



July 16, 2018

Mayor Dilkens
Windsor City Council
Members of the Planning, Heritage & Economic Development Standing Committee (PHED)
350 City Hall Square West, Room 530
Windsor, Ontario
N9A 6S1

Re: WRSA Report to the Joint Meeting of the Planning, Heritage & Economic Development Standing Committee and Windsor City Council, scheduled for August 13, 2018, to address the OFFICIAL PLAN AMENDMENT and ZONING BY-LAW AMENDMENT submitted by Windsor Regional Hospital

Dear, Mayor Dilkens, Windsor City Council and Members of the PHED,

The **Windsor Region Society of Architects (WRSA)** is one of thirteen local chapters of the Ontario Association of Architects (OAA); a self-regulating organization governed by the Architects Act, which is a statute of the Government of Ontario. The Association is dedicated to promoting and increasing the knowledge, skill and proficiency of its members, and administering the Architects Act, in order that the public interest may be served and protected. As a regional chapter of the OAA, the WRSA provides opportunities for dialogue between local architects and the wider architectural community. The Societies work to raise the awareness, appreciation, and understanding of architecture within their communities.

The WRSA submits the attached report for consideration at the Joint Meeting of the Planning, Heritage & Economic Development Standing Committee and Windsor City Council. The location of the proposed Mega-Hospital is one of the most critical planning issues this city will undertake, impacting the region's environmental, social, and economic patterns for generations to come. The WRSA is an organization comprised of local Architects and allied professionals, who are uniquely qualified and positioned to provide an unbiased analysis, to assist in the consideration of the proposed site. Due to the influence of such a momentous construction project, the WRSA offers our report, titled "Windsor's Proposed Mega-Hospital Site Review Report" as an objective resource to the current discussion, for consideration by the standing committee members, council and the public at-large.

Architects are trained in creating built environments for people, beyond the limits of the buildings that they create. Our work and education also include the application of planning principles within our building sites, and how these sites relate to the broader planning framework and community. We can provide a uniquely local, yet unbiased review, since our members are unlikely to be the lead designer for this facility or derive any direct financial benefit from it. Our motivation is to make this region the best it can be, and hope this report provides a valuable contribution to the public good in our community.

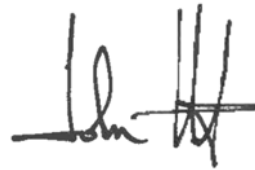
The WRSA Site Review Committee studied governing policies, relevant standards and current precedents. These sources all emphasized the need for compact neighborhoods, community development and, above all, long-term sustainability. Greenfield development is discouraged, except as a last resort. The currently proposed site does not uphold these principles. Accordingly, our report recommends abandoning this site for a new location guided by these clear principles, which will support a strong, vibrant and sustainable community and region.

We look forward to your reply and an opportunity to contribute to this meaningful discussion.

Sincerely,



Settimo Vilardi, Architect, M.Arch, OAA, LEED AP BD+C
Chair, Windsor Region Society of Architects



John Hrovat, AIA, OAA, LEED AP BD+C
Immediate Past Chair & Sub-committee Chairperson

cc: Mr. Ralph Ganter, Chief Executive Officer, Erie St. Clair Local Health Integration Network
Mr. Martin Girash, Chair of the Board of Directors, Erie St. Clair Local Health Integration Network
Mr. David Musyj, Chief Executive Officer, Windsor Regional Hospital
Mr. Dan Wilson, Board Chair, Windsor Regional Hospital
Minister Christine Elliott, Minister of Health and Long-Term Care
Mr. Thom Hunt, City Planner/E.D., City of Windsor Planning Department



Ontario Association of Architects

June 29, 2018

His Worship Mayor Drew Dilkens
Windsor City Council
Members of the Planning, Heritage & Economic Development Standing Committee (PHED)
350 City Hall Square West, Room 530
Windsor, ON N9A 6S1

Re: Site Selection of Windsor's Proposed Mega-Hospital

Dear Mayor Dilkens, Windsor City Council Members and Members of the PHED,

As a self-regulating body, the Ontario Association of Architects (OAA) is dedicated to promoting and increasing the knowledge, skill and proficiency of its members, and to administering the *Architects Act*, in order that the public interest in architecture may be served and protected. The OAA comprises approximately 4,000 licensed architects, 1,500 architectural interns and more than 1,750 practices. As part of its regulatory mandate, the Association provides a wide range of services to its members and the public. We enjoy a longstanding, collaborative relationship with all levels of government and some government organizations, and we look forward to continuing our shared work on important issues that affect all Ontarians.

Through the leadership of the Windsor Region Society of Architects (WRSA), the OAA has been made aware of the Windsor Regional Hospital's plan to construct a new single-site, acute-care hospital to serve Windsor and Essex County. The OAA applauds the Erie St. Clair LHIN Steering Committee for contemplating the reuse of some of the existing health care facilities in Windsor. Retrofitting and reusing existing buildings helps retain the embodied energy that went into the original construction of the structure, and mitigates the creation of waste that results from construction and demolition projects. Reuse is generally more sustainable than demolition.

The choice for a new hospital location, however, should be made carefully with an eye to how the built environment can contribute to the creation of healthy communities. As such, we encourage you to consider the analysis and recommendations found in the WRSA report, "Windsor's Proposed Mega-Hospital Site Review Report." Through its research, the WRSA identified applicable municipal and provincial guidelines and policies related to site selection, and reviewed how these should guide the final decision.

I encourage you to engage with the WRSA to continue to discuss the location of the hospital site. This is a decision of great public interest and one that clearly impacts the public interest in architecture and the creation of built environments. It is a great example of where sharing a discussion with architects can help make architecture and cities overall better for the people who live, work and play in them.

.../2

As always, we look forward to continued dialogue with you on this and other important issues.

Sincerely,

A handwritten signature in black ink, appearing to read "John Stephenson". The signature is fluid and cursive, with the first name "John" written in a large, stylized loop.

John Stephenson, Architect
OAA, FRAIC
President



**WINDSOR'S PROPOSED
MEGA-HOSPITAL
SITE REVIEW REPORT**

March 2018

ABSTRACT

**A review of the proposed
Mega-Hospital site based on
relevant authoritative publications
and standards to facilitate an
objective assessment of the
suitability of the proposed site.**

**Windsor Region Society of
Architects Mega-Hospital
Site Review Committee**



A local society of the Ontario Association of Architects

WINDSOR'S PROPOSED MEGA-HOSPITAL SITE REVIEW REPORT

WINDSOR REGION SOCIETY OF ARCHITECTS – Site Review Committee

Introduction

The continuing development of the plan to construct a new, single, hospital to serve Windsor and Essex County has not been without controversy. The plan has led to a polarizing debate throughout the community regarding the facility's proposed location that will greatly impact the future of the Windsor-Essex County region economically, socially and environmentally for generations.

As local Architects and associate design professionals wanting to contribute to the ongoing dialogue, a review of available information specific to best practices, planning and community policies were tested against the proposed hospital location based on the following:

- Ontario Provincial Policy Statement
- City of Windsor Brownfield Redevelopment Strategy
- City of Windsor Environmental Master Plan
- Windsor's Community Energy Plan of June of 2017
- Hospital and Health Care Facilities Precedent Studies
- CSA Z8000-11, Canadian Health Care Facilities (HCF)-Reaffirmed 2016

Each research item presented important information towards the WRSA Mega-Hospital Site Review Committee's collective understanding and evaluation of the proposed Mega-Hospital site. These documents contained a pattern of information about the need for compact neighbourhoods, community development, sustainability, and generally did not recommend green field development.

A presentation was made to the WRSA from Ms. P. von Ziegenweidt of the Citizens for an Accountable Mega-Hospital Planning Process (CAMPP) stating their position on the proposed Mega-Hospital location. An unsuccessful attempt was made to hear the position of the Erie St. Clair Local Health Integration Network (LHIN) steering committee (Mr. D. Musyj declined the invitation) to the members of our architects' society. Following the CAMPP presentation, the members of WRSA discussed engaging the discussion publicly regarding this important component of the region's infrastructure by filing a report.

The Society Executive sent out an open invitation to all its members to be part of the WRSA Mega-Hospital Site Review Committee to study the proposed hospital location. The findings of this committee would later be presented to the full WRSA body to determine a course of action. The committee was charged with objectively reviewing available data specific to planning policy and best design practices within researched Federal, Provincial and Municipal Standards for the selected hospital location. The information gathered and analyzed by the committee would determine the position recommended to the society either in validation of the chosen location or a possible alternative plan.

The committee met frequently from May 2017 until the completion date of this report to discuss the task at hand, assign research, provide updates, and discuss findings. Communications continued via email throughout the process to facilitate the preparation of this final report. The WRSA Executive members attended the initial meeting and progress report meetings however they were not part of this committee.

Mission Statement

This volunteer committee of local architects and associated design professionals' purpose is to objectively test the Mega-Hospital's proposed location, based on relevant authoritative publications and standards, so that an assessment of the location and resulting conclusions can form a recommendation regarding its suitability.

Mega-Hospital Overview

Currently, the Mega-Hospital direction has been developed over multiple stages by the LHIN Steering Committee. These stages consist of (a) studies by experts, (b) committees, (c) consultation with healthcare professionals, and analysis of previous reports. The basis of the plan is to create a new healthcare delivery model for Windsor and Essex County. This model would focus on providing healthcare services beyond the hospital setting to place less of a burden on a hospital. One of the goals is to create a system that keeps people out of acute care hospitals by providing services elsewhere such as in-home or at a satellite facility. This would be accomplished by creating a single new acute care facility that is supplemented by ambulatory, satellite, community, and other facilities. Some services will be moved from the hospital setting to the support facilities.

