

APPENDIX A:

BEST PRACTICES - HEALTH DISTRICTS



Best Practices Health Districts

FINAL REPORT | SEPTEMBER 2019

Sajecki →
Planning

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Executive Summary

This report documents best practices for the development of health science districts in North America. These specialized health-focused clusters aim to create vibrant and transit-supportive mixed use communities. Focused on the lands surrounding the new Oakville Trafalgar Memorial Hospital in the north western quadrant of Town, the Hospital District Study (formerly known as the Health Oriented Mixed Use Node or HOMUN) seeks to develop an Area-Specific Plan highlighting the objectives, development concept, land use policies and urban design directions for the area.

In efforts to strengthen Ontario's life sciences sector and attract experienced talent, other nearby municipalities such as Mississauga, Vaughan, Markham and Newmarket are investing in the development of specialized nodes centered around hospitals. Developments in this sector support a collaborative ecosystem and contribute to the creation of competitive economic environments.

This report provides direction to achieve the goals of a sustainable health-focused mixed use Hospital District in Oakville through case studies from New York, Louisiana, Massachusetts, British Columbia, and Ontario.

Four key takeaways for the development of successful health districts include the following:

- 1. Land use balance:** Establish a balanced mix of land uses and ensure that intensification is of an appropriate scale and built form, including flexible approaches for the provision of parking. For example, the Life Sciences Corridor in Massachusetts adopted a 60/40 split between retail and residential uses;
- 2. Green connections with pedestrian priority:** Promote walking and cycling through a pedestrian-oriented street character (e.g., wide sidewalks, active building frontages, benches, dedicated cycling facilities) and connections (including mid-block connections) to parks through green corridors (e.g., cycling lanes, planting);
- 3. Cohesive branding:** Establish an identity for the community through cohesive branding, and promote placemaking and visual connectivity through wayfinding and signage at key locations such as major intersections and around the hospital building; and
- 4. Strategic partnerships:** Adopt public-private partnerships and initiatives designed to facilitate high levels of collaboration between the municipalities, development industry and universities/academia.

1.0

INTRODUCTION

Introduction

In the context of aging populations and growing demands for healthcare services, forward-thinking healthcare institutions are collaborating with provincial, regional and municipal governments to provide place-based health nodes and districts. Building upon the concept of complete communities and supported by scientific research on how the built environment influences health outcomes, health districts create opportunities for cost effective and high-quality care, while enabling research, innovation and healthy living all in one place.

On the rise in municipalities across North America, health districts are unique mixed use communities that accommodate healthcare facilities, research and offices within a mix of land uses often including commercial, institutional, residential and parks and open spaces.

In addition to this introduction, this report includes the following sections:

- Section 2.0: Study justification, background and supporting theoretical framework
- Section 3.0: Overview of local market and case studies profiling North American health districts
- Section 4.0: Brief summary of best practices for health districts and concluding remarks



2.0

CONTEXT

Study Justification and Background

The Town of Oakville is located in the Greater Toronto and Hamilton Area (GTHA), with a population of 193,832 residents (2016 Census, Statistics Canada). As part of its ongoing Official Plan Review, the Town is conducting a comprehensive land use study for a Hospital District located in north Oakville, north of Dundas Street at Third Line and centered around the Oakville Trafalgar Memorial Hospital (see **Figures 1-3**).

The study area is identified within the Employment District designation in the North Oakville West Secondary Plan (NOWSP). In September 2017, Council adopted a town-wide Urban Structure as part of its ongoing Official Plan Review (Official Plan Amendment No. 15) which identifies the Hospital District as a “Node for Further Study”.

Previously referred to as the Health Oriented Mixed Use Node (HOMUN) in earlier Town of Oakville staff reports and studies, the Hospital District land use study will take into consideration the existing policy framework within the North Oakville West Secondary Plan in addition to other emerging policy directions, regulations and guidelines. The North Oakville West Secondary Plan states that the Hospital District will incorporate:

“a hospital and may also include research and development facilities, medical and other offices, laboratories, clinics, supportive housing, long term care facilities, rehabilitation facilities, and other similar uses including retail and service commercial facilities related to the permitted uses”.

