



Shadow Study

**Rangeview Estates
Development Master Plan**
Mississauga, ON

Rangeview Landowners Group Inc.

April 2024



Job Number
20167

www.bousfields.ca

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Introduction and Summary

This shadow study has been prepared by Bousfields Inc., on behalf of the Rangeview Landowners Group Inc. ("Rangeview LOG"), to demonstrate the hypothetical shadow impacts cast by conceptual buildings illustrated in the Rangeview Estates Development Master Plan ("Rangeview DMP"). The Rangeview DMP proposes a mix of building typologies throughout the neighbourhood. These typologies and associated heights proposed generally align with the policies and guidelines outlined in the Mississauga OP. These building typologies include: (1) Low-rise buildings up to 4-storeys; (2) Mid-rise buildings between 5- and 8-storeys; and (3) Tall Buildings between 9- and 15-storeys. The built form illustrated in this shadow study – and the corresponding DMP – is conceptual, with the exact designs and architectural details being determined at a subsequent development approvals process when each individual parcel plans to develop.

Bousfields Inc. has prepared this shadow study in accordance with the terms of reference associated with the preparation of a Development Master Plan. This shadow study is generally based on the requirements set out in Mississauga's Urban Design Terms of Reference – Standards for Shadow Studies February 2023 ("Shadow Study TOR").

1.1 Site Latitude and Longitude

The latitude and longitude for the Rangeview Estates Precinct was defined by SketchUp Pro:

- Latitude: 43.574577 N
- Longitude: 79.559169 W

Astronomic north was also determined by geolocating the 3-dimensional model in SketchUp Pro.

1.2 Time Zone

- Eastern Time Zone (ET)
- Standard Time: UTC - 5 hours - applies on December 21st
- Daylight Time: UTC - 4 hours - applies on June 21st and September 21st

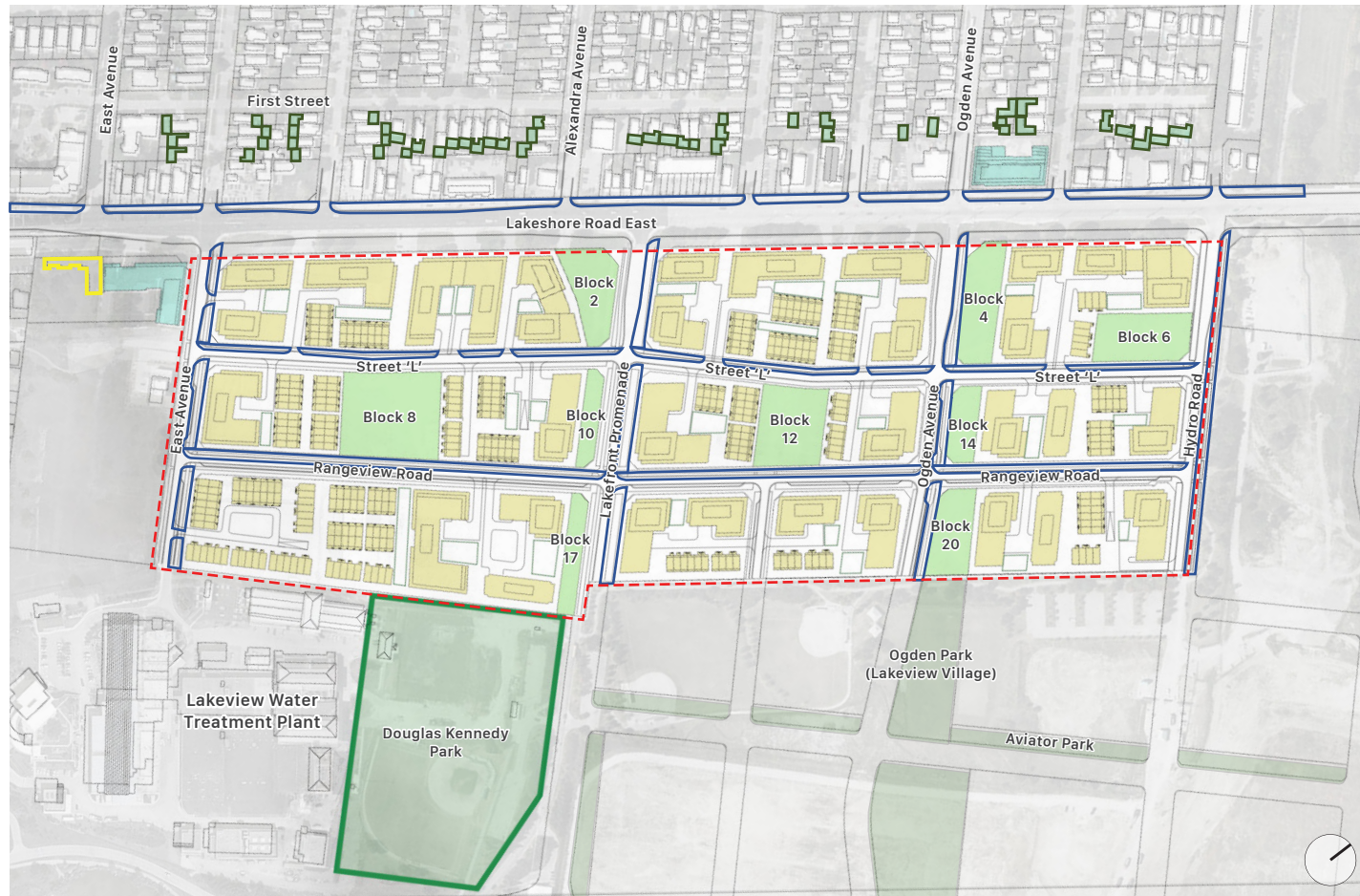
1.3 Software Used to Prepare Shadow Analysis

