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Facilitator (Karyn Dumble) welcomes the community, provides the indigenous land acknowledgment and sets out the logistics of the meeting.

Land Acknowledgement

We would like to begin by acknowledging that though we are meeting virtually we are all on land that has been inhabited by Indigenous people for thousands of years. We acknowledge that this community is located on the traditional territory of the Haudenosaunee and Anishnaabeg. This territory is covered by the Upper Canada Treaties, is within the lands protected by the “Dish with One Spoon” wampum agreement and is directly adjacent to the Haldimand Treaty territory. Today, this meeting place is still the home to many Indigenous people from across Turtle Island and we are grateful to have the opportunity to work, live and play on this land.



Pronunciation:

- Haudensaunee: how-den-o-SHOW-nee
- Anishinaabe: uh-NISH-ih-NAH-bay

Outline of Webinar

- Introduce the Consulting Team
- Review Site Location / Community Context
- Presentation of Redevelopment Details and design progression
- Review Key Issues
- Identify Required Planning Act Approvals
- Question/Answer Period



- No notes required.

Consulting Team

- Land Use Planner: *GSP Group* – **Brenda Khes**
- Architect: *SRM Architects* – **Edward Thomas**
- Traffic/Parking: *Paradigm Transportation Solutions Limited*
– **Adam Makarewicz**
- Wind: *RWDI* - **Dan Bacon**
- Civil Engineer: *MTE* – **Michael Gojsic**
- Heritage Architect: *McCallumSather* - **Kanika Kaushal**



BK briefly introduces the Speakers and consultants on hand to assist in answering questions at the end of the presentation.



Site Location

- 200 Market Street, 55 Queen Street North (and 125 Napier Street)
- 0.82 hectares (± 2 acres)
- Grade increase of 3.5m from east to west
- Grade decrease of 2.7m from south to north




125 Napier will be the new municipal address assigned to the site upon its redevelopment

3.5m = 11.5 feet

2.7m = 8.8 feet

Adjacent Land Uses

- **North:** 21 storey apt.
- **South:** approved 12 storey hotel and 6 storey apt. (under construction)
- **East:** 18 storey apt.
- **West:** single and semi-detached dwellings



North: 75 Queen St N (21 storeys)

South:

- approved development including street facing townhouses built into the podium fronting Market Street, a 12 storey hotel at the corner of King and Queen, and a 6-storey apartment on the western half of the site fronting King Street.
- Proposed development - application for an increase in height for the apartment building from 6 storeys to 27 storeys has been appealed by the owner to the Ontario Land Tribunal (OLT)

East – 44 Queen St North (18 storeys)

West –

- fronting Market Street: 230 Market Street: 2-storey single detached dwelling
- Fronting Napier Street: 157 Napier Street: 1 storey single detached dwellings; AND
- Rear yards of 35, 38, 42 and 44 Ray Street North (single and semi-detached dwellings)

Community Context



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- The surrounding area has a mix of low-rise residential dwellings, mid and high-rise apartment buildings to the north and west, commercial/community and institutional uses north and south of the site, including the Queens Garden Long Term Care facility to the northeast, and the Scottish Rite to the south.
- Commercial and mixed-use buildings are prevalent along King Street.
- Hess Village to southeast contains several restaurants and bars established largely within converted residential dwellings
- The area is also well-served by existing public amenities including churches, Hamilton's Downtown Mosque, schools, parks, and open spaces.
- Victoria Park is the most prominent park including tennis courts, a ball diamond, an outdoor pool, and community garden.
- Commercial uses in proximity to the site contain a mix of retail shops, services, restaurants, and other commercial uses along Queen St. to the north, as well as King St and Main St.
- This is very much a “downtown” *type* neighbourhood vs a suburban type neighbourhood.

Schools:

- Hess Street Public School (±500m to the north)
- Strathcona Jr. Public School (±800m to the west)

Parks & Recreational Amenities:

- Victoria Park (±700m to the west)
- Gary Hill Memorial Park (±190m to the north)

Religious Facilities:

- Erskine Presbyterian Church (±450m to the west)
- Hamilton Downtown Mosque (±350m to the east)
- Focus on the World Ministries (±400m to the west)
- Zion United Church / Korean United Church (±400m to the west)
- Crossfire Assembly (±450m to the southwest)

Commercial/Shopping Amenities:

- Hess Village (±300m to the south/east)
- B & T Plaza (±270m to the north)
- Locke Street Shopping District (±1km to the southwest)
- Jackson Square (±600m to the east)
- Dundurn Plaza (Fortinoes) (±1km to the southwest)

Municipal Facilities and other Amenities:

- Scottish Rite (±110m to the south)
- Hamilton City Hall (±1km to the east)
- David Braley Health Sciences Centre (±850m to the southeast)
- First Ontario Centre (±500m to the east)
- Art Gallery of Hamilton (±750m to the east)
- First Ontario Concert Hall (±700m to the east)
- Hamilton Convention Centre (±700m to the southeast)
- Hamilton GO Centre (±1.5km to the southeast)
- HSR MacNab Street hub (±1 km to the southeast)
-



Surrounding Context

- Within the Strathcona Neighbourhood
- Directly west of and adjacent to Downtown Hamilton
- 1 block North of King Street LRT
- Proximate to the West Harbour and Hamilton GO stations
- North of the Niagara Escarpment



- From a land use planning perspective, the site is located on the eastern edge of the Strathcona Neighbourhood.
- To the east, on the east side of Queen Street is the western edge of Hamilton's Downtown Urban Growth Centre.
- King Street, to the south, is an approved Light Rail Transit (LRT) route.
- Both Queen Street and King Street are **arterial** roads and HSR bus transit routes.
- The site is well situated in proximity to both the Hamilton GO and West Harbour GO stations, as well as Highway 403 to the west all less than 2km from the Site.

Height Context



- Tall buildings are not an anomaly to the lower city
- There are tall buildings along both the east and west sides of Queen Street.
- The Site is currently zoned to permit a 15 storey building.
- While the majority of the tall buildings that currently exist within the city are within the Downtown Urban Growth Centre (UGC) as illustrated in this slide; there are many that are not and many that have been approved outside the Urban Growth Centre including:
 - 2 existing buildings north of York Boulevard along the west side of Queen Street that are 20 and 24 storeys (“The Villages”)
 - The existing 21 storey building (75 Queen) directly north of the site on the west side of Queen Street
 - contextually these buildings are all located adjacent to low rise development.:
 - The southwest corner of Main and Queen where a 23 storey building was recently approved adjacent to low rise development; and a
 - A 25 storey building at 225 John south of the Downtown UGC was recently approved as well.



Clarification of Current Applications

- Site Plan application in process to construct a 15-storey apartment atop a 3-storey podium
- Permitted as of right 15 storey building height based on current zoning
- Conditional Site Plan approval has been received; owner working to clear conditions to obtain a building permit.



- To lock in Development charges for part of the site's redevelopment, a Site Plan Control Application was submitted to the City to permit the as-of-right redevelopment of the Site based on current approved zoning.
- Site Plan Application DA-18-098 received conditional Site Plan approval on September 27, 2018, to construct a fifteen (15) storey mixed use building on the site with a 3-storey podium pursuant to the as of right zoning.
- To provide for the as of right development, approval of a minor variance application (HM/A-18:278) from the Committee of Adjustment was received on November 1st, 2018, to address the redevelopment of the site as one comprehensive building versus several smaller buildings as originally envisioned by the Site-specific zoning.

This Site Plan application is still active, and the owner is working to clear the conditions of site plan approval to obtain a building permit.