The study will establish an Area Specific Plan that will include a range of mixed use development opportunities compatible with employment uses, enabling the creation of a complete live-work community. The Area Specific Plan will define the function of the Hospital District within the context of the Town and be used to guide future growth and change for the area. Specifically, the study will consider building heights and densities, employment and population targets, development concepts, land use policies and urban design direction, and tools for successful implementation.

Completed and planned developments located within the Hospital District include the following:

- Oakville Trafalgar Memorial Hospital (opened in 2015);
- ErinoakKids Centre for Treatment and Development (opened in 2017);
- All Seniors Care (approved in December 2017);
- Region of Halton Courthouse (Statutory Public Meeting April 2018); and
- Health Sciences and Tech District application (in circulation).



Figure 1: Aerial Photo - Hospital District location

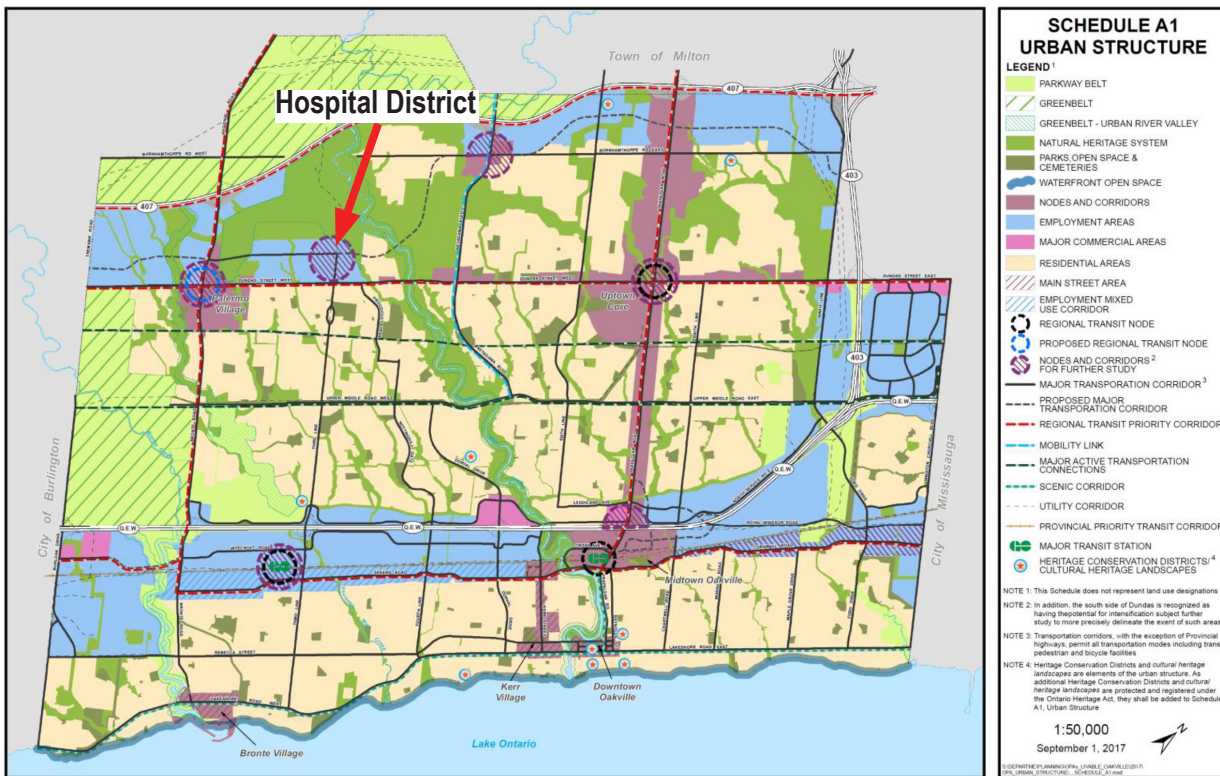


Figure 2: OPA 15, Schedule A1 - Urban Structure (Nodes and Corridors for Further Study)



Figure 3: Land Use Plan (Figure NOW 2) - North Oakville West Secondary Plan

3.0

BEST PRACTICES

Overview

Specialized nodes such as health districts are often framed as cluster developments. Coined by Harvard Professor Michael Porter in the late 1990s, the cluster theory explains the ways in which innovation districts represent a physical manifestation of regional competitiveness. As a general definition, innovation districts consist of institutions and companies that collaborate with research incubators and start-ups. Such districts are usually transit-accessible, mixed use and have a compact urban structure.