Overview sourced from publicly available documents

The aforementioned LHIN Steering Committee commissioned studies indicate that the new 500 bed, 1.6 million-square foot, 10-storey acute care facility should be built on a Greenfield site at the eastern corner of County Road 42 and Ninth Concession, as it is “cheaper”, “most operationally efficient”, and “least disruptive for patients”. The reports also suggests that the current hospital sites are too difficult to modernize for current and future community needs. As the location is considered essential for delivery of services to residents in the core of Windsor, the old Hotel Dieu building, presently called the Ouellette Campus of Windsor Regional Hospital, will eventually be demolished “with the exception of the parking garage and a community hub will be erected on the 9.8 acre property” (Windsor Star Article 07/16/2015), once patients and equipment are moved to the new mega hospital.

The Hotel Dieu name will return to the site however. Hotel Dieu Grace Healthcare, which presently operates out of the Tayfour Campus on Prince Road, will assume control of the Ouellette site once again.

Hotel Dieu Grace Healthcare will continue with its role of serving the region’s most marginalized, disenfranchised and vulnerable populations. Once the existing hospital buildings are demolished the site will be redeveloped to support outpatient mental health services and a transitional stability centre. It will also serve patients in the area of chronic disease management (Windsorite.ca article July 16, 2015 by Owen Wolter) and be replaced with a new satellite facility focusing on mental health and related services. Metropolitan Hospital will also be totally demolished with no intention for Health Care related redevelopment of the property. The current Tayfour campus will have a 60-bed acute mental health wing built along with the addition of dialysis services and expanded diagnostic imaging. It will also continue much of its current services for mental health, addictions, and rehabilitation services.

At the former Grace Hospital Site, a four-storey, 80,000 square-foot urgent care center is planned for treatment of non-life-threatening issues and will not have 24-hour access.

Researched Documents

- Ontario Provincial Policy Statement
- City of Windsor Brownfield Redevelopment Strategy
- City of Windsor Environmental Master Plan
- Windsor's Community Energy Plan of June of 2017
- Hospital and Health Care Facilities Precedent Studies
- CSA Z8000-11, Canadian Health Care Facilities (F)-Reaffirmed 2016

Ontario Provincial Policy Statement - Summary

1. Focus - The PPS is a pro-active planning document aimed at ensuring strong, effective and sustainable management of municipalities for the long-term. It is an excellent document that should be endorsed and followed by all municipalities for the benefits it will provide for each municipality, the province and ultimately the country. The PPS uses sound planning principles.
2. Authority - The PPS is required to be followed by all bodies making any planning decisions in Ontario.
3. Policies (Regulations) – The PPS lays out how municipalities are to:
 - a) Manage their natural and built resources efficiently for the long-term by promoting:
 - i. Intensification of existing settlement areas.
 - ii. Redevelopment of existing settlement areas.
 - iii. Remediation and redevelopment of brownfields.
 - b) Expand only as needed to meet reasonable projections and needs for the long-term, after options for intensification, redevelopment and brownfield redevelopment in existing settlement areas have been fully investigated.
 - c) Protect rural agricultural areas within municipalities for the long-term.
 - d) Maintain and enhance downtowns and mainstreets for the long term.
 - e) Be financially viable for the long term.
 - f) Promote energy conservation for the long-term.

4. Analysis - The proposed hospital site does not meet the PPS regulations since:
 - a) The site selected does not involve:
 - i. Intensification of existing settlement areas.
 - ii. Redevelopment of existing settlement areas.
 - iii. Remediation and redevelopment of brownfields.
 - b) The site involves the creation of a new settlement area that is not supported by growth statistics and since options for intensification, redevelopment and brownfield redevelopment as noted in 4.a above have not been fully exhausted first.
 - c) The site uses up rural agricultural lands without clear justification and before options for intensification, redevelopment and brownfield redevelopment (as noted in 4. a above have been fully investigated.
 - d) The approach of moving major institutions out of the downtown and off of mainstreets clearly does not maintain or enhance the existing downtown or mainstreets, and conversely is detrimental to them.
 - e) The site chosen does not promote financial viability since it does not follow items a) to d) above and does not promote energy efficiency or make use of the existing district energy systems in the City.
 - f) The site chosen does not promote energy conservation for many reasons primarily because it does not:
 - i. promote compact form and a structure of nodes and corridors
 - ii. promote the use of active transportation and transit since it is isolated
 - iii. focus major employment, commercial and other travel-intensive land uses on sites which are well served by existing mass transit
 - iv. shorten commute journeys and decrease transportation congestion
5. Directly Applicable – The following two key points underscore the proposed site’s inability to meet the PPS as well as good planning principles for this public service facility.
 - a) “1.6.4 Infrastructure and public service facilities should be strategically located to support the effective and efficient delivery of emergency management services.”

- b) “1.6.5 Public service facilities should be co-located in community hubs, where appropriate, to promote cost-effectiveness and facilitate service integration, access to transit and active transportation.”
6. Site Justification - Although the PPS does allow for special cases and planning decisions, that do not conform fully with its policies, it still requires that the general principles of maintaining strong, effective and sustainable communities guide all decisions, for all municipalities. Without a strong planning case justifying the selection of a site so contrary to the policies, the selected site cannot be endorsed as good planning for the City of Windsor. Even if logic is applied regionally it is doubtful that any perceived county benefit, of locating the new hospital on Windsor’s perimeter, would justify the damage to the county’s major regional metropolitan centre.
7. Example - The major effect of the PPS is to have all municipalities avoid the service shortfalls and financial collapse of municipalities, experienced elsewhere. Clearly, the example just across the river from us, should guide us to avoid decisions leading to the sprawl and inefficient growth pattern, which proved to be unsustainable in Detroit.

City of Windsor’s Brownfield Redevelopment Strategy - Summary

The City of Windsor’s Brownfield Redevelopment Strategy is based on a report prepared for City Council in 2009. The report is based on research and policy from around the Province and beyond. In the report, it is discussed that the City of Windsor has more than 100 potential brownfield sites available for redevelopment on record. These sites range in size from less than 1 acre to several hundred acres. It is also stated that many more potential sites are available. The report explains that even though a brownfield site may not be in use, and generating maximum tax revenue, there remain significant ongoing costs to the City of Windsor. Those costs include utilities, policing, and fire protection. Therefore, it is in the best interests of the City of Windsor to promote the use of these sites first. To assist in promoting development the report proposes incentive programs for private investors.

The council report suggests that brownfield redevelopment is often more expensive than greenfield development. This is due to preparations that must be made on the sites before they can be redeveloped. The report does not indicate whether costs to the municipality related to Greenfield development are included in that statement. It is the opinion of this WRSA Committee that the statement is comparing costs to the developer only. This point would support the decision by the Mega-Hospital planners to select a Greenfield site as municipal costs are not taken into consideration. Nevertheless, costs to the City of Windsor related to servicing and operating the site should be considered.

The incentives program includes funding for feasibility studies, site clean-up, and tax rebates. While the program is intended for private investors it is not unreasonable to infer that these programs could be extended to the Mega-Hospital planners to address concerns about brownfield development costs. It is advisable for the City of Windsor and Mega-Hospital planners to investigate such options fully, especially if costs to service the proposed Greenfield site are comparatively high. The considerable funds that would be spent bringing and maintaining infrastructure and services to an outlying greenfield site could instead be used to remediate a brownfield site, with existing services, to the benefit of the urban core.

City of Windsor Environmental Master Plan - Summary

The City of Windsor's Environmental Master Plan discusses the Province of Ontario's concern with the loss of natural habitat and agricultural lands. The City of Windsor also states similar concerns in the surrounding community. The Master Plan goes on to state that there are brown field sites, with supporting infrastructure in place, available for redevelopment. As previously stated the Mega-Hospital plan is proposing to utilize existing agricultural land for a new hospital and extensive development around it. This plan would serve to exacerbate the City of Windsor's stated concerns about loss of agricultural lands in the region.

Windsor's Community Energy Plan – June 2017 – Summary

Windsor's Community Energy Plan of June 2017 provides guiding principles that are intended to demonstrate global leadership and create a competitive and economic advantage for Windsor. It aims to create a more sustainable community with smart energy systems and land use planning promoting compact developments, greater opportunities for walking, cycling and public transportation which the Mega-Hospital proposed location totally contradicts.

The energy plan lists 'Energy Planning Districts' with the bulk of Windsor's population residing far from the proposed Mega-hospital site. It shows that the city spends most on transportation-based energy at 46% which would clearly increase with this needless sprawl without a justifiable population increase. It lists the consideration of creating a special purpose 'Multi-Utility Company' to integrate smart networks providing electricity, district heating, cooling, water and waste water management and distribution services, which are highly inefficient when catering to sprawl without the population to utilize it fully and effectively.

The most critical aspect of the proposed Mega-Hospital location is the hope for a city-scale District Energy System to supply a network of heating and cooling to replace individual furnaces, boilers and chillers in buildings. These networks allow all sources to be mixed together creating lower cost, lower emissions and added reliability which recover waste heat while creating a larger economy of scale for these assets. There are a few district energy systems currently in place in the city now, one of which is in the urban core. If the Mega-Hospital was included these efficiencies could be increased and further developed much more economically and effectively for more facilities giving Windsor that energy competitive edge it so desires. The proposed Mega-Hospital site is actually working contrary to the district energy initiative.

