; and
- Develop guideline and terms of reference documents for shadow and wind studies to ensure consistent application and implementation of shadow and wind evaluation criteria and standards.

### **2.0 Discussion**

As the City grows, Burlington will continue to receive applications for development at a variety of scales. While this growth and development puts additional pressure on the public realm, it is important to ensure that new developments are well-designed to address several key built form challenges including maintaining access to sunlight and mitigating pedestrian-level winds in the public realm and other private spaces.

Shadow and Wind Studies help to demonstrate the potential impacts of a proposed development on its surrounding context. By analyzing existing and proposed conditions together, both incremental and cumulative impacts can be evaluated.

The goal of the Studies is to ensure pedestrian comfort, safety, and the enjoyment of public and private spaces is maintained as the City continues to grow and develop. To achieve this, the development of guidelines and terms of reference documents strive to:

- provide clear directions and expectations for the design of new buildings across the city;
- clarify the datasets and assumptions for the modelling;
- provide enough detail to ensure consistent information is provided through all applicable application submissions; and
- establish sun/shadow and wind criteria targets for evaluation to assist in development review and the decision-making process.

### **3.0 The Study**

The City retained Brook McIlroy Inc. (BMI) in the fall of 2019 to assist with the Shadow and Wind Studies.

The study was comprised of three phases:

Phase 1: Background Study and Draft Recommendations

Phase 2: Public Engagement

Phase 3: Final Shadow and Wind Guideline Documents

Phase 1 of the study included a review of best practice approaches to shadow and wind studies and draft recommendations on evaluation criteria for assessing anticipated shadow and wind impacts.

Phase 2 involved hosting two public engagement events and an online survey. Details can be found in the Engagement Matters section of this report.

Phase 3 culminated in the preparation of study guidelines and terms of reference documents by BMI (see Appendices A and B) that synthesized the findings of the best practices review, public and other stakeholder feedback, and modelling. Additionally, the Studies have resulted in policy and guideline recommendations that are described in Section 5.0 of this report.

#### **3.1 Summary of feedback**

Based on feedback gathered from the consultation phase, members of the public have told us:

- The Downtown Centre and sites within proximity of the Appleby Line Corridor require additional consideration for shadow and wind impacts;
- Stronger protections from shadowing for residential areas is desired;
- Bordering parks and transit corridors were highlighted as areas of concern for the Study; and

- Attention was drawn to protection of building entrances from wind conditions.

Feedback received through the open houses and the online engagement site was generally positive and reaffirmed the approaches outlined at the workshops related to managing potential impacts to established neighbourhoods and private residential outdoor spaces, the public realm including sidewalks, parks and open spaces to protect pedestrian comfort and safety, and design considerations that allows for sunlight, sky views, and privacy.

Prior to completion of the consultation period, staff have received written submissions from 5 members of the public and stakeholders. A summary of this feedback and the consultant's response is included as Appendix D to this report.

All feedback received to date has informed further revisions and refinements to the documents presented for approval, attached to this report as Appendices A and B. If approved, the study guidelines and terms of references will be implemented immediately as a tool to assist staff in the review of development applications as part of the approval process.

#### **4.0 Role in the planning approvals process**

The City may require the submission of several information items with an application as part of the development application review and approval process.

A pre-application consultation meeting will determine the requirement for, and scope of, any plans, reports, and studies that must be provided with an initial submission to consider an application complete.

The Shadow Study and Pedestrian Level Wind Study Guidelines and Terms of References will act as technical reference materials designed for property owners, developers, builders and others interested in obtaining approvals for developing property in the City of Burlington. These documents outline when a study is required, who can conduct it, appropriate study methodologies, and contain guidelines, evaluation criteria and terms of reference for preparing and submitting materials as part of a complete development application.

A Shadow and/or Pedestrian Level Wind Study can be requested to accompany any one of the following applications:

- Official Plan Amendment
- Zoning By-law Amendment
- Site Plan Approval
- Draft Plan of Subdivision
- Committee of Adjustment (Minor Variance)

These documents should be treated as a tool to help designers and staff assess the technical aspects of a proposal related to potential shadow and wind impacts. It is not the intent of the guidelines to prevent development where a criterion is not, or cannot be met, but rather highlight where designers and decision-makers such as Council should have regard for the guidelines by evaluating their intents and potential impact. Ultimately, the submission of these studies will be required, among other supporting materials, to inform staff recommendations and Council decisions.