Relevant to Oakville's Hospital District, cluster development is playing an increasingly important role in the industries of healthcare and technology. Driven by specialization and innovation, businesses and institutions locate in close proximity to better exchange and share specialized knowledge and resources, ultimately benefiting from the clustering of economic activity.

The following section provides a snapshot of the local market for healthcare related projects, in addition to an overview of recently planned health districts in various North American cities and regions including Buffalo, the Greater Boston Region, Baton Rouge, Surrey and Hamilton. While the case studies differ in context and scope, all examples illustrate key components of health districts. These specialized clusters facilitate collaboration between clinical and research facilities, whereby academics, entrepreneurs, developers, start-up companies as well as local and international stakeholders forge partnerships to create vibrant mixed use hubs that drive innovation and promote wellness. Each case study includes accompanying plan(s), photos, and/or illustration(s).

3.1 Local Market

Hospital projects are on the rise throughout the Province of Ontario. As part of BuildON's infrastructure plan, the Province is investing in new hospitals, community care and long-term care homes. Specifically, the provision of 30+ hospitals and 300+ long-term care facilities over the course of 10 years will ensure better health care for Ontarians.

Several progressive healthcare-related infrastructure projects in nearby municipalities include the following:

- The **City of Mississauga** is the first municipality in Canada to develop a Life Sciences Cluster Strategy. Adopted in 2017, the five-year strategy outlines high-level priorities and specific actions to build the second largest cluster of its kind in the country (by employment). Mississauga is also home to Trillium Health Partners — an integrated hospital network consisting of three main sites: Credit Valley Hospital, Mississauga Hospital and Queensway Health Centre.
- The **City of Vaughan** has established a Healthcare Centre Precinct Plan to guide the development of the Mackenzie Vaughan Hospital and adjacent City-owned lands. The Plan includes a variety of healthcare-related uses such as medical and dental offices, research and laboratory facilities, rehabilitation and long-term care facilities, educational facilities, etc. Currently under construction, the Mackenzie Vaughan Hospital is planned to open in late-2020.
- The **City of Markham** has released a new Strategic Plan (2019-2022) for the Markham Stouffville Hospital. The hospital's updated vision seeks to establish innovative ways to deliver seamless and integrated care to the community beyond the physical hospital walls.
- The **Town of Newmarket** is home to a health tech cluster centered around the Southlake Regional Health Centre — a regional full-service hospital and research and teaching facility. The innovative Health Centre includes CreateIT Now — a healthcare-focused business incubator established in 2015 through Southlake's research and innovation team in partnership with the Town of Newmarket, York Region, Seneca College, York University and ventureLAB.

Floor Area Ratio (FAR):
The ratio of a building's total floor area (gross floor area) to the total area of the lot on which the building stands

3.2 Case Studies

The following section includes case studies of planned health and technology districts in Buffalo, New York; the Greater Boston Region, Massachusetts; Baton Rouge, Louisiana; Surrey, British Columbia; and Hamilton, Ontario. For ease of comparison between case studies, Table A provides a summary of key statistics based on available data at the time of report completion.