Requested Land Use Planning Changes

- Official Plan Amendment (OPA) to permit an increase in height from 10 to 27 storeys and an increase in maximum density from 300 to 920 units per hectare
- Rezone the Site from industrial and high density residential zones to a modified Downtown Residential D5 Zone to permit an increase in height, a decrease in parking and an increase in building setbacks



- OPA: Increase in height from 10 storeys to 27 storeys and an increase in the maximum density from 300 to 920 units/ha
- ZBA: rezone the Site from the *“High Density Multiple Dwellings E-3/S-1208 and E-3/S-1208a District, and the modified Light and Limited Heavy Industry Etc. J/S-1208 and J/S-1208a District of Zoning By-law 6593* to a modified Downtown Residential (D5,) Zone in the City’s new Comprehensive Zoning By-law 05-200

Required Studies

- Archaeological Report
- Noise Impact Study
- Tree Management Plan
- Planning Justification Report
- Shadow Impact Study
- Urban Design Brief & Visual Impact Assessment
- Cultural Heritage Impact Assessment
- Functional Servicing & Stormwater Management Report
- Site Servicing, Erosion and Grading Plans
- Traffic Impact Study
- Pedestrian Wind Study
- Geotechnical Report



- An extensive list of studies were required to be submitted with our Planning Act Applications to provide the City with sufficient technical and policy justification for the requested amendments.
- A copy of each of these studies can be found on GSP Group's website under active projects: <https://www.gspgroup.ca/active-projects/market-queen-napier-redevelopment/>

Planning Policy Framework

- Planning Act
- Provincial Policy Statement (2020)
- A Place To Grow: Growth Plan for the Greater Golden Horseshoe (2019)
- Urban Hamilton Official Plan (2013)
 - Strathcona Secondary Plan



Planning Act:

Provincial Policy Statement (PPS) is the statement of the Government's policies on land use planning.

It applies province wide and provides clear policy direction on land use planning to promote strong communities, a strong economy and a clean and healthy environment.

All land use planning decisions must be consistent with the policies of the PPS.

The PPS supports:

- intensification and the compact, efficient use of land and existing planning infrastructure within urban areas
- Transit supportive development accommodating a significant supply of housing options as well as commercial development;

Growth Plan: The Growth Plan builds on the policy foundations of the PPS and provides additional and more specific land use planning policies to address issues facing the Greater Golden Horseshoe to the year 2051.

All land use planning decisions must conform with policies of the Growth Plan.

The policies of the Growth Plan are based on several principles including:

- Revitalizing downtown to become vibrant and convenient centres.
- Creating communities that offer more options for living, working, shopping, and playing.
- Providing housing to meet the needs of people and families at any age.
- Preventing sprawl and protecting green-space.
- Reducing traffic congestion by improving access to a variety of transportation options.

Urban Hamilton Official Plan

The UHOP provides direction and guidance on the management of land use change and physical development within the City.

The Site is identified as a part of a **Primary Urban Corridor** element of the city's Urban Structure where growth, including higher density development is supported.

The Site is also designated as “**neighbourhoods**” in the UHOP including policies that “promote and support residential intensification of appropriate scale and in appropriate locations throughout the neighbourhood. Based on the location attribute of the Site on the periphery of the neighbourhood adjacent to a minor arterial road, high density residential development is permitted and encouraged.

UHOP

- Density – while the site is not located within the limits of the Downtown Urban Growth Centre, it IS located within the city’s built boundary where the Official Plan targets 40% of the City’s intensification to occur. In addition, it is noted that City Council recently decided to hold the urban boundary firm, increasing the need for more density in both the Downtown urban Growth Centre **and** the **built-up** areas of the City.
- Accordingly, given that the site:
 - IS within the **built up area**;
 - IS in close proximity to the Downtown Urban Growth Centre and the amenities and services it offers;
 - IS adjacent to an arterial road along an established transit road; and
 - IS within 1 block of a planned rapid transit route –We believe it is appropriately located for higher density development.

Strathcona Secondary Plan

- Designated High Density Residential

- Maximum density 300 units per hectare and a maximum building height of 10 storeys
- Additional height permitted subject to the findings of more detailed studies that address: sun/shadow/ visual impact, wind impact, and an urban design brief to determine compatibility with adjacent residential development.
- In this regard, the studies noted earlier were prepared in support of the requested density and height permissions.

- Urban Hamilton Official Plan Design Policies
- Strathcona Urban Design Guidelines (2013)
- Transit-Oriented Development Guidelines
- Tall Buildings Guidelines
- City-Wide Corridor Planning Principles & Design Guidelines (2012)

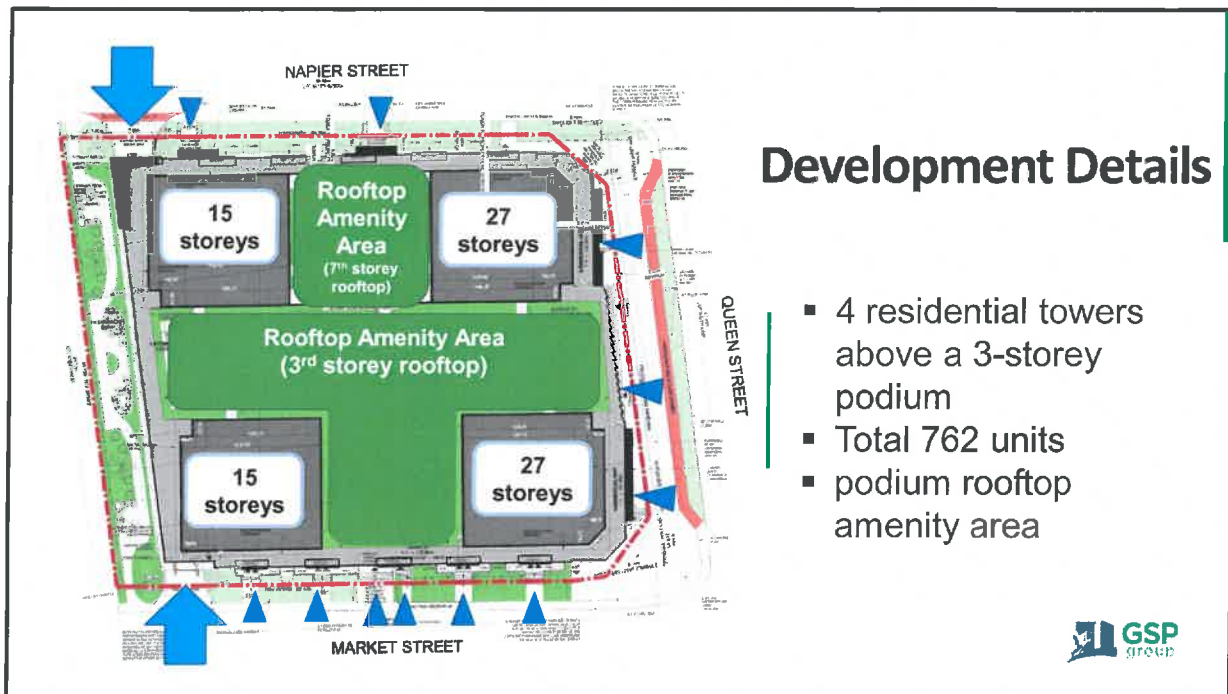
Applicable Design Policies and Guidelines



Multiple and overlapping layers of design policies and guidelines

Note the *guidelines* are not policy or requirements; rather they offer guidance in the design of buildings

We have addressed the Urban Design policies of the UHOP and, in our opinion, have met the intent of the Urban Design guidelines of the Secondary Plan, the Tall Buildings Guidelines and the City-Wide Corridor Planning Principles & Design Guidelines.



Overall Description:

The Proposed Development contemplates the comprehensive redevelopment of the Site into four (4) residential towers above a 3-storey podium.

Above the podium is:

- an expansive private rooftop amenity area for the residents of the development
- two 24-storey point towers situated on the east side of the podium (total height 27 storeys) along Queen Street North
- two 12-storey point towers situated on the west side of the podium (total height 15 storeys).
- Between and joining the 2 point towers along Napier Street is a mid-rise apartment geared to seniors with a total height of 7 storeys
 - above this 7-storey building is a rooftop amenity space specifically for the seniors.