Windsor's Community Energy plan – 2009 - Summary

Integrate Cycling Infrastructure Page 26 (reference 2009 Windsor Community Energy Plan). Integrate Cycling Infrastructure. Developing municipal cycling infrastructure is important in helping to achieve Ontario's vision of becoming Canada's premier cycling province (ref Integrate Cycling Infrastructure Page 26). More and more people are choosing cycling as their preferred way to get around. By developing cycling infrastructure, Windsor can support and encourage the growth of cycling while simultaneously reducing both corporate and community emissions. The balance of the report dealt with Continuing to Improve Operations, Maintenance, and Monitoring to reduce energy consumption.

Hospital and Health Care Facilities Precedent Studies - Summary

The committee researched comparable precedents to better understand contemporary hospital planning and design decisions. The following represent the key points that were uncovered in the committee's research of current trends and executed plans for hospitals in medium sized city urban settings.

The over-arching theme for contemporary hospital development is community engagement and proximity to mixed-use, walkable urban areas. In support of this observation, Health Care Design Magazine reporter Jennifer Silvis noted “.....times are changing and organizations around the country are reconsidering the campus planning of old in favor of models that place their facilities as anchors of communities rather than outliers, opening doors to neighbors and supporting healthy initiatives—all in an effort to keep people well rather than treat illness.” (Ref “Designing For Wellness: The Healthcare Campus Of The Future, Health Care Design Magazine)

In terms of economic impact, new large-scale facilities typically can contribute approximately \$60-\$100 million dollars’ worth of investment that can generate continuous spin-off opportunities. We also found that in contrast to singular large-scale facilities, Communities are creating “Health Villages” or “Health Districts” which place the hospital or health care facility at the center of a community.____(Ref. <http://www.hfmmagazine.com/articles/2625-health-care-villages-and-districts-create-caring-communities.>)

From an employment perspective, the U.S. Bureau of Labor Statistics projects that by 2022 1/6th of new jobs in the U.S. will be in healthcare occupations. (Ref. Urban Health Centers: Tear Down This Wall- The Brookings Institute). Similar projections have been made for the Canadian job market. (ref. http://www.huffingtonpost.ca/2015/06/11/canadas-fastest-growing-jobs_n_7557066.html)

Key Common Physical Design Considerations were noted such as Central location, proximity to population served, building design, parking, greenspace, public transit and bike paths.

Recently, publications covering the theme of anchor institutions acting as urban redevelopers have emerged. They include the *Anchor Institution Toolkit, A Guide for Neighborhood Revitalization* (Ref. Netter Center for Community Partnerships 2008). This toolkit focused on Universities and Hospitals as partners with City governments to revitalize neighborhoods.

Although from a precedent perspective, many trends emerge and other than the positive employment aspect of shared spinoff from new development the trends support engaging within the center of communities.

CSA Z8000-11, Canadian Health Care Facilities (HCF)-Reaffirmed 2016 – Summary

The Canadian Standards Association Z8000 Document for Health Care Facilities (HCF) Design advocates that both staff and users will benefit more from building new Health Care Facilities so that people of all abilities are able to access its services, without modification to their normal conduct for effective care, therefore patient travel should be minimized to reduce stress levels and anxiety. It notes that the HCF shall be planned to promote sustainability and wellness while being socially responsible on the external environment by building 'green'. Building on farmland requiring all new infrastructure and services is environmentally wasteful rather than re-using a brown field urban site where all services are in place. Z8000 further states that a HCF should protect the health of the larger global community and natural resources whereby protecting farmland is paramount while avoiding urban sprawl.

This Canadian standards document requires that the planning, design and construction of HCF's follow recognized structured sustainability programs. A proposed location requiring the removal of farmland, creating sprawl, increasing transportation requirements, light pollution and extending the urban heat island would not provide positive impacts to its surroundings as demanded within these programs.

Z8000 delineates how a site will impact the immediate ecosystems / environment and any downstream ecosystems. A development on a Greenfield site would be entirely negative. It further requires that the site be within reach of utilities, other essential services and be accessed from existing major transportation routes all of which a site on the outskirts of these services cannot do efficiently.

Conclusions

Based on the documents reviewed in this committee's research, in which the current Mega-Hospital site consistently did not satisfy the basic principles and guidelines of the referenced documents, it is the recommendation of this committee that an alternative site be considered by the Mega-Hospital steering committee which better complies to the CSA, provincial, and municipal government goals and policies as discussed in this report.

Recommendations

The committee recommends that the Mega-Hospital steering committee/LHIN locate and acquire a new site for the new Mega Hospital that complies with the principles and guidelines of the referenced materials for the long-term health and betterment of the Windsor-Essex community.

To this end we recommend that:

- the new site should be located in a centrally developed area of the City of Windsor and not at its periphery, via available brownfield redevelopment opportunities or developed land that would be repurposed in the case that an ideal undeveloped location was not available.
- the site should be located to take full advantage of all available existing utility and transportation infrastructure,
- the site avoids unnecessarily depleting productive agricultural land,
- the site continues to support the viability of the urban core without sacrificing any service to the region.
- satellite facilities should be located outside of the City of Windsor to serve lower density populations in underserviced communities located in Essex County.

These recommendations would not impede the repurposing of the existing health care facilities in Windsor as proposed. Rather they would promote a better synergy between their planned and future uses and strengthen a health care village concept near the center of the community. This plan would better meet the sustainability, compact community development, and land use goals of both the provincial and municipal governments. It would better comply with the guidelines set out by the CSA for health care facilities. In addition, it would avoid potential harm to the established areas that have grown around the existing facilities.

APPENDIX – Supporting Researched Documents / Summaries

The following appendices contain the supporting research references, for each section of the report, from which the conclusions for each section are drawn. References are generally direct quotations or sections from the documents reviewed, or additional information on case studies. The general format is to have each quote or reference, included verbatim, followed by the researcher's commentary, in **Bold type face**, on what relevance the quote has to this review of the proposed hospital site. Each section of the Appendix corresponds to the section of the report, on the document or topic reviewed. The intent was to give a good understanding of the general thrust of each document, or experience gleaned from the topic studied, and some details of how it applies to a hospital site selection process. As stated previously, researchers strove for an objective review that includes references that both support or do not support the selected site and a general weighing against the overall intent of the document or topic.

- APPENDIX I - Ontario Provincial Policy Statement
- APPENDIX II - City of Windsor Brownfield Redevelopment Strategy
- APPENDIX III - City of Windsor Environmental Master Plan
- APPENDIX IV - Windsor's Community Energy Plan of June of 2017
- APPENDIX V - Hospital and Health Care Facilities Precedent Studies
- APPENDIX VI - CSA Z8000-11, Canadian Health Care Facilities (HCF)-Reaffirmed 2016

APPENDIX I

Ontario Provincial Policy Statement

Authority:

- “Part I: Preamble

The Provincial Policy Statement provides policy direction on matters of provincial interest related to land use planning and development. As a key part of Ontario’s policy-led planning system, the Provincial Policy Statement sets the policy foundation for regulating the development and use of land. It also supports the provincial goal to enhance the quality of life for all Ontarians.”

Legislative Authority; General Goal;

- “Part II: Legislative Authority

The Provincial Policy Statement is issued under the authority of section 3 of the Planning Act and came into effect on April 30, 2014.

In respect of the exercise of any authority that affects a planning matter, section 3 of the Planning Act requires that decisions affecting planning matters “shall be consistent with policy statements issued under the Act.”

Legislative Authority;

- “Part III: Provincial Policy Statement represents minimum standards.”

Legislative Authority; Extent of Application;

- “planning authorities and decision-makers may go beyond these minimum standards to address matters of importance to a specific community, unless doing so would conflict with any policy of the Provincial Policy Statement.”

Legislative Authority; Application;

- The fundamental principles set out in the Provincial Policy Statement apply throughout Ontario.

Legislative Authority; Application;

Relationship with Provincial Plans:

- “Part III: Land use planning decisions made by municipalities, planning boards, the Province, or a commission or agency of the government must be consistent with the Provincial Policy Statement.”

Legislative Authority; Application;

Focus:

Part I: Preamble

- “The Provincial Policy Statement supports improved land use planning and management, which contributes to a more effective and efficient land use planning system.”

Sustainable; Enhanced Settlement Environments; Efficient;

- “long-term planning that supports and integrates the principles of strong communities, a clean and healthy environment and economic growth, for the long term.”

Always take the long-term view; Sustainable; Enhanced Settlement Environments; Efficient;

Part III: How to Read the Provincial Policy Statement

- “The Provincial Policy Statement supports a comprehensive, integrated and long-term approach to planning”

Always take the long-term view; Integrated approach;

Part IV: Vision for Ontario’s Land Use Planning System

- “The long-term prosperity and social well-being of Ontario depends upon planning for strong, sustainable and resilient communities for people of all ages, a clean and healthy environment, and a strong and competitive economy.”

Always take the long-term view; Integrated approach; Economically Sustainable; Healthy;

- “They also support the financial well-being of the Province and municipalities over the long term, and minimize the undesirable effects of development, including impacts on air, water and other resources.”