Oakville Trafalgar Memorial Hospital

Cities/Areas	Characteristics				
	Built/ Unbuilt	Size	Densities and/or Heights	Land Uses	New Developments
Buffalo Niagara Medical Campus, New York	Built/ Ongoing	120-acre campus	Allowable heights up to six storeys (16 storeys with special review). Objective to achieve over 1.5 FAR across campus	Hospital and related medical, university, research facilities, office, retail, hotel and residential uses	Trico complex. Mid-rise mixed use building (hotel, residential, retail, office uses), completion in 2021
Life Sciences Corridor, Massachusetts	Built/ Ongoing	Five cities and > 730 companies	Kendall Square <u>Densities:</u> 4.0 - 8.0 FAR (8.0 FAR for office and biotechnology manufacturing uses) <u>Heights:</u> 250 ft (23 storeys) - 350 ft (32 storeys)*with exceptions	Hospital and related medical, university, office, entertainment, retail, commercial, hotel, residential uses (incl. middle income housing units) and green space	Innovation Square Phase II (Seaport neighbourhood). Mixed use building with 260,000 sq.ft. of lab, amenity, retail and green space in construction, and a proposed 1 million sq.ft. of office, lab and multifamily residential
Baton Rouge Health District, Louisiana	Built/ Ongoing	1,100 acres	Data unavailable	Hospital and related medical, office, commercial, hotel, residential, institutional, and light industrial uses	Element by Westin Hotel. Five-storey 124-room hotel
Health and Technology District, British Columbia (Surrey)	Built/ Ongoing	Eight mixed use buildings with approx. 1.5 million sq.ft. of floor area (at full build-out)	2.5 - 3.5 FAR Projected built-out potential of approx. 10,000 people and over 13,500 jobs	Hospital and related medical, university, office, open space, retail, commercial, entertainment, and residential uses	City Centre 3. Mixed use 10-storey development, 130,000 sq.ft., completion in 2021
McMaster Innovation Park, Ontario (Hamilton)	Built	1.6 million sq.ft. of building space (building footprints of 15,000-30,000 sq.ft.)	Mid-rise built form (four to eight storeys) and additional heights encouraged in landmark locations	Predominantly research and academic facilities with some retail and hotel / conference uses	14.5-acre property acquired by Metrolinx for the future Hamilton LRT Operations, Maintenance and Storage Facility

Sources: Surrey City Centre Plan Update (2017), McMaster Innovation Park Master Plan Update (2008), City of Buffalo Land Use Plan (2016), Master Plan for the Baton Rouge Health District (2015), MXD Infill Development Concept Plan (2019)

Buffalo Niagara Medical Campus (BNMC), New York

Date

- Initiation of the BNMC in 2002 and first Master Plan developed in 2003

Context

- 120-acre campus. Includes five (5) institutions: hospital, cancer research and treatment centre, university, independent research institute, and large medical practice
- 9 million square feet and 16,000 employees (as of April 2019)

Objectives

To create a collaborative medical campus that drives innovation and prioritizes job growth, while promoting wellness and economic development for the Buffalo Niagara Region

Partnerships

- The Institutions own most of the land, while the BNMC functions like a BIA to help facilitate projects (also own some land)
- Each Institution has two (2) representatives on the BNMC Board

Challenges & Opportunities

Challenges

- A need for hotels for visitors and patients, and a need for housing opportunities for both residents and students
- A lack of gathering spaces to create a sense of community, and a lack of medical retail spaces and general retail needs

Opportunities

- Old brewery converted into residential spaces through private sector funding
- Ellicott Street (north-south) as a central internal corridor and focal point for the campus

Implementation & Conclusions

- The Transportation Management Association created by the BNMC aims to address and decrease parking demand across the campus
- Incorporate placemaking features throughout the campus (e.g., food trucks and indoor and outdoor recreational programming)
- Pilot new technology (e.g., wind/solar lighting in parking lots)
- Leverage the central location of Ellicott Street and Park to create a common identity and define the BNMC's character as a cohesive campus, providing a strong north-south connection (see **Figure 4**)
- Adopt the new Buffalo Green Zoning Code which promotes public transit and seeks to reduce dependency on private automobiles, and encourages an appropriate mix of uses in and around the campus
- Establish a cohesive brand for the campus through engaging graphics and signage (e.g., wayfinding)