Pedestrian Access along Napier (2), Queen Street (3) and Market Street (6)

Tower 1: 15 storeys, 119 units

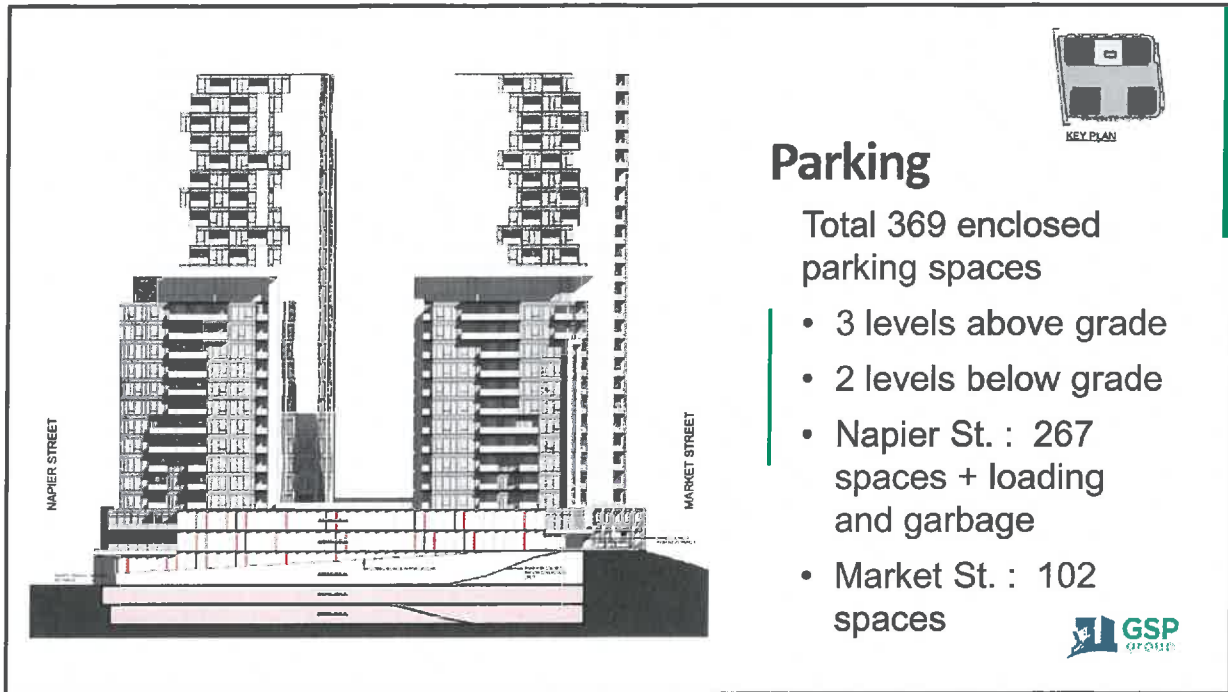
Tower 2: 27 storeys, 239 units

Tower 3: 27 storeys, 200 units

Tower 4: 15 storeys, 80 units
3 Storey Walkup Units, 9 units
Senior's Living: 115 units
TOTAL: **762** units

5 Commercial units within podium

Pedestrian Access vs Vehicular Access



Parking

Total 369 enclosed parking spaces

- 3 levels above grade
- 2 levels below grade
- Napier St. : 267 spaces + loading and garbage
- Market St. : 102 spaces

Two vehicular accesses to the internal parking on-Site; one from Napier and one from Market Streets

Total: 369 parking spaces

Napier street access enters on the Level 1 parking garage level providing access to 267 parking spaces for the residential and commercial uses as well visitor, drop off (e.g. DARTS, uber, etc.), loading, and garbage functions for the commercial and residential uses.

Market street entrance enters on Level 2 and provides access to 102 parking spaces for the residential uses only including visitor parking.

Parking ratio based on downtown parking requirements applicable across the road on the east side of Queen Street North as well as the new 23 storey tower approved at the southwest corner of Queen Street and Main Street to the south where Council agreed that applying the parking ratio applicable to the lands on the east side of Queen Street should be applied to the west side of Queen Street as well.

Mid Block Public Walkway

- 9m wide pedestrian connection
- Detailed design to follow CPTED Principles

GSP Group

We are excited about the proposed mid block connector along the west side of the building.

To provide you with an idea of the 9m (30 foot) width proposed – this is approximately the width of the adjacent lot at 230 Market Street and wider than the paved width of Market Street - we are *not* proposing a narrow walkway.

At a high level, we will be providing:

- 1.8m Solid board privacy fence along west lot line
- Appropriate Lighting to improve visibility and feelings of safety.
- Landscaping designed in ways that avoid creating hiding places for criminals.
- Benches/seating areas and bike racks to encourage activity - the more people that use the space and the more active it is, the safer it becomes

While a detailed design for this space has not been undertaken at this stage, our intent is for the design to follow CPTED's (Crime Prevention Through Environmental Design) principles – CPTED is a concept based on the belief that crime can be influenced by the proper design and effective use of the human made environment.

5 principles to be followed as well as the 3 “L”s of crime prevention – locks, lighting

and landscaping.

Design Principles:

1. **Natural Access Control:** Natural access control guides how people enter and leave a space through the placement of entrances, exits, fences, landscaping and lighting. It can decrease opportunities for criminal activity by denying criminals access to potential targets and creating a perception of risk for would-be offenders.

2. **Natural Surveillance:** Natural surveillance guides the placement of physical features such as windows, lighting and landscaping. These features affect how much can be seen by occupants and passersby. Potential criminals are unlikely to attempt a crime if they are at risk of being observed. Similarly, we are likely to feel safer when we can see and be seen.

3. **Territorial Reinforcement:** Physical design can create an area of territorial influence that can be perceived by and may deter potential offenders. Examples include defined property lines and clear distinctions between private and public spaces. Territorial reinforcement can be created using landscaping, pavement designs, gateway treatments, signs and fences.

4. **Maintenance:** A well maintained home, building or community park creates a sense of guardianship and helps deter criminals.

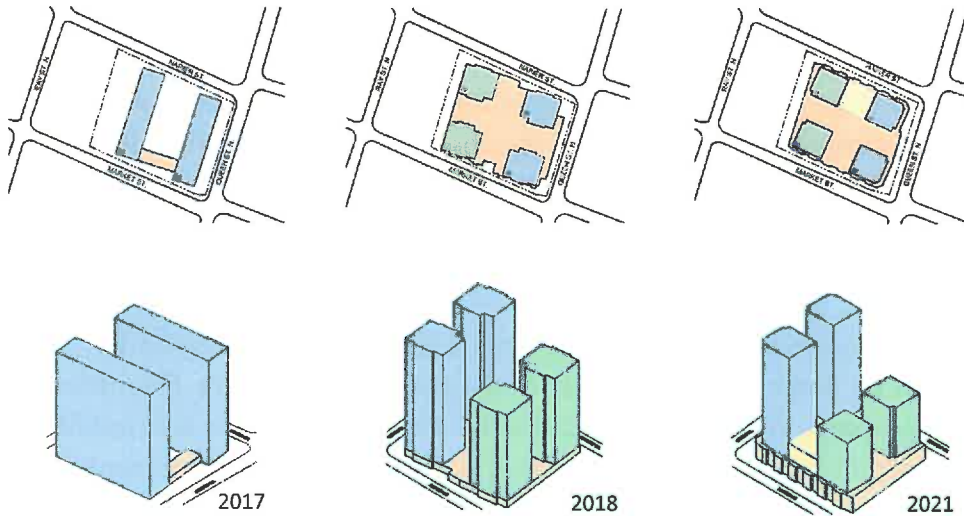
5. **Activity Support:** Criminal acts can be discouraged in public spaces when we encourage activities in those spaces by residents, visitors and other legitimate users.

Source: <https://www.apachejunctionaz.gov/838/CPTED>

Before we go any further, we would like to provide you with a little background on how we got to this Point.

Edward Thomas, the architect from SRM will take you through the evolution of the site massing and then explain the various design elements of the building.

Evolution of Built Form



- Concept 1 (2017)-**two towers** (typ. tower floorplate 14,495 sf) (1,346m²)
 - 2x 25 storey towers
 - 1 storey tower connection
- Concept 2 (2018)-**four towers** (typ. tower floorplate 7,550 sf) (701m²)
 - 2x 22 storey towers
 - 2x 28 storey towers
 - 3 storey podium
- Concept 3 (2021)-**four towers with midrise** (typ. tower floorplate 6,450 sf) (599m²)
 - 2x 15 storey towers
 - 2x 27 storey towers
 - 3 storey podium
 - 7 storey tower midrise



Mixed Use Building

- 3 storey podium with 3 distinct treatments along Market, Queen and Napier
- Apartments above including 2 – 15 storey towers and 2 - 27 storey towers
- Rooftop amenity space



Market St. Podium



Townhouse form
along Market Street



SRM
3 storey podium.