Economically Sustainable; Healthy Environment; Responsible Stewardship of Resources; Always take the long-term view;

- “The Province must ensure that its resources are managed in a sustainable way to conserve biodiversity, protect essential ecological processes and public health and safety, provide for the production of food and fibre, minimize environmental and social impacts, and meet its long-term needs.”

Economically Sustainable; Healthy Environment; Responsible Stewardship of Resources; Safety; Social Health;

- “This preventative approach supports provincial and municipal financial wellbeing over the long term, protects public health and safety, and minimizes cost, risk and social disruption.”
Economically Sustainable; Healthy Environment; Responsible Stewardship of Resources; Safety; Social Health; Always take the long-term view;
- “Long-term prosperity, human and environmental health and social wellbeing should take precedence over short-term considerations.”
Always take the long-term view over short-term considerations; Economically Sustainable; Healthy Environment; Social Health;
- “To support our collective well-being, now and in the future, all land use must be well managed.”
Responsible stewardship of resources; Integrated approach; for the greater good of all;

Part V: Policies

1.1 Managing and Directing Land Use to Achieve Efficient and Resilient Development and Land Use Patterns

- 1.1.2 “Sufficient land shall be made available to accommodate an appropriate range and mix of land uses to meet projected needs for a time horizon of up to 20 years.”
Prepare land for the future projected needs up to 20 years into the future;
- “Within settlement areas, sufficient land shall be made available through intensification and redevelopment and, if necessary, designated growth areas.”
Prepare land for the future projected needs through intensification and redevelopment first, and by adding growth areas only if necessary;
- Nothing in policy 1.1.2 limits the planning for infrastructure and public service facilities beyond a 20-year time horizon.
Can plan for infrastructure and public service facilities beyond 20-year need;

1.1.3 Settlement Areas

- “It is in the interest of all communities to use land and resources wisely, to promote efficient development patterns, protect resources, promote green spaces, ensure effective use of infrastructure and public service facilities and minimize unnecessary public expenditures.”
All communities to strive for the same goal of sustainable, healthy and prosperous settlements.

- 1.1.3.2 Land use patterns within settlement areas shall be based on:
 - a) densities and a mix of land uses which:
 1. “efficiently use land and resources”;
 2. “are appropriate for, and efficiently use, the infrastructure and public service facilities which are planned or available, and avoid the need for their unjustified and/or uneconomical expansion;”

Responsibility to follow PPS guidelines; responsible stewardship of resources; efficient use of land, resources and public infrastructure; avoid unjustified and/or uneconomical land use expansion;
- 1.1.3.3 “Planning authorities shall identify appropriate locations and promote opportunities for intensification and redevelopment where this can be accommodated taking into account existing building stock or areas, including brownfield sites, and the availability of suitable existing or planned infrastructure and public service facilities required to accommodate projected needs.”

Planning authorities to identify land for intensification and redevelopment; utilize existing buildings; utilize brownfield sites; plan to use existing or planned public infrastructure;
- “1.1.3.7 Planning authorities shall establish and implement phasing policies to ensure:
 - a) that specified targets for intensification and redevelopment are achieved prior to, or concurrent with, new development within designated growth areas;”

Utilize intensification and redevelopment of existing land first, before planning for new growth;
- “1.1.3.8 A planning authority may identify a settlement area or allow the expansion of a settlement area boundary only at the time of a comprehensive review and only where it has been demonstrated that:
 - a) sufficient opportunities for growth are not available through intensification, redevelopment and designated growth areas to accommodate the projected needs over the identified planning horizon;
 - b) the infrastructure and public service facilities which are planned or available are suitable for the development over the long term, are financially viable over their life cycle, and protect public health and safety and the natural environment;”
 - c) in prime agricultural areas:
 1. the lands do not comprise specialty crop areas;
 2. alternative locations have been evaluated, and
 - i. there are no reasonable alternatives which avoid prime agricultural areas; and

- ii. there are no reasonable alternatives on lower priority agricultural lands in prime agricultural areas;

Utilize intensification and redevelopment of existing land first, before planning for new growth; plan for public infrastructure that meets projected needs and is economically sustainable; avoid developing agricultural lands until other options exhausted;

1.1.4 Rural Areas in Municipalities

- “1.1.4.1 Healthy, integrated and viable rural areas should be supported by:
 - b) promoting regeneration, including the redevelopment of brownfield sites;”**For rural areas in municipalities, promote regeneration and redevelopment of brownfield sites;**

1.1.5 Rural Lands in Municipalities

- “1.1.5.2 On rural lands located in municipalities, permitted uses are:
 - a) the management or use of resources;
 - b) resource-based recreational uses (including recreational dwellings);
 - c) limited residential development;
 - d) home occupations and home industries;
 - e) cemeteries; and
 - f) other rural land uses.”**Carefully manage rural lands to allow only appropriate uses;**
- 1.1.5.4 Development that is compatible with the rural landscape and can be sustained by rural service levels should be promoted.
Develop rural lands with uses that only require rural service levels;
- “1.1.5.7 Opportunities to support a diversified rural economy should be promoted by protecting agricultural and other resource-related uses and directing non-related development to areas where it will minimize constraints on these uses.”
Protect agricultural or resource-related uses in lands and direct non-related uses to developed areas with appropriate infrastructure;

1.3.2 Employment Areas

- “1.3.2.1 Planning authorities shall plan for, protect and preserve employment areas for current and future uses and ensure that the necessary infrastructure is provided to support current and projected needs.”
Ensure the health of existing employment areas; ensure serviced by appropriate infrastructure; conservation of existing land resources;

1.6 Infrastructure and Public Service Facilities

- “1.6.3 Before consideration is given to developing new infrastructure and public service facilities: the use of existing infrastructure and public service facilities should be optimized; and opportunities for adaptive re-use should be considered, wherever feasible.”

Utilize intensification and redevelopment of existing land and service facilities first, before planning for new infrastructure and public service facilities; always consider adaptive re-use;

- “1.6.4 Infrastructure and public service facilities should be strategically located to support the effective and efficient delivery of emergency management services.”
Infrastructure and public service facilities to be located to support efficient emergency services;
- “1.6.5 Public service facilities should be co-located in community hubs, where appropriate, to promote cost-effectiveness and facilitate service integration, access to transit and active transportation.”
Group public service facilities in community hubs for efficiency, service integration, efficient access to transit, and for ease of active transportation;

1.6.6 Sewage, Water and Stormwater

- “1.6.6.1 Planning for sewage and water services shall: direct and accommodate expected growth or development in a manner that promotes the efficient use and optimization of existing:
1. municipal sewage services and municipal water services;”
Be efficient with water and sewer services by optimizing existing facilities; conservation of existing resources; efficient;
- “1.6.6.2 Municipal sewage services and municipal water services are the preferred form of servicing for settlement areas. Intensification and redevelopment within settlement areas on existing municipal sewage services and municipal water services should be promoted, wherever feasible.”
Intensification and redevelopment using existing sewer and water services before expansion; efficient;

1.7 Long-Term Economic Prosperity

- “1.7.1 Long-term economic prosperity should be supported by:
a) promoting opportunities for economic development and community investment-readiness;
Have opportunities (land and infrastructure) ready for investment and development;

b) optimizing the long-term availability and use of land, resources, infrastructure, electricity generation facilities and transmission and distribution systems, and public service facilities;

Efficient planning and use of land, resources, infrastructure, electric facilities and public services;

c) maintaining and, where possible, enhancing the vitality and viability of downtowns and mainstreets;

Maintain and enhance downtowns and mainstreets whenever possible;

d) encouraging a sense of place, by promoting well-designed built form and cultural planning, and by conserving features that help define character, including built heritage resources and cultural heritage landscapes;

Promote sense of place by conserving existing heritage buildings and landscapes;

e) promoting the redevelopment of brownfield sites;

Plan for redevelopment of brownfield sites; conserve before expansion;

f) providing for an efficient, cost-effective, reliable multimodal transportation system that is integrated with adjacent systems and those of other jurisdictions, and is appropriate to address projected needs to support the movement of goods and people;

Create efficient and cost effective public transportation systems; integrate with adjacent systems;

g) providing opportunities for sustainable tourism development;

Promote sustainable tourism development; sustainability: economic efficiency;

h) providing opportunities to support local food, and promoting the sustainability of agri-food and agri-product businesses by protecting agricultural resources, and minimizing land use conflicts;

Protect agricultural resources;

i) promoting energy conservation and providing opportunities for development of renewable energy systems and alternative energy systems, including district energy;

Promote renewable and alternate energy systems and district energy;

j) minimizing negative impacts from a changing climate and considering the ecological benefits provided by nature;

Consider nature resources in managing climate change effects;

k) and encouraging efficient and coordinated communications and telecommunications infrastructure.”

Plan for efficient communications infrastructure;

1.8 Energy Conservation, Air Quality and Climate Change

- 1.8.1 “Planning authorities shall support energy conservation and efficiency, improved

air quality, reduced greenhouse gas emissions, and climate change adaptation through land use and development patterns which:

a) promote compact form and a structure of nodes and corridors;

Promote compact urban form; efficient development; sustainable development;

b) promote the use of active transportation and transit in and between residential, employment (including commercial and industrial) and institutional uses and other areas;

Plan for active transportation and transit opportunities; compact urban form;

c) focus major employment, commercial and other travel-intensive land uses on sites which are well served by transit where this exists or is to be developed, or designing these to facilitate the establishment of transit in the future;

Develop in areas already served by transit where possible;

d) focus freight-intensive land uses to areas well served by major highways, airports, rail facilities and marine facilities;

Use highways, airports, rail and marine facilities for freight-intensive land uses;

e) improve the mix of employment and housing uses to shorten commute journeys and decrease transportation congestion;

Strive to shorten commute journeys;

f) maximize vegetation within settlement areas, where feasible.