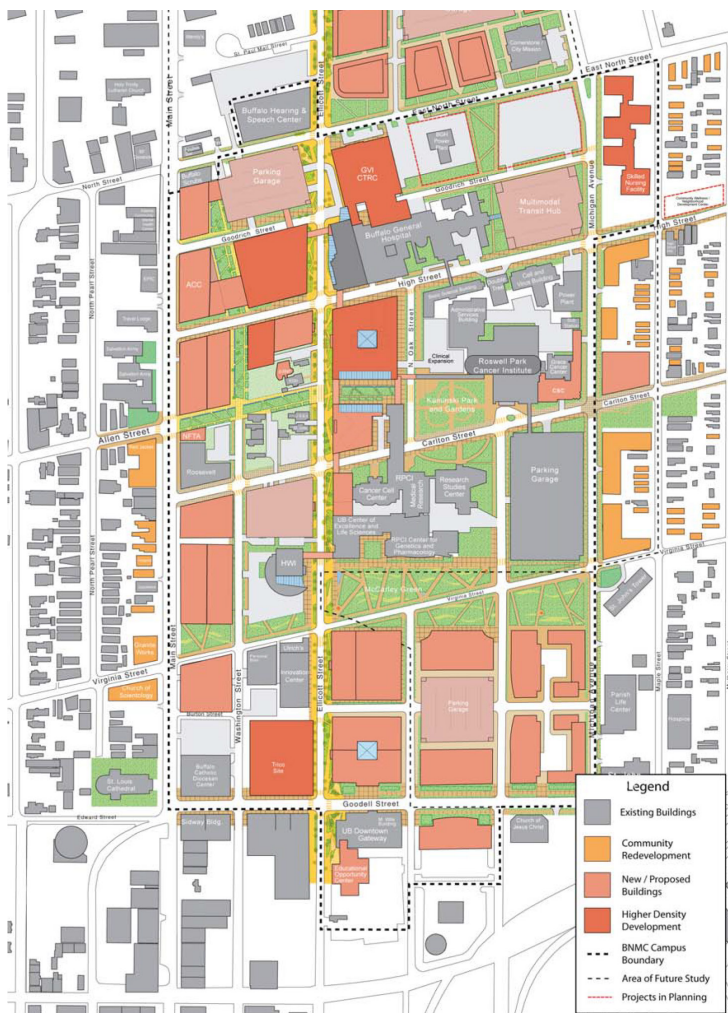


Figure 4: 2010 BNMC Master Plan Update



*In addition to six-week training programs for start-ups and companies, the **MLSC** offers a tax incentive program known as “Angel Tax Credit” (20% tax credit/investment).*

Life Sciences Corridor, Massachusetts

Date

- Initiated in 2014

Context

- Corridor includes five cities in the Greater Boston Region: Somerville, Cambridge, Boston, Quincy, and Braintree
- 22.7 million square feet of research & development and lab space (existing, planned or under construction)
- The world’s largest cluster of life science and biotech companies, with over 80 colleges and universities

Objective

To strengthen the Greater Boston Area’s health and life sciences ecosystem with the goal of retaining existing businesses, attracting businesses from outside the Region, and encouraging collaboration among institutions and universities. The Life Sciences Corridor has a specific focus on Transit Oriented Development (TOD), promoting mixed use developments (residential and commercial) with access to public transit

Partnerships

- 10-year State funding initiative of \$1 billion (2008)
- Creation of the Massachusetts Life Sciences Cluster (MLSC) as the Corridor’s economic development and investment agency
- Municipal government partnership between the cities of Boston, Cambridge, Quincy, Somerville and Braintree
- Direct partnerships between universities and municipalities (e.g., the MIT office works with the City of Cambridge)
- Kendall Square Association has a membership of 180 and holds placemaking events and workshops

Challenges & Opportunities

Challenges

- A lack of retail uses and residential developments
- Traffic from Highway 128
- A need for a balanced diversification of companies (e.g., half life science, half technology)

Opportunities

- Served by the Massachusetts Bay Transit Authority (MBTA) Red Line subway, with 20 stops between the five cities
- Collaboration between Universities:
 - Harvard and MIT in Cambridge (key developments include LabCentral Pfizer and Kendall Square MIT’s Koch Institute)
 - Tufts University of Medicine and Boston University’s School of Medicine, including the South Boston Waterfront District (District Hall and GE Headquarters provide a mix of opportunities for tech, biotech and design communities)
- Braintree offers a modern suburban community to work, live and play

Implementation & Conclusions

- Incorporate an appropriate mix of uses to support the vitality of the Corridor, including housing, commercial and retail uses (in addition to existing institutional uses)
- Developments utilizing infill gross floor area are subject to affordable housing requirements in the Cambridge zoning ordinance
- Master plan approved for large mixed use development in Somerville (1.5 million sq.ft. mixed use development on 2.5 acres, including 60% commercial and 40% residential space)
- The Kendall Square Initiative will include six new buildings with 1.8 million square feet of offices, retail, and housing (expected completion in early 2020)
- Implementation of open spaces above parking garages, cycling infrastructure, smart city technology, pedestrian-friendly mid-block connections, wayfinding and public art, outdoor amenities for residents and workers (see **photos**)
- Since 2008, the State funding initiative (MLSC) has assisted 115 companies, allowing Massachusetts to have the fourth highest employment in the country