SRM provided details related to the design of the podium along Market street and how it fits in with the streetscape – low rise development along Market.



Queen St. N. Podium

Commercial/office uses
along Queen Street



SRM

Commercial/office uses along Queen Street

Due to the grade change between Market St and Napier St., a separate sunken walkway adjacent to the Queen St. N sidewalk is provided to allow level access to the units.

SRM provided details related to the design of the podium along Queen street and how it functions and fits in with the streetscape –along Queen Street



Napier St. Podium & 7 storey apartments

- Seniors' apartments within the podium along Napier



Between and joining the 2 point towers along Napier Street is a mid-rise apartment geared to seniors with a total height of 7 storeys.

Podium along Napier includes main entrance to senior's apartments

115 senior's apartment units
1 and 2 bedroom apartments

SRM provided details related to the design of the podium and 7 storey seniors apartments along Napier and how it fits in with the streetscape – low rise development along Napier to the west, as well as the high rise apartment across the street.



2 - 24 Storey Towers

- East side of podium along Queen Street North
- Across from 18 storey high-rise to the east and 21 storey high-rise to the north



SRM to described the design of the towers

Above the podium two 24-storey point towers situated on the west side of the podium (total height 27 storeys).

Tower 2: 27 storeys, 239 units

Tower 3: 27 storeys, 200 units

TOTAL: 439units


Units 1 and 2 bedroom

Tower separation 20m



2 - 12 Storey Towers

- West side of podium
- Setback 12.5m from west rear/side lot lines
- Towers 20m apart



SRM to described the design of the towers and how they meet the guidelines

Above the podium two 12-storey point towers situated on the west side of the podium (total height 15 storeys).

Tower 1: 15 storeys, 119 units

Tower 4: 15 storeys, 80 units

TOTAL: 299 units

1 and 2 bedroom

Tower separation 20m (between 24 storey towers) and 25m from 12 storey towers
12.5m (+41feet) from west property line



Rooftop Amenity

- 2 private rooftop amenity areas provided:
 - 1 above the 3-storey podium
 - 1 above the 7-storey seniors' apartments
- Mitigation measures to address wind and noise



Above the podium and the midrise senior's apartment along Napier are expansive rooftop amenity areas to service the residents of the new development.

The wind and noise studies completed for the proposed development indicate that noise and wind mitigation measures will be required to ensure this amenity space are comfortable throughout the year. In this regard, at the site plan approval stage appropriate wind mitigation measures will be implemented on the rooftop amenity area including fencing and plantings.

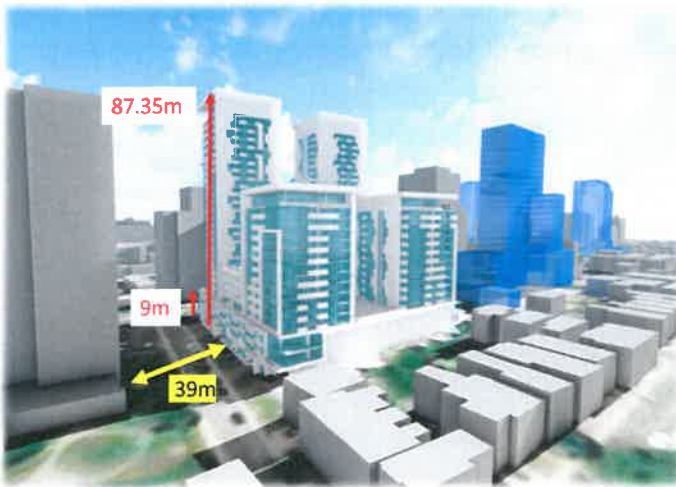
Key Land Use Planning / Compatibility Issues

- Height and Massing
- Overview / Loss of Privacy
- Shadow Impacts
- Pedestrian Wind Impacts
- Neighbourhood Traffic Impacts
- Adequacy of Parking



- Not notes required. Slide is self- explanatory

Height and Massing



With respect to Height and Massing, Edward has provided you with a detailed description of the podium and tower building design and how we got here.

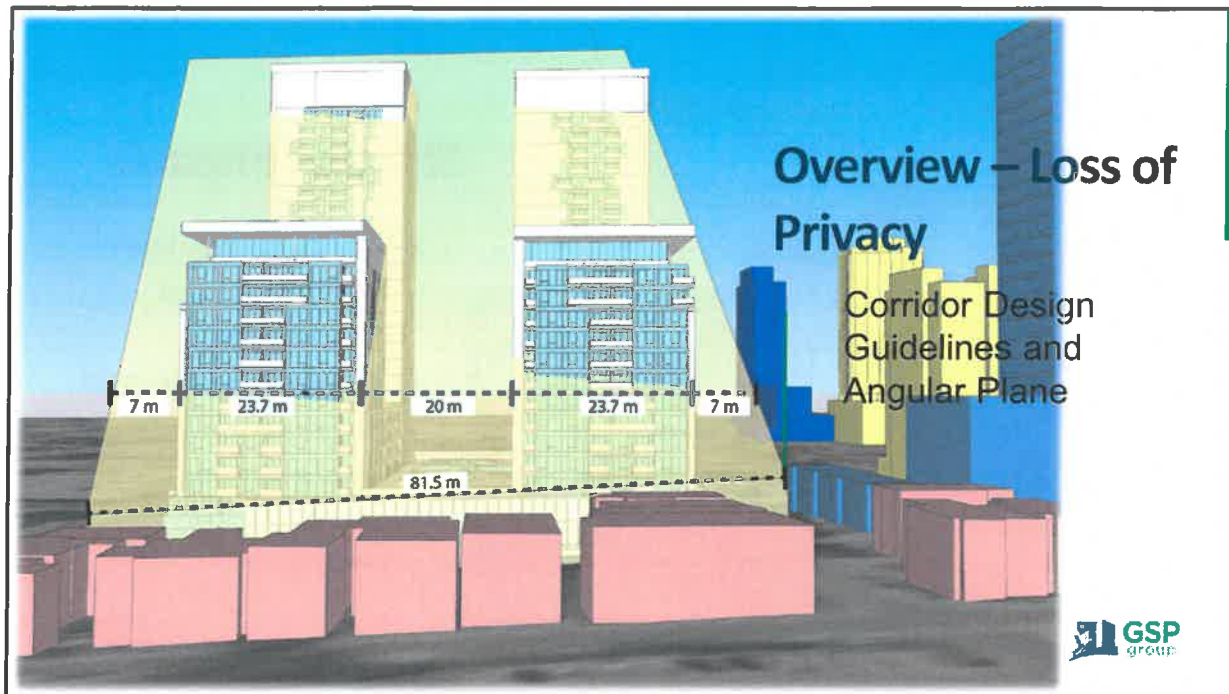
The podium portion of the building measures approximately 9m in height with the tower portion measuring 87.35m to the top of the mechanical penthouse.

The height of the proposed towers along Queen Street North is in keeping with surrounding neighbourhood context and is adjacent to residential towers of 18 to 21 storeys in height to the north and east.

The 15-storey height and westerly 12.5m set back of the towers along the west side of the building is consistent with the *existing* as of right zoning on the site for a 15m tall building. - PLEASE NOTE THAT THIS STATEMENT / INFORMATION IS INCORRECT. THE AS OF RIGHT ZONING PERMITS A 15 STOREY BUILDING THAT IS SET BACK 30.48M FROM THE WEST LOT LINE.