#### **4.1 Transitional Matters**

These documents will apply to all applicable development applications made on or after the date of Council approval. They may also be used to inform any required updates or revision to existing development applications at the discretion of City staff.

It should also be noted that as technical reference documents, which forms a part of the development approvals process, they are subject to change over time without further Council approval. Therefore, staff are seeking approval in principle by Council.

#### **5.0 Other Study Recommendations**

As part of the Studies BMI has also recommended updating policies of the Official Plan and Design Guidelines to ensure regard to the shadow and wind impacts and new study guidelines and terms of references are included. In general, the changes include additional policy language that directs the reader to review the respective guidelines and terms of references for compliance therewith. Similarly, it is recommended that recently Council approved Design Guidelines for tall and mid-rise buildings be amended to ensure consistency across all municipal documents. A detailed table with the proposed amendments is attached as Appendix E.

Notwithstanding the above, staff is of the opinion that the current Official Plan provides sufficient policy language to implement the proposed terms of reference. And while the proposed amendments would strengthen the intent of these policies, staff is not recommending an Official Plan Amendment at this time but rather propose the amendments be brought forward when the opportunity arises either by way of a future housekeeping amendment and/or modification to the current and adopted Official Plan. Design Guidelines on the other hand can be changed at any time without consultation or further Council approval, should Council approve the report recommendations.

## **Financial Matters:**

### **Source of Funding**

The Studies have been executed through funding of approximately \$35,000 from the Community Planning Department (Design and Development Review) account for Professional and Consulting Services was approved as part of the 2019 Operating Budget. No further funding is required.

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## **Climate Implications**

Sun access/shadows and wind are micro-climate issues. The Studies' main objective are to ensure pedestrian comfort and safety are maintained as Burlington continues to grow and develop. The studies' guidelines and terms of references support criteria that influence how the physical environment is shaped through consideration of potential impacts on local micro-climates and adjacent land uses. When necessary, appropriate mitigation strategies will be required to maintain and enhance the public and private realms to enhance the pedestrian experience. The consideration of these micro-climatic issues promotes walkable neighbourhoods so that people rely less on private automobiles; supporting the City's objectives to reduce its environmental footprint, encourage healthy and active lifestyles and increase quality of life.

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## **Engagement Matters:**

The formal consultation period for the Studies began in November 2019. Public and stakeholder consultation and engagement included the following:

- i. Public Engagement Workshops
  - Two public workshops were held on November 21st, 2019. Session One was located at the Central Recreation Centre between 12:00pm and 2:00pm. Session Two was located at the Art Gallery of Burlington between 6:00pm and 8:00pm. A total of 11 participants signed into the workshops.
- ii. Worksheets
  - Workshop participants were provided with two large format worksheets with aerial photographs of key areas which are anticipated to intensify. A total of two worksheets were collected from the Public Engagement Workshops.

iii. 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 on the City's Get Involved Burlington online engagement site. The Engagement Tools included:
  - Map: Share Your Local Experiences and Ideas; and
  - Survey: Shadow and Wind Study Questionnaire.

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. The Survey Engagement Tool had 12 visitors and 2 participants.

A summary of the feedback received from the above noted public engagement events and online forms is attached as Appendix C.

iv. Developer Information Package

- A Developer Information Package was prepared by BMI looking for feedback from the development community on the study's preliminary directions regarding submission requirements and guidelines/standards for sun and shadow and pedestrian-level wind studies.

## **Conclusion:**

The findings of the studies provide the City with a best practices approach to establish study guidelines and terms of reference including criteria and standards for which development applications can be evaluated. These documents are needed to help manage intensification pressures, and to implement the City's Official Plan policies for a desired built environment. This report recommends approval of the Shadow and Pedestrian Level Wind Study Guidelines and Terms of References and seeks Council direction to go ahead and amend / revise the supporting policy and Design Guidelines as recommended.

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Respectfully submitted,

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Urban Designer

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## **Appendices:**

- A. Shadow Study Guidelines and Terms of Reference prepared by Brook McIlroy Inc.
- B. Pedestrian Level Wind Study Guidelines and Terms of Reference prepared by Brook McIlroy Inc.
- C. Public Engagement Summary prepared by Brook McIlroy Inc.
- D. Response Table to Written Submissions November 2019 to January 2020
- E. Overview of Proposed Policy and Guideline Amendments

## **Notifications:**

Project Mailing List (email)

## **Report Approval:**

All reports are reviewed and/or approved by Department Director, the Chief Financial Officer and the Executive Director of Legal Services & Corporation Council. Final approval is by the City Manager.