*The City-Parish seeks to add **UDDs** to the zoning code. These Districts would establish development requirements that prioritize the public realm and walkability.*

Baton Rouge Health District (BRHD), Louisiana

Date

- Approved by Council in 2011 and Master Plan Study initiated in 2013

Context

- 1,100 acres in South Baton Rouge
- Existing auto-oriented medical corridor, mostly zoned as heavy commercial (C2) and low rise residential
- In 2013 Perkins+Will developed a master plan for the area identified as the South Baton Rouge Medical District

Objective

To transform a congested, auto-oriented medical corridor into a vibrant and cohesive health district that promotes healthy living through pedestrian-friendly streets, an appropriate mix of uses, and active transportation amenities

Partnerships

- BRHD is an initiative of FuturEBR, the East Baton Rouge Parish's Master Plan (approved by Metro Council in 2011)
- Coalition of healthcare, municipal, regional, national, academic and research partners

Challenges & Opportunities

Challenges

- Vast amounts of surface parking and low-density office parks
- A lack of safe sidewalks and crosswalks and congestion on arterial roads

Opportunities

- Variety of underutilized natural open spaces
- Connections between the Health District and the existing open spaces (e.g., linear parks, active transportation trails)
- Train station (opportunity for multi-modal transit centre)

Implementation & Conclusions

Informed by the Master Plan findings, a series of action-oriented objectives were developed to guide development within the District:

1. Create connections for efficient circulation and access:
 - Add rail crossings and develop a street framework plan (see **Figures 5-6**), and improve safety at intersections (e.g., align streets and pathways)
2. Enable people to walk, cycle, and use transit:
 - Establish appropriate densities that are conducive to clustering of activities and diverse land uses

- Ensure that developments are located within a 5-10 minute walk from transit and develop a parking management strategy that prioritizes transit use
3. Connect the District to parks and open spaces:
- Leverage the District's natural areas as assets (e.g., health benefits of walking trails and green spaces)
 - Create the Health Loop Trail (active transit 7.4 km trail that loops around the District)
4. Promote balanced and diverse development:
- Utilize Urban Design Districts (UDD) to regulate built form for mixed use development and promote parcel consolidation



Figure 5: Local Streets - Proposed BHRD Street Typologies

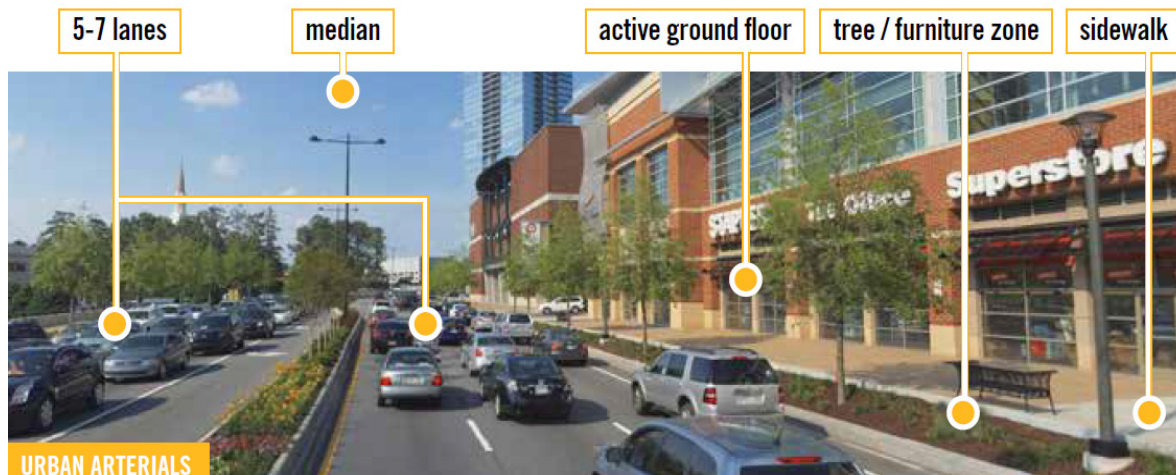


Figure 6: Urban Arterials - Proposed BHRD Street Typologies

Health and Technology District, British Columbia (Surrey)