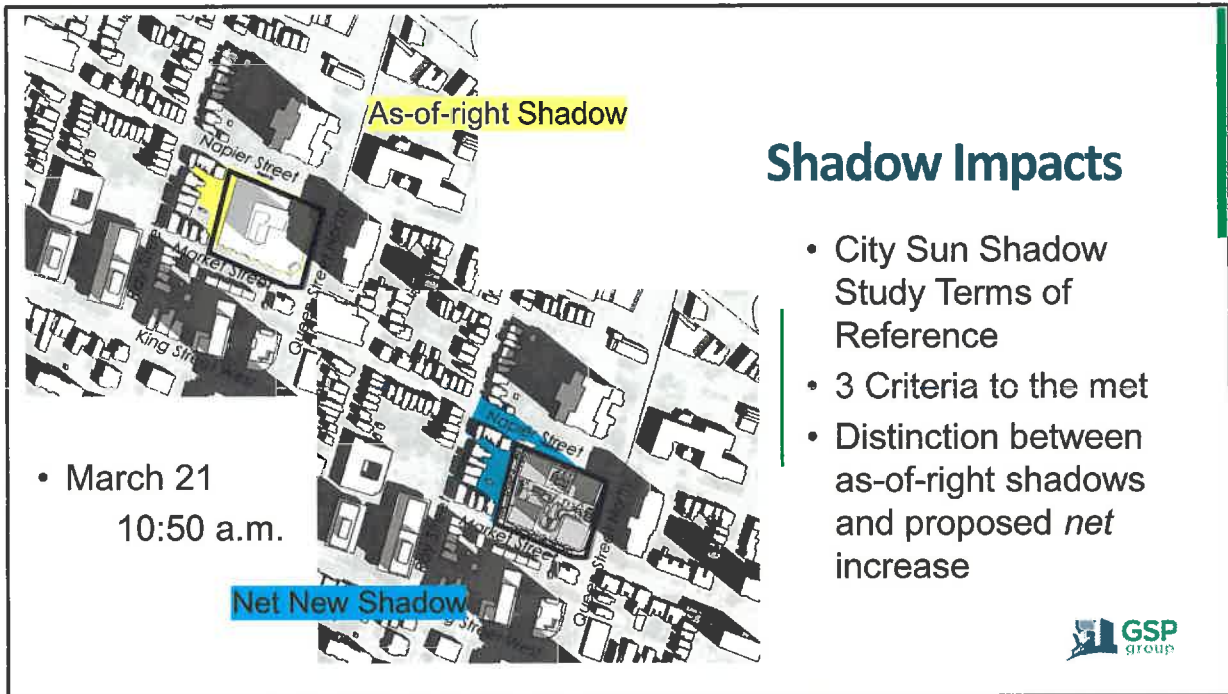
- The 4 towers have a sleek point tower design to reduce shadow and overlook impacts.

- Towers are placed at the corners of the podium to allow for maximum tower separation distance between them as tower separation represents one way to mitigate privacy and overlook concerns between the towers, and allows for natural light into the residential suites
- The 7-storey midrise along Napier is stepped back from the 3-storey podium and its walls are in the same plane as the adjacent towers creating a cohesive design.



The intent of the 45-degree angular plane *guideline* is to create an appropriate transition and minimize shading and over look to adjacent sensitive uses.

- The proposed design is for two 15 storey towers with a 20m building separation and ~7m tower setback from the north and south property lines over a 3-storey podium.
- The 15-storey towers are setback 12.5 m from the western property line where they abut existing low rise residential development.
- Although the towers pierce the angular plane (outside the shaded area on the image in front of you), the area that does not meet the 45-degree guideline represents 58% of the total frontage along the shared property line – that is, 58% of the building does not meet the angular plane guideline, while the remaining 42% of building does.
- Further this 42% includes the 20m building separation creating a mass and void built-form which will allow for sun penetration and reduce overlook by reducing the number of units facing the low rise residential, compared to a slab tower.
- The portion of the towers piercing the angular plane are far and high enough away and would not meaningfully impact privacy and sky views and therefore meet the intent of the Corridor design guidelines.



Following the City's terms of reference for Sun Shadow studies – the City requires 3 criteria to be met during the spring (March 21st) and fall (September 21st) equinox between 10:00 am and 4:00 pm:

1. A minimum of 3 hours sun coverage on public sidewalks, public and private outdoor amenity spaces (e.g., patios, sitting areas, etc..)
2. A minimum of 50% sun coverage on all public plazas, parks and open spaces, school yards and playgrounds; and
3. No new net shadow impacts on the Downtown's key civic gathering spaces

The diagram provided above is an excerpt from the detailed Sun Shadow Study and focuses on the NET shadow impact to the low rise development to the north and west recognizing that a 15-storey building is permitted on this site as of right. The black shadows illustrates the existing shadows cast by existing buildings.

What must be taken into consideration is the as-of-right permitted shadow i.e., the shadow cast by buildings permitted under the current zoning on the Site – and the NET increase in shadow created by the proposed building design.

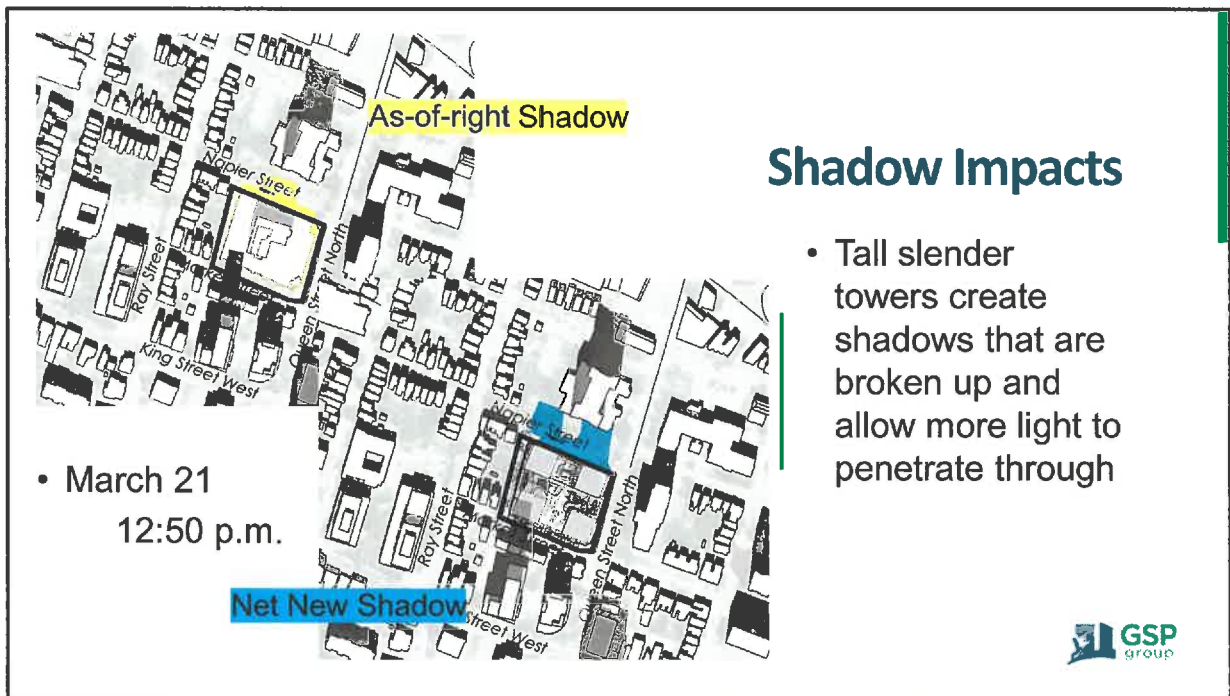
This is where the configuration of the building including towers that are separated from one another – has a bearing on the net shadow created. Specifically, tall, narrow towers create shadows that move more quickly, than slab buildings.

Ray Street - the proposed development successfully mitigates any undue shadow impact for the existing residential development along Ray Street, where a minimum of 5 hours of sun coverage will be available between 10 and 4pm

With respect to Napier Street:

- The proposed development allow for a minimum of 3 hours of sunlight along most of Napier Street but does not meet the criteria immediately north of the proposed development along the street and will have less than 3 hours of sunlight in some areas. However, with any proposed high rise development, and given our geographical location on the northern hemisphere, avoiding casting any shadow onto the Napier street sidewalk would be difficult to achieve.
- It is further noted that the section of Napier street sidewalk with less than 3 hours of sunlight, is flanked by a non-active frontage (surface parking lot) and will have a minimum shadow impact.

the analysis demonstrates that no private outdoor amenity space will have less than 3 hours of sun during the day except a small portion (5%) of the outdoor amenity area at 75 Queen Street north where 2 hours of sunlight will be available.