SketchUp Pro was used for 3-dimensional modeling and exporting the shadow study images. The exported images were compiled and rendered in Adobe Photoshop.

2

Shadow Analysis

Key Map



Legend

- Rangeview Estates
- Proposed Rangeview Estates Built Form
- Proposed Rangeview Estates Parkland
- Existing Park
- Residential Private Outdoor Amenity Spaces (7.5m from exterior wall)
- Outdoor Amenity Area
- Approved Park (Lakeview Village Development)
- Public Realm (Boulevard)
- Approved Developments
- Existing Buildings
- Shadows Cast by Existing Buildings and Approved Developments

Parks and Open Spaces

1. Lakefront Greenway (Block 2, Block 10, Block 17)
2. Ogden Park (Block 4, Block 14, Block 20)
3. Rangeview Park (Block 8)
4. Central Square (Block 12)
5. Hydro Common (Block 6)
6. Ogden Park (Lakeview Village)

7:07am - June 21st



Legend

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7:20am - June 21st

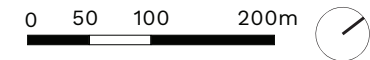


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8:20am - June 21st



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9:20am - June 21st



Legend

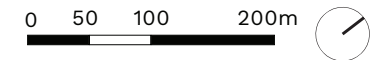
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10:20am - June 21st