Maximize vegetation in settlement area;

APPENDIX II

City of Windsor Brownfield Redevelopment Strategy

- “The purpose of this Brownfield Redevelopment Strategy is to outline a framework of general actions and programs to promote brownfield redevelopment in the City of Windsor. This Strategy was developed based on the completion of a number of tasks and activities, including:”
 - a) Brownfields Background Report (August 2008) containing a thorough review of brownfield related legislation and regulations, applicable provincial and local policies relating to brownfield redevelopment, and a review of best practices used in other municipalities to promote brownfield redevelopment;
 - b) A review of the location, size, servicing, land use, environmental and other characteristics of 89 potential brownfield sites (comprised of 129 properties) in the City Redevelopment Opportunities Inventory (ROI) (see Priority Redevelopment Sites and Areas Report, September 2009);
- Definition of Brownfields found in the report: “For purposes of this Strategy, “brownfields” are defined as abandoned, idled, or underused properties where expansion or redevelopment is complicated by real or perceived environmental contamination as a result of historical industrial or commercial land use practices.”
- The study found that there were more than 100 brownfield sites identified in the City of Windsor. “The ROI represents over 221 ha. (546 acres) of land potentially available for adaptive reuse and redevelopment.”

This statement, and other related ones, suggests that there is ample brownfield land available for redevelopment in the City of Windsor. As the City of Windsor, and the Province, wants to better utilize these lands it would be logical for any new planned healthcare facility development to fully explore these options before looking elsewhere. It is not clear whether this was the case in the Mega-Hospital planning.

- “Brownfields can have real and significant environmental, economic and social impacts on a community. In addition to the significant property tax revenues lost when industrial and commercial properties sit vacant, abandoned and underutilized, municipal governments must often dedicate police, fire, and other public services to...brownfield sites. Brownfield sites can also lower surrounding property values, create land use conflicts, and contribute to neighbourhood deterioration.

The current Mega-Hospital plan includes provisions to demolish existing facilities on large sites. Those properties will still need to be serviced by the municipality at public expense. This further supports the previous point.

- “Communities across Canada, including the City of Windsor, have begun to realize that brownfield development can transform environmentally impaired properties into productive economic uses, and can result in...environmental, economic and social community benefits”
- “Numerous studies have shown that the costs to develop brownfields are greater than greenfields. However, positive experience and results in Canada and the U.S. have shown that the challenges to brownfield development can in fact be overcome to produce a profit for the developer and significant economic, environmental and social benefits for the community.”

This statement would support the current Mega-Hospital plan as being more cost effective for the facility itself. However, the statement may not take into consideration the costs to the taxpayer for providing services to a greenfield site. This would likely change the outcome.

- “A study of brownfield development in Canada found that every \$1 spent in the Canadian economy on brownfield development generates approximately \$3.80 in total economic output in all industries in the Canadian economy...”

This is an interesting point. As brownfield sites are typically in an established area they may spur other development or activity around them to generate economic growth. The report does not provide a greenfield output comparison.

- “Redevelopment of brownfield sites for residential, commercial and other uses represents an excellent economic opportunity for the City of Windsor to significantly increase the property tax revenues generated by these properties without incurring the significant public infrastructure costs typically associated with greenfield development.”

The Mega-Hospital plan calls for a significant amount of public funds to be spent to bring services and infrastructure to the proposed site. These costs may be lessened if a suitable brownfield site is chosen. The City of Windsor may be able to prepare this site without exceeding the cost of providing new services and infrastructure to the chosen greenfield site.

- “A study of brownfield versus greenfield development examined 48 brownfield projects in six cities across the United States. This study found that every acre of brownfield land developed would have required 4.5 acres of greenfield land. This demonstrates the potential of brownfield development to reduce the amount of greenfield land consumed, thereby reducing urban sprawl and its associated negative environmental impacts, including air and water pollution and the loss of prime agricultural land. By using existing infrastructure, brownfield development can also reduce the costs of urban sprawl, including the costs of providing hard and soft services to greenfield areas.”

The difference in the amount of land consumed is likely due to the increase in land needed to provide services and access to a site. As a brownfield may already have these, or some of these, the amount of land consumed can be reduced.

- One of the City’s goals for the Redevelopment Strategy was: “Promote Smart Growth, including the reduction of urban sprawl and its related costs, energy efficiency through the construction of buildings that meet Leadership in Energy and Environmental Design (LEED) standards, and green planning and building practices;”

A policy such as this would contradict actions taken that have resulted in further sprawl.

The properties tend to be concentrated in four areas of the City. One is in the West end. Another in the Walker Road area between Riverside Dr. and Tecumseh Road. A third near the former Ford foundry. And lastly, a cluster near the WFCU arena. This could suggest that new development in one of those clusters could lead to further Brownfield development nearby.

APPENDIX III

City of Windsor Environmental Master Plan

July 25, 2006 City of Windsor's first Environmental Master Plan

Section 2.2 Land

- **CONTEXT:** page 4

The preamble of the plans provides for the management of development through an approach which balances environmental, social and economic considerations. The plan endorses "a compact urban form and directs compatible development to appropriate locations within existing and future neighbourhoods." Many of the action relate to the creation of sustainable neighborhood plans in Section 4 of the Environmental Master Plan Making the Plan a Reality: Implementation; which relates to the creation of sustainable neighbourhoods.

Section 2.2 Land

- **PROVINCIAL INITIATIVES:** Page 8

Places to Grow Act, 2005, S.O. 2005, c. 13 is a provincial strategy to accommodate and manage growth by encouraging rational and strategic long term planning, Ontario has committed itself to making efficient use of existing infrastructure and preserving natural and agricultural resources..

The Provincial Policy Statement March 1, 2005. Section 3 of the Planning Act mandates that planning decisions "shall be consistent with" the new PPS. The Statement has policies on complex environmental, social and economic issues that affect community planning, such as: the efficient use and management of land and infrastructure; protection of the environment and resources"

Section 2.5 SELECT TRENDS

- Changing Patterns of Development in Adjacent Municipalities: Page 14

Because of the changing patterns of development in surrounding communities there has been a loss of productive farmland and which has put pressure on environmentally sensitive areas. In the objective section of this Master land, Section B. there is discussion of the potential for a regional green belt, a belt of productive farmland and environmentally sensitive lands similar to that around the Greater Toronto Area.

Windsor has many industrial and commercial brownfield sites with existing infrastructure, and there is encouragement to redevelop them.

Goal B: Create Healthy Communities

- Objective Bd.: page 28
Incorporate sustainable development practices in the design of neighbourhoods, homes and businesses with the goals to encourage infill in the existing built city. Promote concentration, adaptive reuse in the core area with existing infrastructure and identify areas for higher density development.

APPENDIX IV

Windsor's Community Energy Plan - June 2017

Executive Summary (vii)

Recommended Strategies for Windsor

Commercial / Industrial

5. Create a deep retrofit program for existing business and public buildings
6. Enforce compliance with the Ontario Building Code for new commercial and institutional development.

Consider compliance additionally with the standards outlined within the CSA Z8000 Standard. Note the articles, clauses and statements mentioned throughout the CSA standard's review regarding the location of the proposed Mega-Hospital.

Transportation

9. Encourage a modal shift towards public transit
10. Develop and implement an active transportation master plan
12. Continue to advance smart energy systems by integrating into the land use planning process.

The proposed location of the new Windsor Mega Hospital contradicts this note in its entirety.

- a) **The proposed location contributes to the further expansion of sprawl in Windsor.**
- b) **The proposed location implements the development of a previously undeveloped farmland (greenfield) site opposed to a brownfield site.**
- c) **Transportation of the majority of the Mega Hospital's users will require a longer drive, contribution to added, unnecessary pollution, greenhouse gases and overall energy usage.**

These strategies are supported by twenty-nine specific actions identified and described in the corporate climate action plan to be taken by the City of Windsor to reduce energy use and mitigate climate change impacts. These include:

Organizational & Institutional Policy Change

P2: Integrate Energy solutions into land use policies

Buildings

B1: Continue existing building retrofits
B2: Increase efficiency through new building design and building replacement

B3: Continue to improve operations, maintenance, and monitoring

B4: Integrate support infrastructure for existing and new buildings.

Energy and Climate Change in Canada and Ontario

What is the City of Windsor Doing? (Pg. 6)

The City of Windsor aims to create a more sustainable community for its residents. The City's Official Plan (2010) provides overall direction for land use and planning at the city level. It includes key directions on land use, environment, and urban design that help to promote compact development, support sustainable transportations with greater opportunities for walking, cycling, and public transit, and encourage design and construction of energy efficient buildings. The newly adopted 20-Year Strategic Vision (2015) serves as a cornerstone for council and city administration when making decisions with respect to programs, services, and infrastructure.

Chapter 2 – Vision, Principles, Goals, and Targets

Guiding Principles

- Demonstrate global leadership
- Create a competitive and economic advantage for Windsor

Going against many other successful city precedents, in terms of the placement and location of a new Mega-Hospital on farmland while closing and demolishing inner city hospitals, does not display global leadership or economic advantages for the City of Windsor.