Shadow Impacts

- Tall slender towers create shadows that are broken up and allow more light to penetrate through

I have illustrated this next time period to illustrate how the configuration of the building and the location and shape of the tall slender towers – has a bearing on the net shadow created. Specifically, tall, narrow towers create shadows that allow more light to penetrate through and generally move more quickly than slab buildings. – you can see how the new net shadow has “fingers” along Napier Street whereas a slab building of the proposed height would cast a solid shadow.

Mitigation Measures: building orientation/massing/step-backs and building separation

Generally, the proposed *location and orientation* of the towers will have the least shadow impact on the sidewalks given the geographic location of the site.

The sleek point tower floor plate of only 600m² as well as the tower placement with the lower towers along the western side adjacent to the low rise development, mitigates shadow impact on the properties along Ray street.

The proposed building *step back* along the podium at level 3, reduces the overall massing along the street edge. Additionally, the tower separation of 20 to 25 metres minimises the shadow impacts within the property and rooftop amenity area.

Next, Dan Bacon from RWDI will address Pedestrian Wind impacts.



Terms of Reference: Pedestrian Level Wind Study for Downtown Hamilton

4.0 What Triggers a Pedestrian Level Wind Study?

Building Height

- A development proposal with a building 20 m in height or more requires a Qualitative Wind Assessment as a minimum. A Quantitative Wind Tunnel Study may be required at the discretion of the Planning and Economic Department.
- A development proposal with a building 20 m in height or more and up to two times the height of surrounding buildings requires a Quantitative Wind Tunnel Study.
- A development proposal with a building 45 m in height or more requires a Quantitative Wind Tunnel Study.

Number of Buildings

- A development proposal with two or more buildings that are 20 m in height or more requires a Quantitative Wind Tunnel Study.

Site Area/Size

- A development proposal with a site area of 3 hectares or more, and a building that is 20 m in height or more, requires a Quantitative Wind Tunnel Study.

5.0 Who should prepare the study?

The Pedestrian Level Wind Study should be prepared by a qualified microclimate specialist. These studies are to be signed and sealed by a Professional Engineer. If a Wind Study is prepared by an individual or company who do not have extensive experience in pedestrian level wind evaluation, an independent peer review may be required at the expense of the proponent.

6.0 Wind Data Collection

6.1 Test Dates

A minimum of 30 years of hourly wind data from John C. Munro Hamilton International Airport should be used and presented on a four season basis as follows:

Summer: Hourly winds occurring the period of May through October.

Winter: Hourly winds occurring the period of November through April.

Appropriate hours of pedestrian usage for a typical project (i.e. 6:00 am-9:00 11:00 pm) should be considered for wind comfort, while data for 24 hours should be used to assess wind safety.

Pedestrian Level Wind Study

Terms of Reference



RWDI

The city provide a specific terms of reference for Pedestrian Level Wind Studies as noted in this slide.

In this instance, a Quantitative Wind Tunnel Study was required to be prepared by a Professional Engineer using 30 years of hourly wind data from John C. Munro Hamilton International Airport.

Pedestrian Level Wind Study:

Wind Tunnel Testing



RWDI

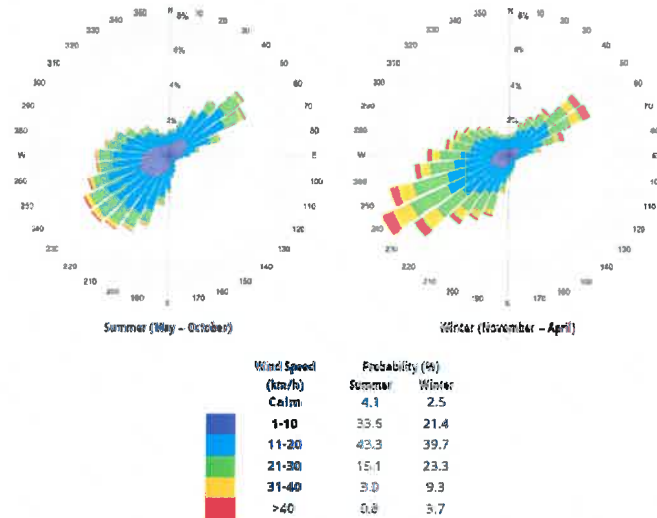
- The objective of the study was to assess the effect of the proposed development on local conditions in pedestrian areas on and around the study site and provide recommendations for minimizing adverse effects, if needed.
- This quantitative assessment was based on wind speed measurements on a scale model of the project and its surroundings in one of RWDI's boundary-layer wind tunnels.
- These measurements were combined with the local wind records and compared to appropriate criteria for gauging wind comfort and safety in pedestrian areas.
- The assessment focused on critical pedestrian areas, including building entrances, public sidewalks and outdoor amenities.
- To assess the wind environment around the proposed project, a 1:400 scale model of the project site and surroundings was constructed for the wind tunnel tests of the following configurations:

Left Image - Existing site with existing surroundings

Right Image - Proposed project with existing surroundings

- The wind tunnel model included all relevant surrounding buildings and topography within an approximately 480 m radius of the study site.
- The wind and turbulence profiles in the atmospheric boundary layer beyond the modelled area were also simulated in RWDI's wind tunnel.
- The wind tunnel model was instrumented with 61 specially designed wind speed sensors to measure mean and gust speeds at a full-scale height of approximately 1.5 m above local grade in pedestrian areas throughout the study site.
- Wind speeds were measured for 36 directions in a 10-degree increments.
- The measurements at each sensor location were recorded in the form of ratios of local mean and gust speeds to the mean wind speed at a reference height above the model.
- The placement of wind measurement locations was based on our experience and understanding of the pedestrian usage for this site and reviewed by design team

Pedestrian Level Wind Study: Meteorological Data



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- Wind statistics recorded at Hamilton International Airport between 1987 and 2017, inclusive, were analyzed for the Summer (May through October) and Winter (November through April) seasons.
- Above image graphically depicts the directional distributions of wind frequencies and speeds for these two seasons.
- Winds from the southwesterly and northeasterly directions are predominant in both the summer and winter, as indicated by the wind roses.
- Strong winds of a mean speed greater than 30 km/h measured at the airport (at an anemometer height of 10 m) occur for 3.8% and 13.0% of the time during the summer and winter seasons, respectively.
- Wind statistics were combined with the wind tunnel data to predict the frequency of occurrence of full-scale wind speeds. The full-scale wind predictions were then compared with the wind criteria for pedestrian comfort and safety.

Pedestrian Level Wind Study: City of Hamilton Criteria

8.0 Pedestrian Level Wind Study Criteria

The criteria to be used for assessment of pedestrian wind conditions have been developed through research and practice. Both mean and gust wind speeds can affect pedestrian comfort, therefore their combined effect is used as the basis of the criteria and defined as a Gust Equivalent Mean (GEM) wind speed. The GEM is defined as the maximum mean wind speed or the gust wind speed divided by 1.05.

A 20% exceedance is used in these criteria to determine the comfort category, which suggests that wind speeds would be comfortable for the corresponding activity at least 80% of the time or four out of five days. Only gust winds are considered in the safety criterion. These criteria for wind forces represent average wind tolerances.

Wind Comfort Criteria

There are four measuring points to evaluate the comfort of the wind speed: sitting, standing, strolling, and walking. These measuring points are to be evaluated at different locations/areas on the development site and immediate adjacent areas to ensure that they meet the criteria. Should a proposed development not be able to meet the comfort evaluation criteria, mitigation measures (e.g. building design, and/or site design measures) are to be included into the design of the building and/or site.

Table 1: Pedestrian Wind Comfort Criteria

Wind Comfort Category	GEM Speed (km/h)	Description
None	≤ 10	Clear or light breeze for outdoor recreation and walking. Some wind may be felt. Pattern without blowing or blowing slightly.
Standing	≤ 14	Good breeze suitable for main building entrances and bus stops.
Strolling	≤ 17	Moderate winds that would be appropriate for window shopping and strolling along a downtown street, plaza, or park.
Walking	≤ 20	Relatively high speeds that can be tolerated if one objective is to walk, run, or cycle without lingering.
Unacceptable	> 20	Strong winds of this magnitude are considered a nuisance for most activities, and wind mitigation measures are recommended.