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11:20am - June 21st



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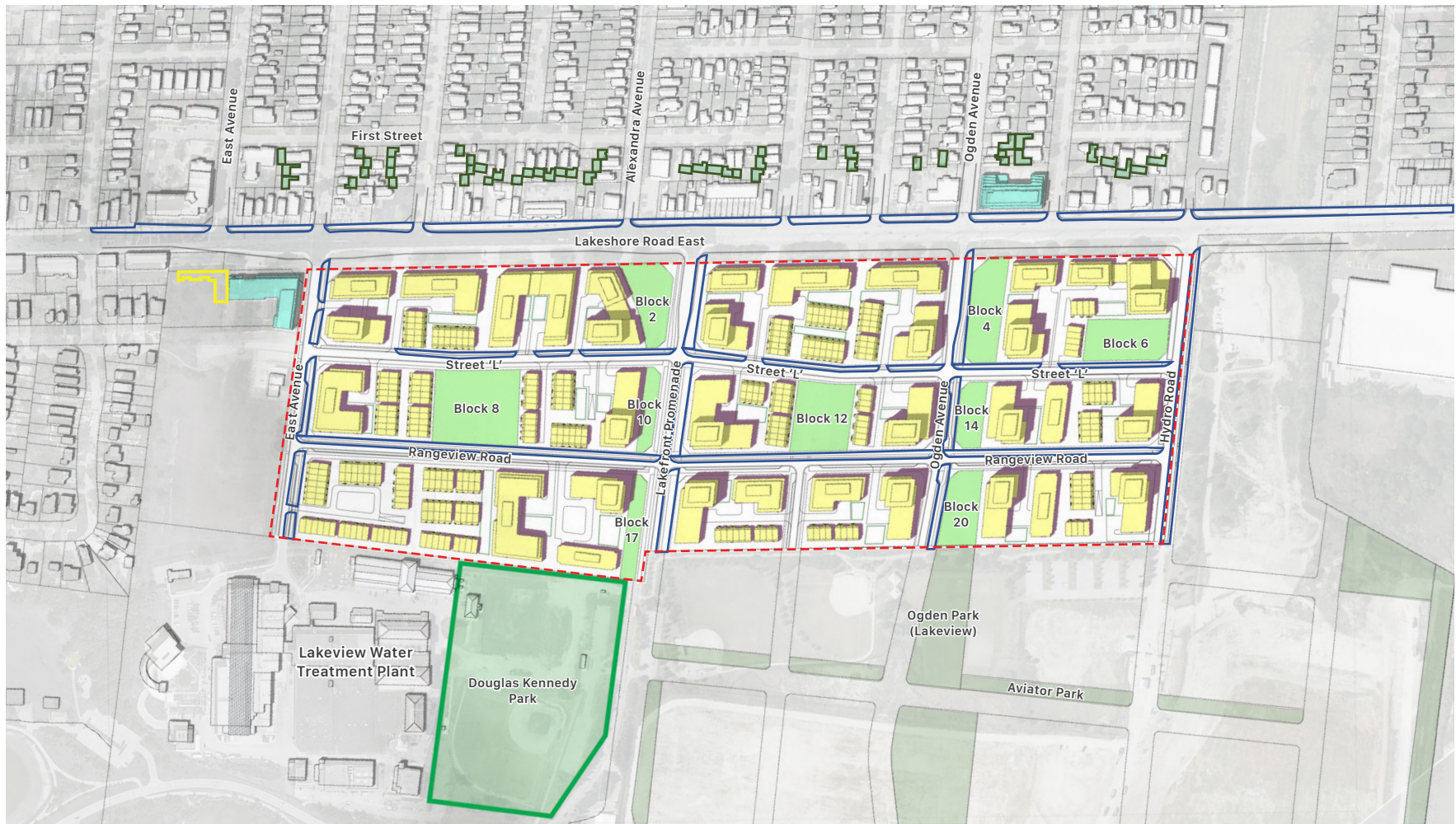
12:20pm - June 21st



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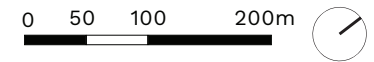
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1:20pm - June 21st



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2:20pm - June 21st



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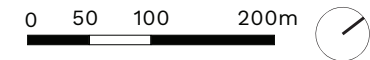
3:20pm - June 21st