Goals - Land Use: Design, build, and revitalize neighbourhoods as complete communities that offer multi-modal transportation options.

Map 1: Energy Districts in Windsor (2014) (Pg. 16)

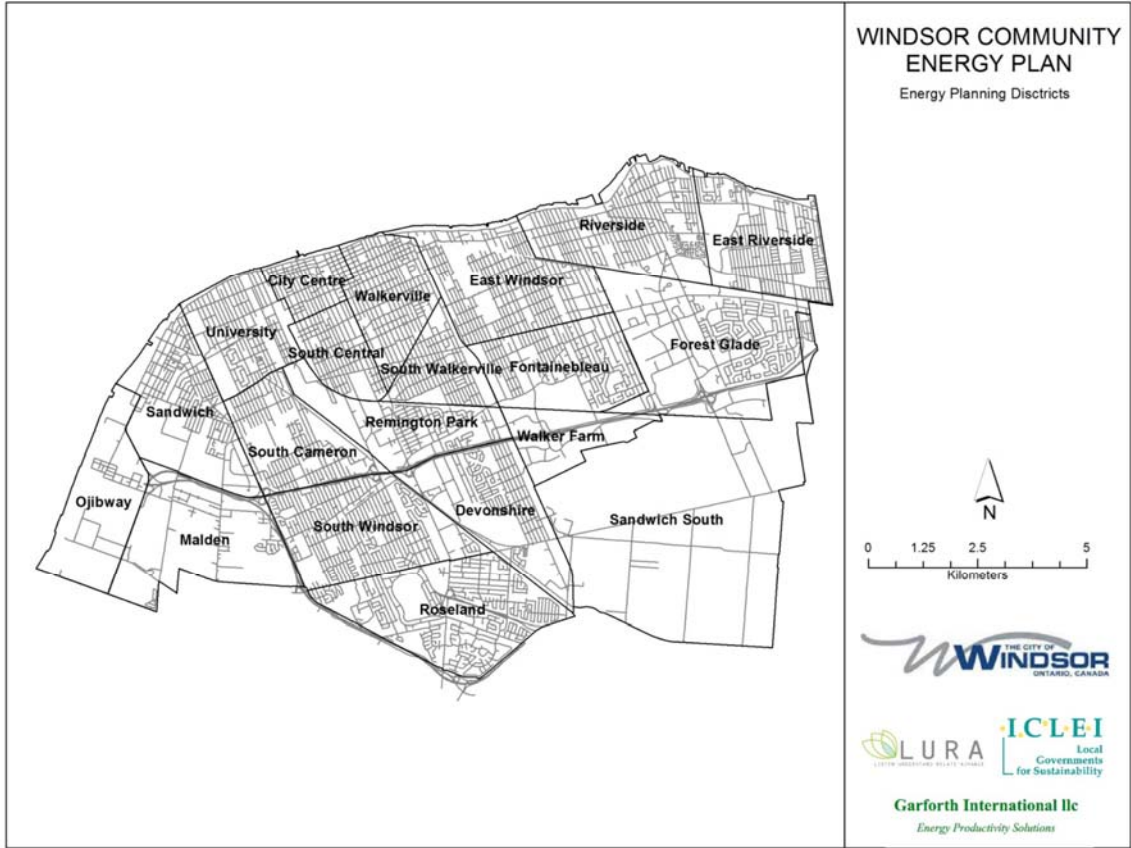


Table 1: Energy Planning Districts (Pg. 17)

<u>EPD Name</u>	<u>Total Gross Floor Area (m2)</u>	<u>Residential GFA (m2)</u>	<u>Non-Residential GFA (m2)</u>	<u>Main Building Types</u>
Ojibway	289,929	730	289,199	Industry, Warehousing
Sandwich	1,061,234	457,922	603,312	Industry, Offices, Housing
Malden	124,689	95,231	29,459	Offices, Housing
University	1,204,560	583,545	621,015	Offices, Education, Retail, Housing
South Cameron	481,867	351,996	129,871	Retail, Housing
South Windsor	1,072,053	824,337	247,716	Education, Housing
Roseland	1,185,758	822,968	362,790	Housing
City Centre	960,654	396,409	564,245	Offices, Retail, Municipal, Housing
South Central	832,835	445,838	386,996	Offices, Medical, Industry, Housing
Remington Park	756,354	208,048	548,306	Offices, Retail, Industry
Devonshire	604,985	290,492	314,493	Industry, Retail, Offices
Walkerville	1,348,481	825,675	522,806	Offices, Retail, Education, Housing
South Walkerville	590,963	299,245	291,718	Retail, Offices, Industry, Housing
East Windsor	1,405,042	860,848	544,193	Education, Offices, Retail, Housing
Fontainebleau	952,940	492,704	460,236	Offices, Industry, Housing
Walker Farm	305,542	5,079	300,463	Industry, Offices
Sandwich South	100,061	41,604	58,457	Industry, Airport
Riverside	1,415,553	1,051,763	363,791	Education, Housing
East Riverside	546,271	497,680	48,591	Housing
Forest Glade	1,240,367	669,486	570,882	Housing, Industry
TOTAL	21,334,094	9,221,601	12,112,494	<i>Residential 43 per cent , Non-residential 57 per cent</i>

As Table 1 shows, the five most significant residential areas are Riverside, East Windsor, Walkerville, South Windsor, and Roseland, which together contain nearly 50 per cent of the housing stock in Windsor.

The proposed site of the new Windsor Mega Hospital is outside of where the bulk of the population resides.

Figure 6: Energy cost by source and by sector (2014) (Pg. 19)

and

Figure 7: Energy Use by Sector (GJ) (2014) (Pg. 22)

These three charts show that Windsorites spend the most on transportation and transportation based energy (46% at \$383.5 M for transportation) and on Gasoline (42% at 348.7M for Gasoline). The proposed site of the Mega Hospital would see these figures and costs rise as it would demand more driving by Windsorites.

Chapter 4 – A Projection of Windsor’s Energy Use in 2041 (Pg. 30-36)

Projects energy use and cost increases across the board throughout all types of energy.

Enabling Strategies to Foster Greater Home Efficiency

Strategy 3: Integrate Energy performance labelling for homes and buildings (Pg. 47)

Energy Performance Labelling (EPL) is a low-cost tool that can help share the energy performance of all buildings.

Some of the benefits of including EPLs on buildings are:

- Transparency regarding the overall energy performance of a building when a new or existing home/building is being purchased, sold, or rented;
- An incentive to invest in upgrades to inefficient homes and buildings before putting the home on the market;
- Increased home and building values; and
- Acts as a real estate marketing tool similar to others such as WalkScore.

Enabling Strategy 4: Create a Net Zero Neighbourhood as an Opportunity for Transformative Change at the Neighbourhood Scale (Pg. 48)

Greenfield lands and **large redevelopment sites** represent opportunities to plan and design Net Zero neighbourhoods.

It is recommended to develop a neighbourhood energy and climate concept that may include the following:

- Orientation and education for all stakeholders;
- **Land-use plan with emphasis on walkable mixed-use areas that reduce vehicle use;**
- **Access to community transit within and beyond the net-zero neighbourhood that reduce individual vehicle use;**
- Construction efficiency standards to near passive or net-zero house levels;
- Urban design and policies to maximize use of zero emissions vehicles of all types;
- **Urban design encouraging “complete streets” that encourage walking and minimize vehicle use;**
- Consider creating a special purpose Multi-Utility Company managing integrated smart networks providing electricity, district heating, cooling, water and waste water supply and distribution services; and
- Financial incentives.

Strategy 6: Continue to Ensure Compliance with the OBC for New Commercial and Institutional Development (Pg. 57)

The following is the recommended approach for Strategy 6:

- Description: New commercial and public sector building development is occurring in Windsor at a rate of a little over 1 per cent year. The proposed strategy is to continue to ensure new commercial and public sector development complies with the most current Ontario Building Code as per the new residential development strategy.

This strategy also focuses on allowing the commercial development marketplace to continue to implement stepwise improvement in the energy efficiency of new buildings that are 100 per cent compliant with the 2012 OBC and subsequent building code updates.

The City can also consider using the permitting process for both new construction and significant renovations as an opportunity for clarifying energy performance expectations and extended possibilities beyond code compliance. This could include locally permissible incentives such as increased density or priority permit handling.

- Target Participation Level: 100 per cent of new buildings.
- Energy and GHG Emission Reduction Potential: Transparency will ensure compliance and potentially drive the market to ask for above code performance.

- Program Design: It is anticipated that market transformation towards net zero new construction will occur primarily as a result of updates to the OBC.

The City's role will be to ensure compliance with the OBC for all new buildings.

- Funding Mechanism: N/A
- Potential Delivery Agent: Builders and developers, City role in compliance.
- Timing: Ongoing.
- Benefits: Business Owners: Owner or renter value for money supported by energy performance labels.

Chapter 8 – Transportation (Pg. 64)

How Much Energy is Used in the Transportation Sector?