Notes: (1) Gust Equivalent Mean (GEM) speed = maximum (mean gust speed/ 0.95, and (2) GEM speeds listed above are based on a seasonal exceedance of 20% of the time between 0:00 and 23:00. The criterion has been met if the wind speeds occur at least 80% of the time or four out of five days.

Wind Safety Criteria

Wind gusts will be used to measure the safety of the wind on all test locations. Should a proposed development not be able to meet the wind safety criteria, appropriate mitigation measures (e.g. redesign of the site, reduction in height, etc.) will be required to eliminate the safety issue.

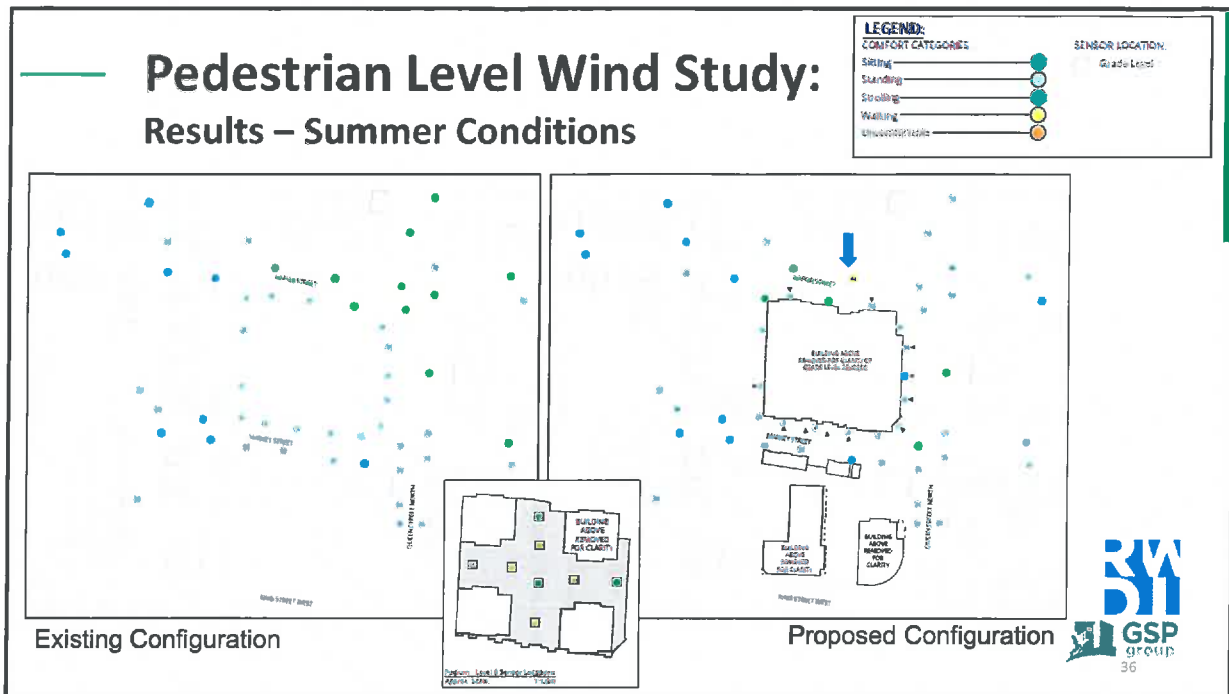
Table 2: Pedestrian Wind Safety Criteria

Wind Safety Criterion	Gust Speed (km/h)	Description
Unacceptable	≥ 30	Excessive gusts that can adversely affect a pedestrian's balance and footing, where mitigation is required.

Note: the OCM is based on an annual exceedance of 9 hours or 0.1% of the time for a 24 hour day.

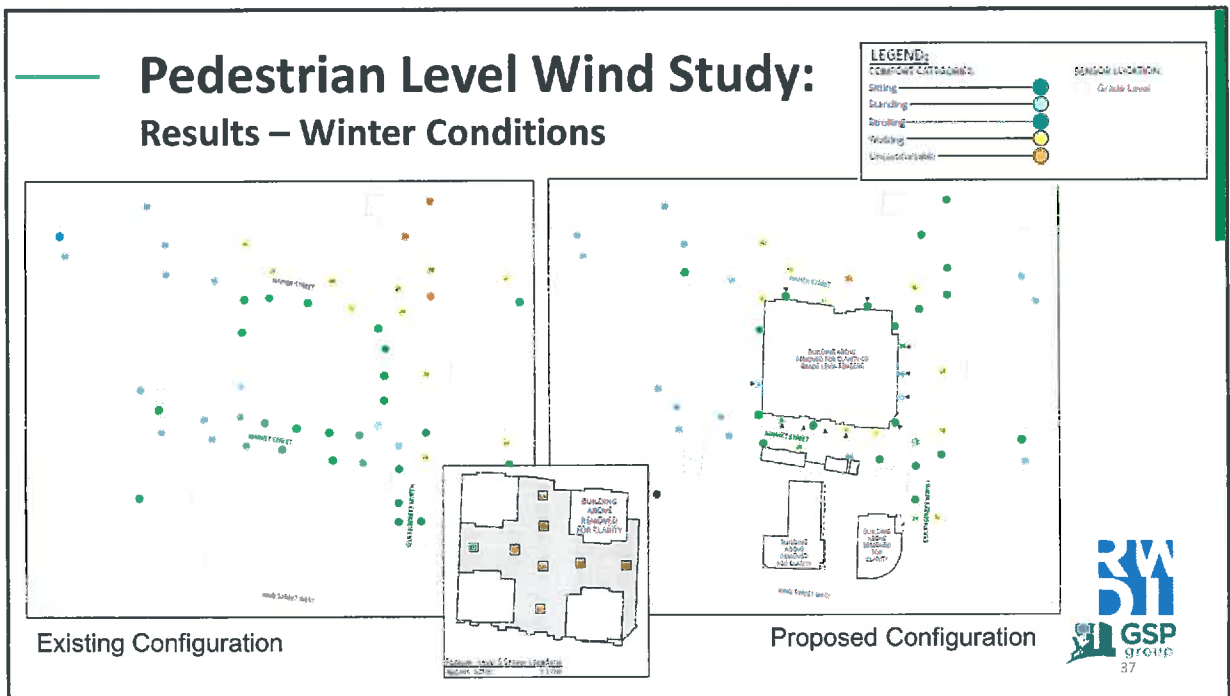


RWDI – Hamilton’s Comfort Criteria from their terms of reference



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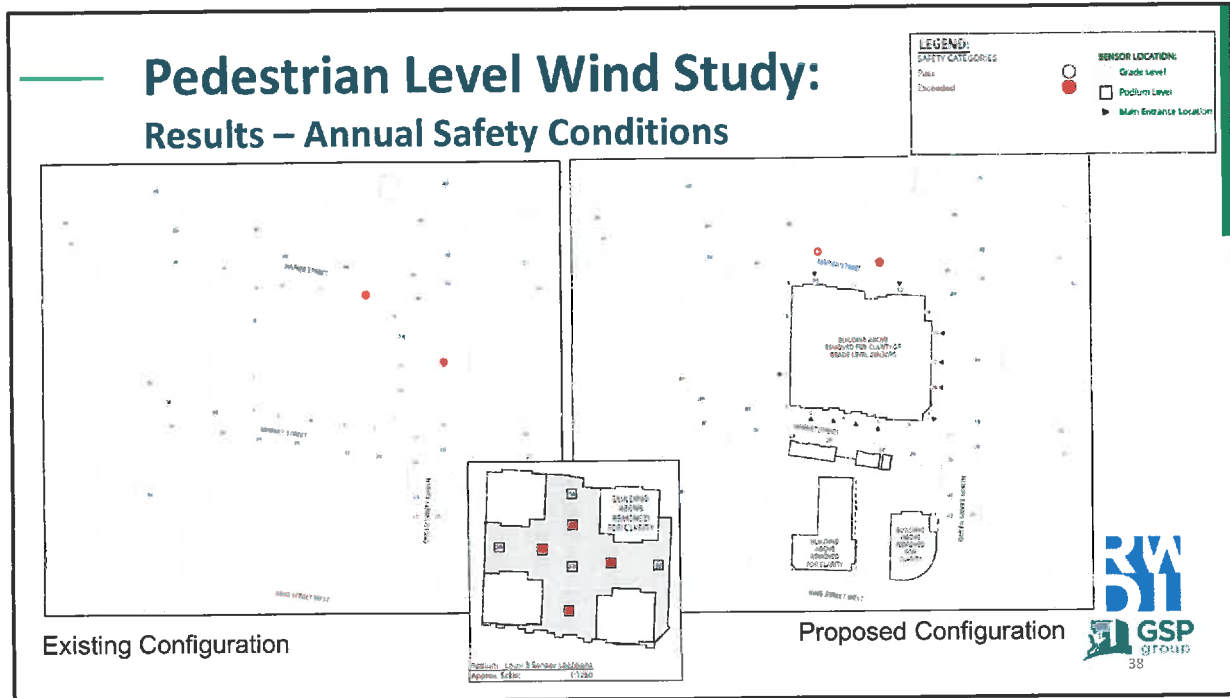
- This figure represents wind conditions on and around the site in the Summer for the existing site (left) and with the proposed development in place (right). The color dots are representative of the color coding in the inset Legend of the comfort categories which is based on the City of Hamilton’s wind criteria in the Terms of Reference (*note: not the same colours as the City – orange=“uncomfortable”*)
- The image to the left shows existing wind conditions on and around the site are for the most part comfortable for standing and sitting with some areas comfortable for strolling along the intersection of Napier St and Queen St, which makes sense based on the taller towers at this intersection.
- With the addition of the proposed development the overall conditions do not change that much except for one area along Napier St. close to the development where there is a slight increase from strolling to walking at location 44.
- Of note the strolling conditions currently along the intersection of Napier and Queen are improved from strolling to standing as a direct result of sheltering from the proposed development.