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4:20pm - June 21st



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5:20pm - June 21st



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6:20pm - June 21st

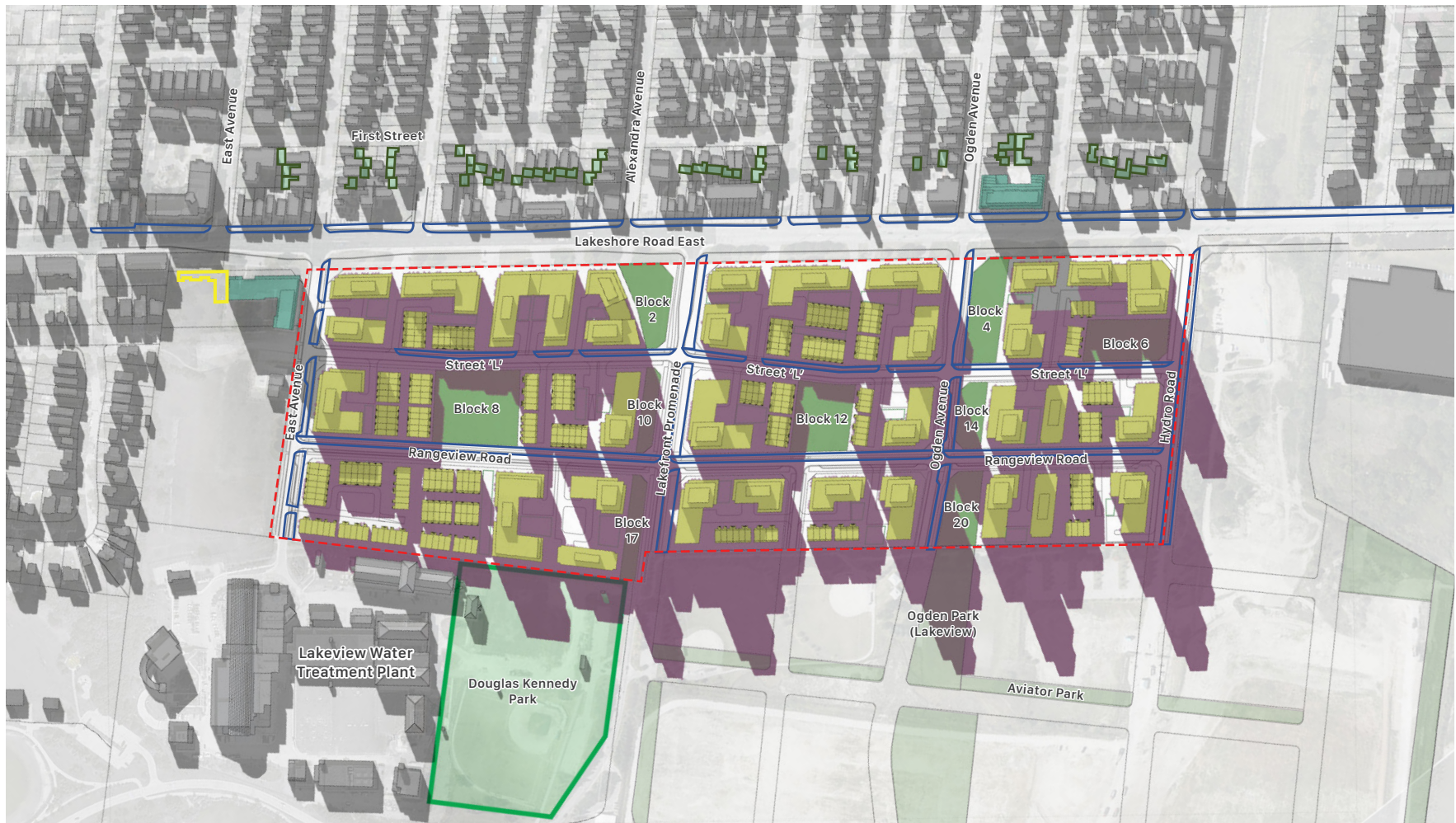


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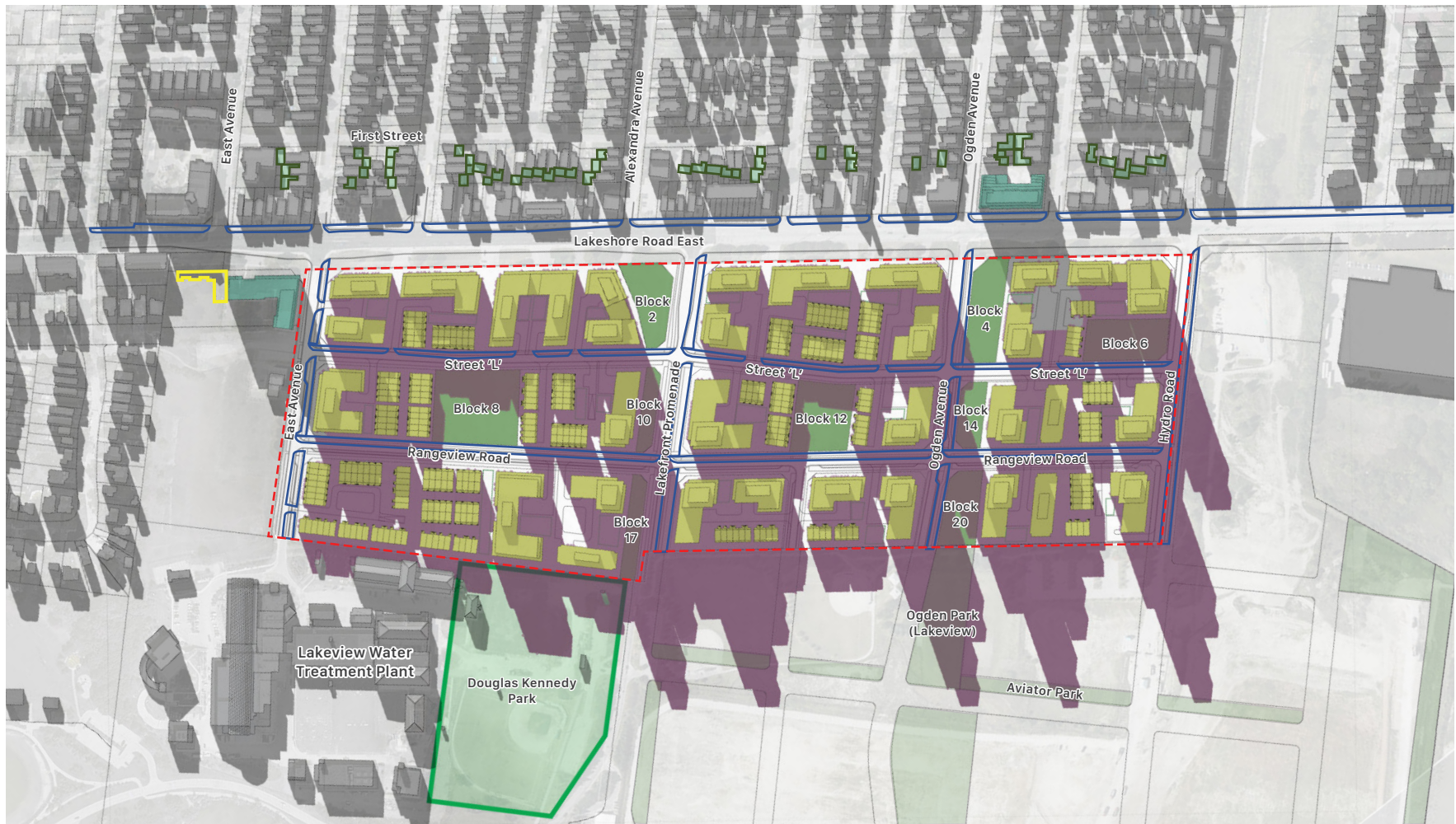
7:20pm - June 21st



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7:33pm - June 21st



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8:35am - September 21st



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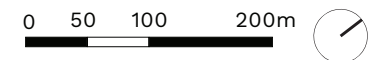
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9:12am - September 21st