According to the Environmental Commissioner of Ontario's Annual Energy Report, **“transportation is Ontario's largest source of greenhouse gas emissions and typically is the largest energy use.** In 2014, the transportation sector consumed 36 per cent of Ontario's energy.”⁶³ **In Windsor, the transportation sector accounts for 26 per cent of the energy used, 36 per cent of GHG emissions and 46 per cent of the energy costs.**

There are three key actions to curb transportation GHG emissions at the community level: (1) support the shift to shared and public transit; (2) adoption of electric vehicles and alternative fuels such as compressed natural gas, biodiesel, and hydrogen; and **(3) land use policies that promote mixed use, compact urban form and promote active transportation options such as walking and cycling.**

Chapter 9 – District Energy (Pg. 71)

Background and Current District Energy System in Windsor

What is a District Energy System?

Modern District Energy systems use a network of insulated pipes to efficiently and reliably deliver heating and cooling from the place where the heating or cooling is generated, to homes, buildings, and industrial facilities. Buildings are connected to the network with a compact substation that replaces the individual furnaces, boilers, and chillers in each building.

District Energy networks allow multiple central and decentralized sources to be mixed together, creating lower cost, lower emissions, and added reliability to the overall heating and cooling supply. Potential sources include combined heat and power generators and high-efficiency gas boilers and chillers. District Energy systems are a pathway to weather resilient, low carbon cities. They can recover and distribute surplus and waste heat, along with a range of renewable heating and cooling sources. The network allows for economies of scale since the generation of heating and cooling in a few larger plants is a better use of assets rather than having thousands of boilers and chillers each heating and cooling individual buildings.

Networks can balance the supply and generation of heat both by time and location. The heating and cooling demands change throughout the day in differing ways for residential, commercial, industrial and public buildings. The network matches and manages these changing patterns, while also ensuring the efficient, cleanest and lowest cost mix is used. Adding thermal storage further allows daily and seasonal services to be optimized.

There are thousands of profitable small, medium and large modern District Energy systems in place across the world. They are growing in both size and number using well proven, highly reliable technology and generating attractive returns to their communities.

A successful, city-scale District Energy system is typically run by a thermal utility that ensures service quality and manages the metering and billing of the heating services.

A centralized site for the proposed mega hospital would allow the project to utilize an existing District Energy system / network, which is existing in the urban core of Windsor.

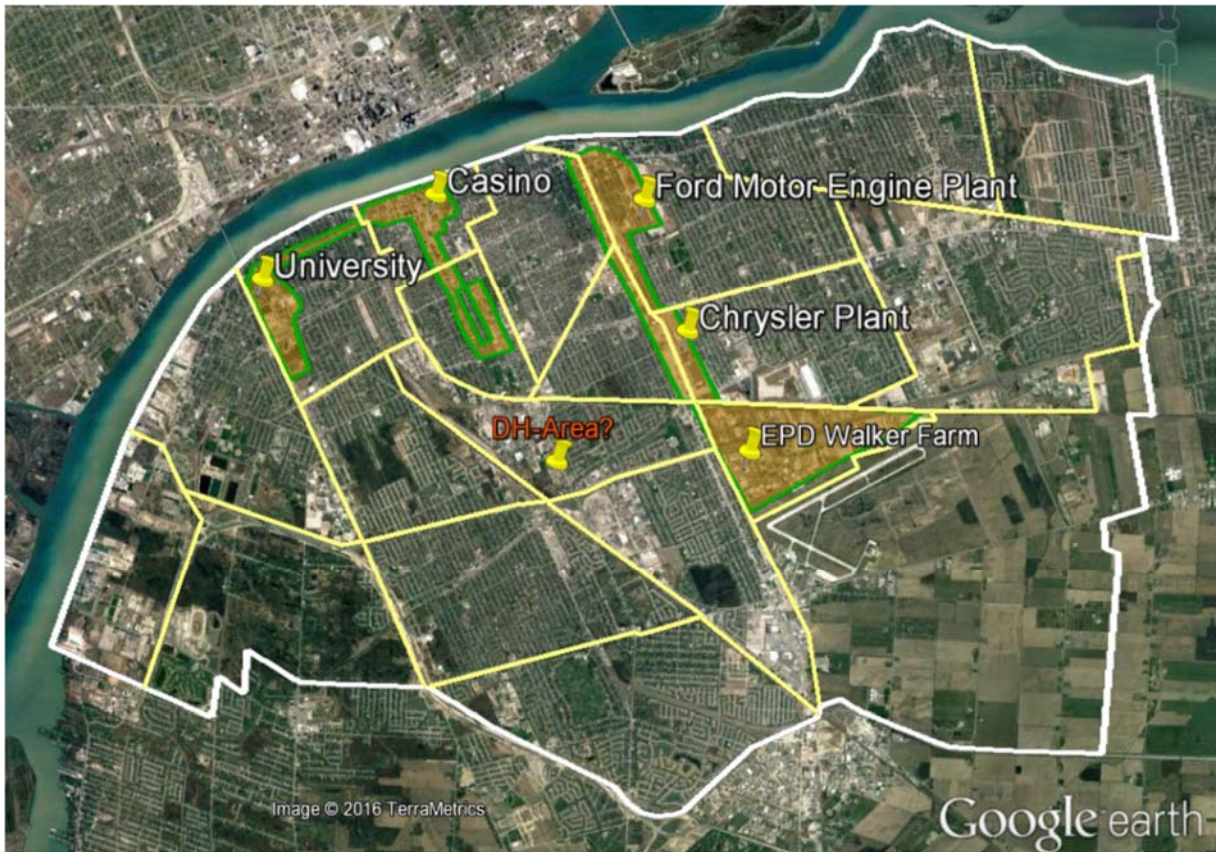
Future Development and Redevelopment Areas

Greenfield lands and large redevelopment sites represent opportunities to plan and implement district energy systems.

Energy and climate impacts should be included in future discussions about the planning or redevelopment of these areas.

Energy and climate impacts appear to be fairly neglected in the planning and proposal process of the site selection of the proposed new Windsor Mega Hospital.

Figure 25: Potential District Heating Areas (Pg. 77)



Reinforce Institutional Structure

The City already has the basic institutional framework through WUC's DEW division to implement the District Energy recommendations of the CEP. The basic operational and customer service structure is already in place.

APPENDIX V

Precedent Studies

Introduction

The purpose for reviewing precedents in this report is to understand the impact of large institutions on their local municipalities. For the purpose of this report we have reviewed two cities that are of similar size and industrial predisposition to that of Windsor along with hospitals that have made as part of their overall development plans the integration of the surrounding communities. We have found, through these precedent case studies, that the desire for integration was a key determinant in the planning for these facilities. We have also noted both the economic and physical impact that the choice of location can provide for a city.

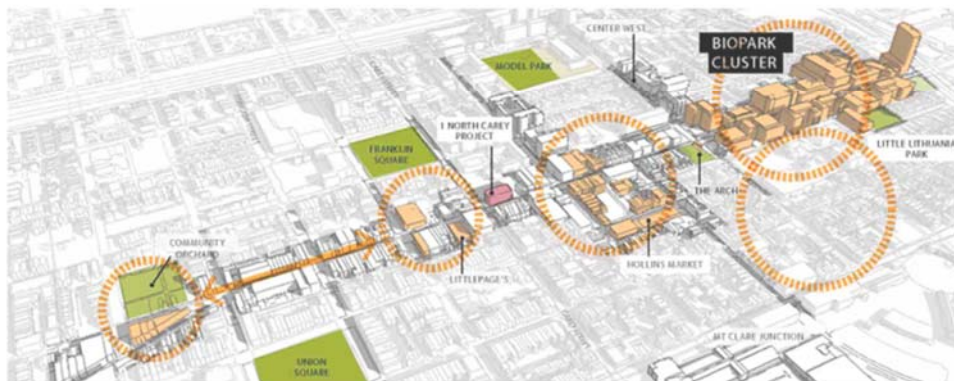
In reviewing the case studies, we realize that no one precedent will directly correlate to Windsor's specific situation. We do believe, however, that best-practices are important to consider from relevant sources. The case studies that we have identified position the subject facilities within the context of the latest in healthcare master planning. This is reflected in an article from Health Care Design Magazine, where reporter Jennifer Silvis notes:

- “.....times are changing and organizations around the country are reconsidering the campus planning of old in favor of models that place their facilities as anchors of communities rather than outliers, opening doors to neighbors and supporting healthy initiatives—all in an effort to keep people well rather than treat illness.¹
- The movement is in the direction of creating community-embedded healthcare facilities. Healthcare providers are realizing that by being active in their communities they can have a positive influence on residents' health risks. Currently this is being realized by “Health Villages” or “Health Districts” which place the hospital or health care facility at the center of a community. These new facilities are key contributors to existing walkable communities.²
- Chris Rzomp, a planner with Gensler, the largest architectural firm in the U.S., with numerous institutional clients, in an article written to outline strategies for integrating hospitals and their communities, states 4 principles that can be used by hospitals to strengthen their communities³

- a) Adopt shifting service models
- b) Promote a mix of supporting uses
- c) Engage the community
- d) Develop comprehensive masterplans for long-term operations and growth

2. Promote a mix of supporting uses

Whether or not a hospital chooses to develop its own property, it can still influence the growth of private taxable uses in the community. This can be accomplished in many ways, such as offering incentives to staff who walk to work (promoting wellness and creating demand for nearby housing and amenities) or by strategically locating new facilities in or near the neighborhood. With the shift toward continuous care, people with specific needs will want to live closer to healthcare centers for easy access to weekly treatments or on-demand services.