Date

- Initiated in 2012

Context

- Located across the Surrey Memorial Hospital, near SkyTrain King George Station and adjacent to Simon Fraser University
- Innovation Boulevard is a provincial initiative characterized by a cluster of over 180 universities, health tech companies, doctors and healthcare centres

Objective

To create a collaborative and innovative technology and healthcare cluster with the support of multinational and start-up companies, international partners, scientists, as well as clinical and research facilities. The District will include mixed use residential and supportive housing

Partnerships

- Master Plan development of eight “tech” buildings, led by the Lark Group
- Partnership between the City of Surrey, Innovation Boulevard industries, Fraser Health, and developers

Challenges & Opportunities

Challenges

- A lack of mixed use (residential) developments

Opportunities

- Large amounts of developable land and influx of workforce with specialized skills
- One third of Surrey’s population is youth (opportunity to accommodate the workforce of the future)
- Integrate existing supportive housing development within the District’s new fabric
- Future planned LRT and 96 Ave Station
- Redevelopment potential on surface parking lots

Implementation & Conclusions

- Plans for an underground high-capacity fiber optic network to support the District
- High tech office buildings will include six-storey podiums and up to 12-storey towers above (see **photos**)
- Mixed use development will consider residential uses in addition to offices, active retail, entertainment, etc.
- Upon completion, the District will contain over 1.5 million square feet and 15,000 jobs, contributing \$1.1 billion annually to British Columbia’s economy



City Centre 1 (completed)



City Centre 3 (2021 completion)

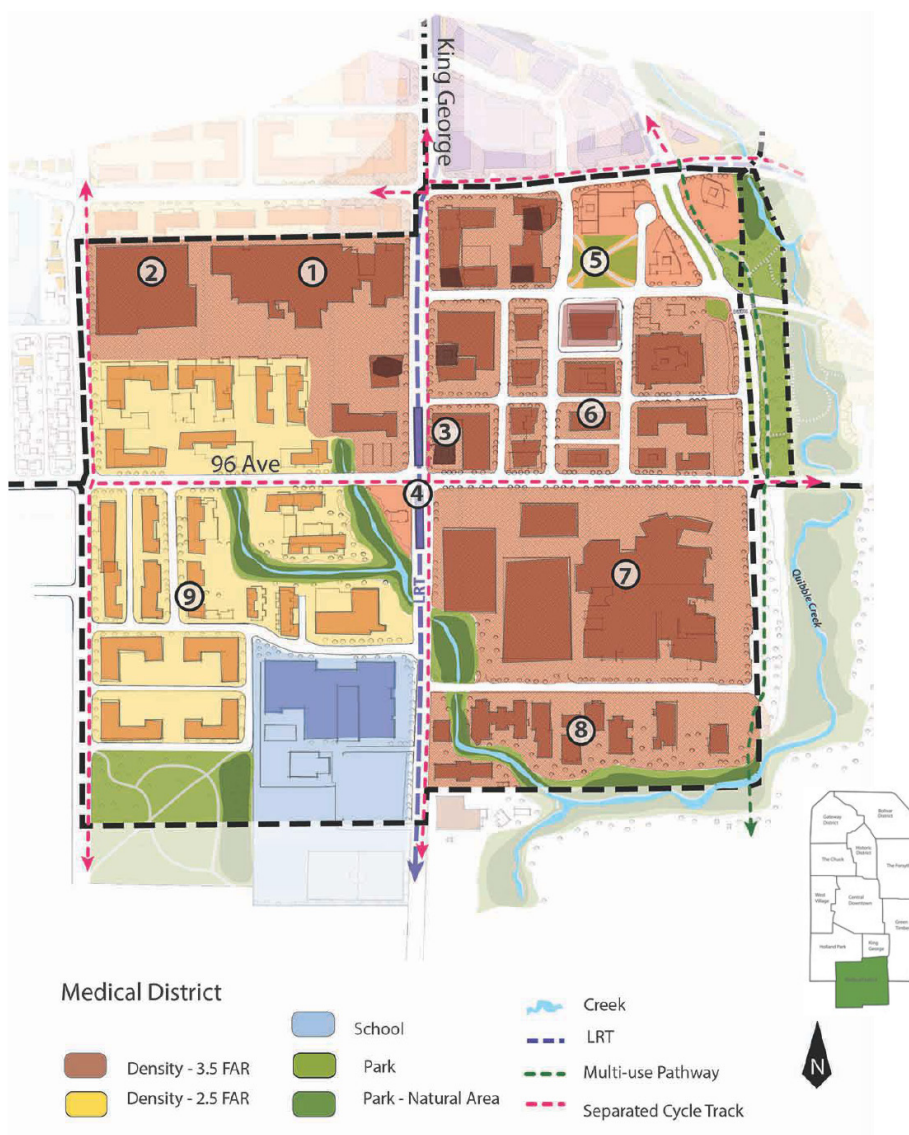


Figure 7: Medical District - Surrey City Centre Plan (2017)