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- This figure represents wind conditions on and around the site in the Winter for the existing site and with the proposed development in place. As with the previous slide, the color dots are representative of the color coding in the inset Legend of the comfort categories which is based on the City of Hamilton's wind criteria in the Terms of Reference.
- The image to the left shows that during the winter months the wind speeds across the site increase due to stronger winter winds. The results do indicate windier conditions occur at the intersection of Napier St. and Queen and are increased to walking and uncomfortable around the intersection and north along Queen St.
- With the addition of the proposed development the overall conditions do not change that much, but comfort categories do shift in certain areas with the addition of the development.
- The wind conditions at and close to the intersection of Napier and Queen St. are improved from being uncomfortable in the existing conditions to strolling with the proposed development in place.
- Other areas down wind of the development also see improvements from the existing wind conditions.
- A couple of locations showing accelerated winds, like the two uncomfortable

conditions at grade and locations on the podium are being addressed through mitigation collaboration with the design team and RWDI.



- This figure represents Annual Safety Conditions on the site for the existing conditions (left) and the proposed conditions (right), which occur predominantly during the winter months.
- The image to the left shows in the existing conditions there are two areas that currently experience safety concerns close to the site. With the addition of the proposed development these two locations are eliminated, but two new locations are created. These areas are being addressed through mitigation discussions with the team and will be incorporated as the design progresses.
- The inset is the above grade amenity area. - This is the windiest area on the site and RWDI is currently working with the design team to develop mitigation solutions to reduce the winds on the podium in order to create calmer wind conditions.
- Next, Adam Makarewicz from Paradigm will address traffic and parking impacts.

Traffic

- Traffic calming to deter traffic infiltration
- Modifications to signal timing to increase traffic flow time along King Street

Paradigm

A traffic impact study for the proposed development has been completed. In terms of operations along the neighbourhood streets, the local area interactions along Napier Street, Market Street and Ray Street North presently operate within the acceptable range and are expected to do so in the future with the construction of the proposed development.

It is also recognized that a portion of the development traffic could use the neighbourhood roadways. As a result, the Applicant is working with the City to implement traffic calming improvements along the neighbourhood streets. Preliminary discussions with the City indicate the need for speed cushions along Ray Street North to slow traffic and act as a deterrent to traffic infiltration. Additionally, measures could also include providing additional speed cushions along Napier Street. The preferred locations will be reviewed and discussed with the City.

At King Street West and Queen Street North, the changes to traffic circulation with the two-way conversion of Queen Street and future implementation of the LRT will provide for reduced capacity at this intersection as several lanes will be repurposed.

As a result, the signal timings at King Street and Queen Street will need to be modified to increase green time to traffic flows along King Street. The findings within the traffic study are consistent with the Environmental Project report for the King Street LRT project.

Use	Minimum Required Parking (05-200)	Minimum Required Parking (05-200-Downtown)	Proposed Supply
Commercial	0	0	369
Residential	450.7	341.4	

Parking

- New parking standards of Hamilton Zoning By-law 05-200

4.2.4.1 *Transportation demand management* measures may include:

- provision of *active transportation* features including secure bicycle storage facilities and pedestrian and cycling access to the road network facilities;
- supporting transit through reduced parking standards for some land uses where appropriate and making provisions for car-sharing spaces through the site plan process where feasible and appropriate; and.



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Urban Hamilton Official Plan
February 2021



Paradigm

As the site's location provides a robust pedestrian-oriented environment and connects to various critical destinations within Hamilton, one of the requested modifications to the Zoning By-law is to have a parking supply consistent with the downtown requirements. The level of transit accessibility provided in the area offers good non-automobile travel opportunities and reduces the need to use a car to access the Site. In addition to local transit services, higher-order transit is also expected to be available through the future LRT along King Street, providing excellent non-automobile travel opportunities.

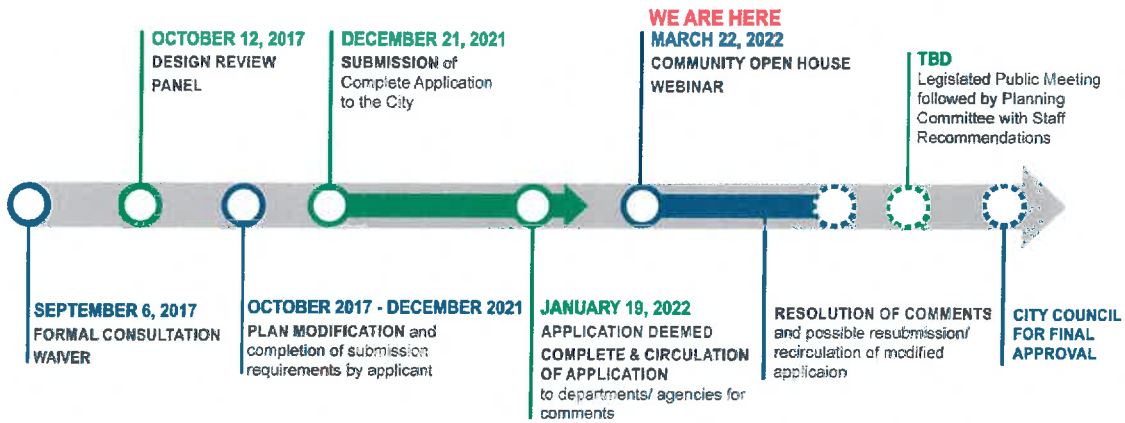
As a critical transportation objective in intensification, areas are to transform the primary travel mode to sustainable options (walking, cycling and transit); the provision of the LRT is expected to transform the area further to be less reliant on automobile use through a shift in the mode of travel. A stop for the rapid transit line is proposed at King Street East and Queen Street, a 5-minute walk from the Site. As the surrounding built form, transportation network, and amenities are characteristics

similar to a "Downtown Zone,"; the use of the downtown requirements are appropriate for the proposed development.

The provision of parking for urban development has historically relied upon "predict and provide" approaches requiring a large portion of land or building area to be devoted to parking that encourages single-occupant vehicle travel. The parking supply was arrived at based on a review of the transportation characteristics, policy framework and industry-standard parking data which supports the proposed supply. In addition, the Applicant will be implementing transportation demand management measures such as unbundled parking which is a critical measure as it provides significant encouragement to residents to explore alternative sustainable travel modes that are made more enticing given the fact the parking will be at a premium in terms of cost and provided on a limited basis.

Back to you Brenda.....

Planning Process to Date



- Slide is self explanatory – no notes provided.

Questions / Comments



Project Website:
<https://www.gspgroup.ca/active-projects/market-queen-napier-redevelopment/>

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