

Development application guidelines

Shadow impact analysis

What is the purpose of this?

A *shadow impact analysis* is a document, comprised of text and supporting diagrams, that demonstrates the shadows cast by a proposed development during several times/dates throughout the year to determine whether shadows generated will impact adjacent properties, streets and public spaces.

Who should prepare this?

This *shadow impact analysis* should be prepared by a registered architect, professional engineer, full member of the Canadian Institute of Planners (MCIP), or a qualified consultant with experience in this field.

When is this required?

A *shadow impact analysis* may be required for proposals comprised of buildings five storeys and higher, for the following development applications:

- Official Plan Amendment
- Zoning By-law Amendment
- Plan of Condominium
- Site Plan Control

Staff may also require a shadow analysis for development proposals of lesser height based on the potential impacts on the surroundings. This requirement will be identified during the pre-consultation stage.

Why do we need this?

The *shadow impact analysis* demonstrates the effects of shadows cast by proposed buildings and structures throughout the day and at set intervals during the year. The document is used to evaluate whether the proposal causes undue shadow impacts on the subject lands and on the surrounding context, including building facades, private and public outdoor amenity and open spaces, public parkland, sidewalks and other components of the public realm.

How should this be prepared?

Study Format

- a letter summarizing the shadow analysis, outlining how the criteria have been met and describing any proposed mitigating features
- images of shadow tests using models that clearly indicate the development site, its boundary, the foot print and mass of buildings within the test site, all streets, public parks and accessible open spaces, and all adjacent properties and buildings affected by shadows.

Shadow tests for Town of Oakville should be prepared using Eastern Time Zone (Standard Time: Universal Time minus 5 hours and Daylight Saving Time: Universal Time minus 4 hours) and the geographic coordinates 43.46° N, 79.72° W.

Shadow Models should include:

- all streets, blocks, parks and open spaces, and existing buildings and structures to a distance that shows the shadow impacts during the requested times
- all approved, but not built, buildings and structures within the model area

- existing, approved, and proposed built form differentiated using different colours
- the shadows of the existing and approved buildings, as well as the shadows cast by the proposed development, represented using different colours to distinguish between existing shadows and the shadows resulting from proposed buildings
- a reference base plan plotted at a metric standard scale

Test Dates

The *shadow impact analysis* will be conducted for April 21, June 21, September 21 and December 21.

Test Times

Hourly intervals starting 1.5 hours after sunrise and ending 1.5 hours before sunset

Criteria

The *shadow impact analysis* must demonstrate that adequate sunlight is available for residential amenity spaces to maximize their use during spring, summer and fall afternoons and evenings.

Shadow impacts from proposed development should not exceed two consecutive hourly test times after 12:00pm on April 21, June 21 and September 21 (or where the adjacent site is undeveloped, on at least 60% of that site).

The *shadow impact analysis* must demonstrate that public sidewalks, public plazas, public parks, and school yards receive at least 5 hours of continuous sunlight per day on April 21, June 21 and September 21.

The *shadow impact analysis* must demonstrate that proposed development allows adequate sunlight on building faces and roofs for the possibility of using solar energy. Shadow impacts from proposed development should not exceed two consecutive hourly test times on December 21.

What else should we know?

Additional study times and analyses may be required to properly determine the degree of shadow impact.

The *shadow impact analysis* may be submitted as part of an *Urban Design Brief*.

What other resources are available?

Town of Oakville - Livable by Design Manual:

<http://www.oakville.ca/business/urban-design-manual.html>

Town of Oakville - North Oakville Urban Design and Open Space Guidelines:

<http://www.oakville.ca/assets/2011%20planning/nco-urbdesguidelines-09nov09.pdf>