McMaster Innovation Park (MIP), Ontario (Hamilton)

Date

- Initiated in 2005

Context

- Brownfield redevelopment project, 2 km from McMaster University
- 1.6 million square feet of building space (building footprints of 15,000-30,000 square feet)
- Officially opened in 2009, with the opening of the Atrium
- Aims to accommodate 3,000 workers and students, and 1.7 million square feet of office, research and amenity space

Objective

To create a district that is internationally recognized as a thriving innovation hub, while bridging the gap between research and industry. The MIP intends to be a 24/7 complete community providing expertise in advanced materials and manufacturing, biotechnology and nanotechnology

Partnerships

- Collaboration between the City of Hamilton, McMaster University, private sector stakeholders, and all levels of government

Challenges & Opportunities

Challenges

- Auto-oriented, industrial area with large surface parking and building parcels
- A lack of community facilities and services, residential uses and retail establishments

Opportunities

- Highway 403 frontage and elevations provide views to the MIP
- Transform Longwood Road into a vibrant major street which can serve as the main access point into the MIP
- Create local gateways along streets and bridges
- Establish connections to adjacent neighbourhoods, including active transportation trails
- Adopt sustainable design initiatives (e.g., LEED certified buildings, linear wetlands, ponds, greenroofs, etc.)
- Consider short-term accommodation for visiting scholars and researchers

Implementation & Conclusions

- Completed developments: Atrium; CanmetMATERIALS; McMaster Automotive Resource Centre
- Future developments: Biomedical Engineering and Advanced Manufacturing (BEAM) Centre; Emerging Technology Centre

4.0

CONCLUSION

Conclusion

Although the case studies outlined in this report differ in context and scope, common characteristics and objectives for health districts can inform the successful development of Oakville's Hospital District into a vibrant and sustainable mixed use community.

Key learnings include the following:

1. **Mix of Uses:** Establish a balance between land uses (e.g., adopt residential and/or retail strategies to ensure that desired targets are achieved), and ensure that intensification is of an appropriate scale and built form. For example, the Life Sciences Corridor in Massachusetts adopted a 60/40 split between retail and residential uses;
2. **Cohesive Branding:** Establish an identity for the district through cohesive branding, and promote placemaking and visual connectivity through wayfinding and signage at key locations (e.g., focal areas and major destinations);
3. **Strategic Partnerships:** Adopt public-private partnerships and initiatives designed to facilitate high levels of collaboration between government, industry and academia;
4. **Pedestrian Priority:** Promote walking and cycling through a pedestrian-oriented street character (e.g., wide sidewalks, active building frontages, benches, dedicated cycling facilities);
5. **Regulatory Framework (Zoning):** Implement district specific zoning regulations that address the urban design and character of the area while ensuring flexibility in terms of future uses;
6. **Connectivity and Permeability:** Ensure permeability within the district through a compact urban form and mid-block connections, active transportation trails, connections to adjacent residential neighbourhoods and developments, etc.;
7. **Environmental Sustainability:** Promote environmental resiliency through sustainable building materials, low-impact development practices and flexible adaptive reuse strategies (e.g., conversion of surface parking lots for events and programming, stormwater ponds, permeable paving, etc.);
8. **Safe Mobility:** Establish a street hierarchy in order to ensure the connectivity of the street network and safe barrier free accessibility throughout;
9. **Green Connections:** Create connections to parks and public spaces through green corridors (e.g., planting, cycling lanes, active street frontages); and
10. **Parking Management:** Implement a robust parking management strategy that prioritizes safety, efficiency and flexibility (e.g., shared parking agreements, flexible in parking structures, clear signage, etc.).

5.0

APPENDIX

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