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10:12am - September 21st



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11:12am - September 21st



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12:12pm - September 21st



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1:12pm - September 21st



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2:12pm - September 21st



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3:12pm - September 21st



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4:12pm - September 21st



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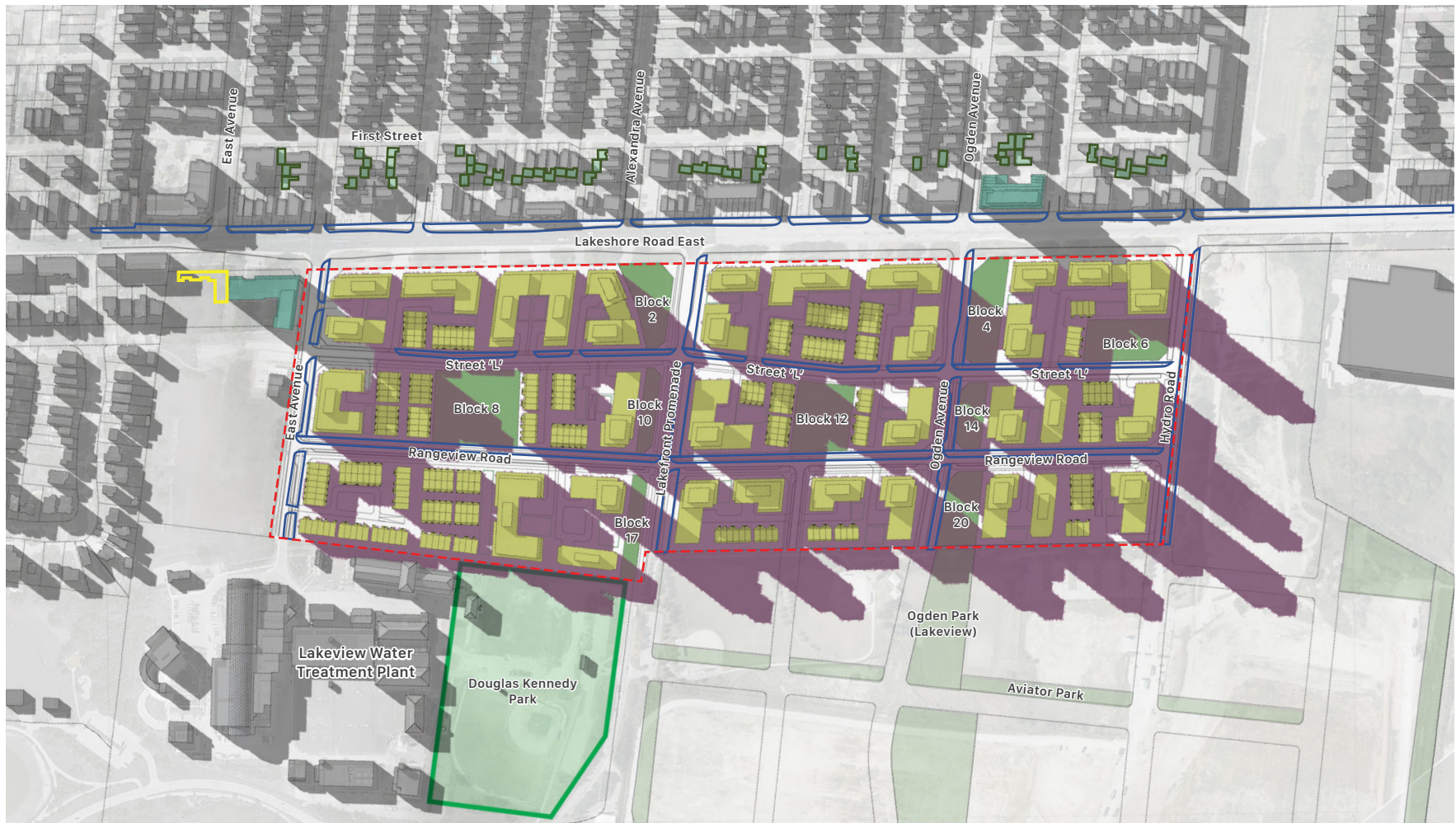
5:12pm - September 21st



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5:48pm - September 21st



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9:19am - December 21st



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10:17am - December 21st



Legend

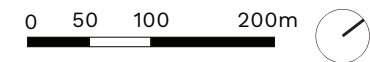
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11:17am - December 21st



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12:17pm - December 21st



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1:17pm - December 21st



Legend

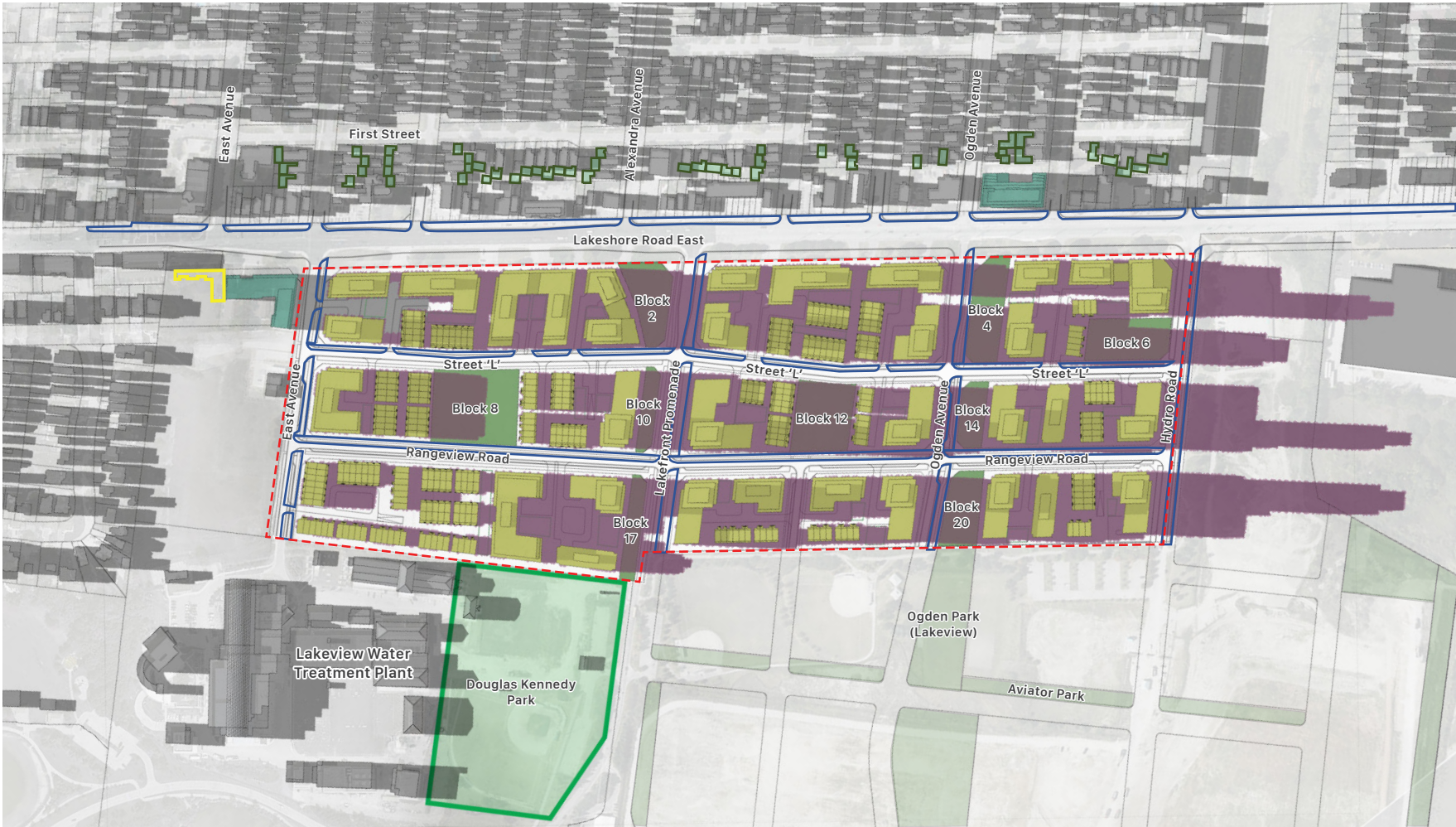
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2:17pm - December 21st



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3

Assessment of Shadow Impacts

Residential Private Outdoor Amenity Spaces

Residential private outdoor amenity is defined as the space between a 7.5-metre offset taken from the rear wall ("Line of Impact Assessment") to the exterior building wall of the dwelling. This study demonstrates that the conceptual buildings proposed within the Rangeview DMP area do not cast new shadows on immediate residential private outdoor amenity areas – specially, the properties north of Lakeshore Road East – during the prescribed times on June 21. For September 21, residential private outdoor amenity areas north of Lakeshore Road East will experience minor shadow impacts from 8:35 AM to 9:12 AM.

Communal Outdoor Amenity Areas

Communal outdoor amenity areas (that are part of a proposed development) within the vicinity of the Rangeview DMP area are located at 958 to 960 East Avenue – an approved development application at the intersection of East Avenue and Lakeshore Road East. This study demonstrated that the conceptual buildings proposed within Rangeview DMP area do not cast new shadows on the outdoor amenity areas planned for the 958 to 960 East Avenue development during the required dates and times defined in the Shadow Study TOR.

Although this study demonstrated shadow impacts on potential outdoor amenity areas defined in the Rangeview DMP, these locations were conceptual and were only identified to illustrate the general principle that these spaces should be centrally located within each development parcel – as appropriate – and maintain high visibility

from the adjacent public realm. When each parcel plans to develop, the strategic placement of outdoor amenity areas to minimize shadow impacts will be considered.

Public Realm

The Shadow Study TOR defines public realm as including sidewalks, open spaces, parks and plazas. With respect to the criteria involving full sunlight on the opposite boulevard (including the full width of the sidewalk), the Rangeview DMP demonstrates that the opposite boulevard of Lakeshore Road East will not experience any shadow impacts between 12:12 PM and 2:12 PM, and from 3:12 PM to 5:12 PM on September 21st.

Due to the orientation of this geographic area of Mississauga, the opposite boulevard of the proposed Street 'L' and Rangeview Road will experience segmented shadow impacts between 9:12 AM to 11:12 AM and 3:12 PM to 5:12 PM. During the period of 12:12 PM and 2:12 PM, Street 'L' will not experience any shadow impacts, while Rangeview Road experiences minimal shadow impacts at the joining intersections from 12:12 PM to 1:12 PM.

Similarly, the opposite boulevards of East Avenue, Lakefront Promenade, the proposed Ogden Avenue and Hydro Road will experience segmented shadow impacts between 9:12 AM to 11:12 AM and 3:12 PM to 5:12 PM. During the period of 12:12 PM and 2:12 PM, East Avenue will not experience any shadow impacts, while Lakefront Promenade experiences minimal shadow impacts at 2:12 PM. The proposed Ogden Avenue and Hydro Road experiences minor, segmented shadow impacts from 1:12 PM to 2:12 PM.

Sun Access Factor (September 21st)

As shown in Table (1), the design of the proposed parks within the Rangeview DMP area provides a sun access factor greater than 50% for all park blocks – except Block 10. Although Block 10 experiences a sun access factor of 39% – due to its width (15 metres) and location on the south side of Lakefront Promenade – the potential use for this block, primarily as a multi-use pedestrian pathway and not an active programmable space, deems the limited sun access factor appropriate for its context and intended use.

Test Time		Park and Open Space Areas									
September 21st	Douglas Kennedy Park	Block 2	Block 4	Block 6	Block 8	Block 10	Block 12	Block 14	Block 17	Block 20	Ogden Park (Lakeview)
		(Lakefront Greenway)	(Ogden Park)	(Hydro Common Park)	(Rangeview Park)	(Lakefront Greenway)	(Central Square)	(Ogden Park)	(Lakefront Greenway)	(Lakefront Greenway)	
	38,921m ²	2,850m ²	3,324m ²	3,372m ²	6,174m ²	1,226m ²	3852m ²	1,616m ²	1,546m ²	2,556m ²	6,515m ²
8:35am	38,147	344	265	1,171	2,659	339	1,161	0	1,546	1,648	6,515
9:12am	37,574	2,417	283	1,279	4,921	826	2,590	227	1,546	2,065	6,515
10:12am	37,290	2,774	2,897	2,512	5,993	1,226	3,693	1,616	1,546	2,556	6,515
11:12am	37,122	2,458	3,324	3,346	6,174	1,226	3,852	1,616	1,546	2,556	6,515
12:12pm	36,918	2,069	3,324	3,372	6,174	703	3,852	1,616	1,464	2,556	6,515
1:12pm	36,703	1,774	3,324	3,328	6,084	483	3,752	1,616	1,154	2,556	6,515
2:12pm	36,454	1,569	3,036	3,256	5,915	245	3,539	1,468	947	2,375	6,515
3:12pm	36,079	1,633	2,569	3,163	5,771	138	3,302	1,145	863	1,874	6,515
4:12pm	35,500	1,430	2,461	2,853	5,493	105	2,943	1,185	709	1,292	6,504
5:12pm	33,012	1,277	1,975	2,382	4,440	0	1,721	594	624	616	5,996
5:48pm	27,568	1,485	1,407	1,020	2,612	0	509	239	595	469	5,146
Average Area in Sunshine	35,670	1,748	2,260	2,517	5,112	481	2,810	1,029	1,140	1,869	6,342
Sun Access Factor	0.92	0.61	0.68	0.75	0.83	0.39	0.73	0.64	0.74	0.73	0.97

Table 1 - Sun Access Factor for Parks and Open Spaces

4

Conclusion

The shadows cast by the conceptual Rangeview DMP buildings on residential private outdoor amenity spaces, communal outdoor amenity areas and the public realm – within the Rangeview Estates boundary and immediate surroundings – are generally limited and appropriate. The shadows cast are typical of an intensified, urban environment that envisions a mix of building typologies such as: low-rise buildings up to 4-storeys; mid-rise buildings between 5- and 8-storeys; and tall buildings between 9- and 15-storeys. Specifically, the proposed parks – except Block 10 of the Lakefront Greenway – demonstrate a sun access factor greater than 50%. Although the criteria prescribed in the Shadow Study TOR are generally met, it is important to note that the demonstrated massing forms are conceptual, and are subject to change at a later development approvals process when each individual parcel plans to develop.