While working on a neighborhood plan for Southwest Baltimore, we collaborated with the **University of Maryland Medical Center**. They had taken a critical step in the community's revitalization by crossing MLK Boulevard, a historic socioeconomic division between downtown and the southwest neighborhoods, to build a state-of-the-art proton cancer treatment facility. Anticipating a growth of medical tourism to the neighborhood as a result of this new facility, UMMC partnered with a private developer to build high-rise housing and a hotel next to the facility—investing in the community and sparking rehabilitation of the existing housing stock.

Image © Gensler

The over-arching theme for contemporary hospital development is community engagement and proximity to mixed-use, walkable urban areas. This is seen as a critical combination in providing healthy, accessible environments for neighborhood residents.

The U.S. Bureau of Labor Statistics projects that by 2022 1/6th of new jobs in the U.S. will be in healthcare occupations.⁴ Similar projections have been made for the Canadian job market.⁵ With these new jobs come the demands for state-of-the-art facilities. Campus expansions are on the rise to meet this demand and can be used to create a more inclusive and economically sustainable urban community.

Case Studies

Case Study 1: ProMedica Health Care Systems new facility, Toledo Ohio

Renovation of an existing 22,000 sf Edison steam plant located on the Toledo waterfront.

- Toledo, Ohio
- Population: 280,000
- Square Mileage: 84 sm (217 km²)
- Status: under construction
- Workforce: Approximately 1,000 jobs



Key Physical Design Considerations: Central location, adaptive reuse, physical enhancement of surroundings and waterfront.

“Our move to downtown will help ProMedica be more connected, more efficient and more effective as an organization,” -Randy Oostra, CEO of ProMedica

According to ProMedica's website their investment represents approximately \$60 million and will bring over 1000 jobs to Toledo's downtown core. The project is seen as a catalyst in the ongoing rejuvenation of downtown Toledo. The healthcare provider will make investments into the enhancement of Promenade Park along the riverfront as well as integrating the facility into the downtown fabric. ⁶

Case Study 2: Buffalo General Medical Center, Buffalo, New York

Ongoing development and expansion of the existing Hospital system in the core of Buffalo

- Buffalo, New York
- Population: 257,000
- Square Mileage: 52.5 sq mi (136.0 km²)
- Status: Ongoing design and construction
- Facility specifics: 610 beds, 28 operating rooms, 17 interventional labs, four CT scanners and four MRIs
- Workforce: (2001) 7,000 projected to be 15,000 (2020)



UB expects to complete its Jacobs School of Medicine and Biomedical Sciences this fall. (Robert Kirkham/Buffalo News)

Key Physical Design Considerations: Central location, physical enhancement of surroundings and extension of the downtown core.

According to reports, over the past 12 years, the University at Buffalo, Roswell Park Cancer Institute, Kaleida Health and Hauptman-Woodward Medical Research Institute all have finished construction on major research or clinical centers on the campus. In the new buildings, patient care is provided, research scientists seek cures for diseases and entrepreneurs build companies.⁷

The continual investment in the campus has driven demand for additional projects that make for a truly mixed-use environment and enhances the opportunity for job growth in the area. Other projects that are a product of this investment include:

- Construction of the \$90 million Campus Square project, a redevelopment of a 12-acre affordable housing complex into a community with apartments, commercial space and parking.
- The Medical Campus is renovating 980 Ellicott St.. The complex has a mix of office and laboratory space. The project should be completed by the end of 2017

Case Study 3: The Ottawa Hospital, Ottawa, Ontario

Expansion of the existing Hospital system with the goal of creating the “Hospital of the 21st Century”

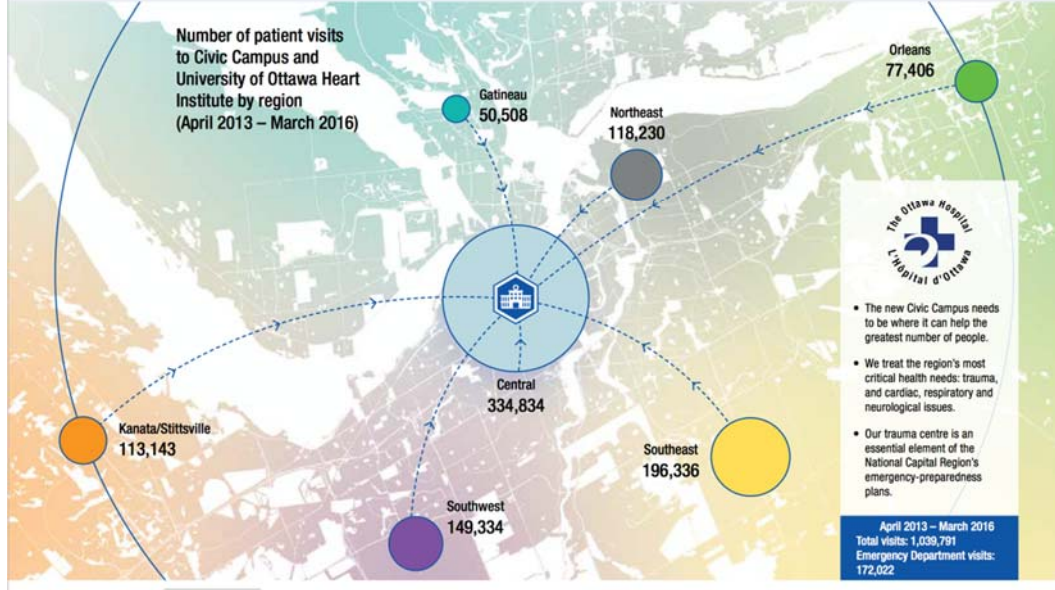
- Ottawa, Ontario
- Population: 933,596
- Square Mileage: 501.92 km² (193.79 sq mi)
- Status: Planning Phase

Key Physical Design Considerations: Central location, proximity to population served, building design, parking, greenspace, public transit and bike paths.

The stated vision for Ottawa Hospital is to build a new a 21st century hospital, a new civic campus, in the heart of the city that will meet the health-care needs of its community for the next 100 years.⁸

Minutes matter. Location is critical for the new Civic Campus.

The Civic Campus – an adult acute-care hospital and the region's only trauma centre – serves the critical needs of about 1.3 million people in Ottawa, eastern Ontario, Gatineau and western Quebec, and Nunavut.



The Ottawa Hospital had a goal of creating a world-class facility while being mindful of the funding available. This led to an understanding that layout and design were important factors. Specifically, efficiency of layout and compactness of design within a 50-60 acre parcel would aid in the proximity of resources within the hospital and improve flow and access to treatment.

The impact of these facilities can be gauged on an on-going basis and cannot be underestimated. The critical first step is the recognition of the importance of location. Access, proximity to community, and the catalytic effect that these types of long-term, large-scale investments can have on a city needs to be carefully considered. Each of the precedents that were studied considered not just the location that most benefitted the institution from a facility operations standpoint, but also what would aid in the mission to serve the community while also being a force for change and a model for development in their city.

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APPENDIX VI

CSA Z8000-11 Canadian Health Care Facilities (HCF) – Reaffirmed 2016

Canadian Standards Association (CSA) standards are developed through a consensus standards development process approved by the Standards Council of Canada. This process brings together volunteers representing varied viewpoints and interests to achieve consensus and develop a standard.

Accessibility

4.3.1.1

The HCF shall be planned and designed to produce an environment that facilitates the patient's access to receiving care and the caregiver's capacity to provide appropriate and effective care. The HCF *shall be designed so that people of all abilities are able, without modification to their normal conduct*, to access the services, work in the facility, use the facility, or assist staff in accomplishing their work.

Both Health Care Facility (HCF) staff and users will benefit more from building a new HCF in an urban environment with closer access for appropriate and effective care.

Notes: (1) Accessibility includes

(a) design intended to minimize barriers for persons with various disabilities;

The added distance of a new HCF at the extreme edge of the City of Windsor is a barrier to the aging, disabled, and persons without vehicles, who must rely on public transit or relatives at an inconvenient high cost monetarily as well as time travelled.

(d) Arrangement of services to minimize patient travel from outside the HCF and between destinations within the HCF.

Poor public access from a greater distance does not facilitate good patient care. Immediate access is compromised due to extended travel requirements.

(2) Accessibility addresses not only the primary needs of persons with disabilities, but any supporting elements that a person might require, such as mobility devices, handlers, or assistive devices.

The greater the distance required to access the HCF, the greater the needs are for the primary care providers and their own supporting systems and agencies.

(3) Patients or staff who encounter a barrier in accessing or providing care can experience increased stress levels, which can have a negative impact on clinical outcomes. All effort should be made to reduce or remove such barriers.

Stress levels and anxiety increases with the difficulty in both emergency and non-emergency situations for individuals already compromised with the health needs. Distance barriers will most definitely have a negative impact on patient clinical outcomes.

4.3.1.3

The HCF shall be designed to *adapt to the changing accessibility needs of patients and the possibility that a patient who normally does not have a disability could experience temporary disability because of impairment* due to an illness or to a medical or surgical condition.

The proposed location creates difficulty during drop off / pick up during a medical emergency, procedure or episode pre, post or during an emergency, procedure or episode due to expected travel times and distances with frequencies being higher from the city with a denser population.

4.3.2.1

The HCF shall be designed and constructed so as to *minimize barriers* to the normal activities of patients and families, staff, and visitors with disabilities.

Note: A barrier can be anything that prevents a person with a disability from fully participating in all aspects of society because of his or her disability, including a physical barrier, and information or communication barrier, an attitudinal barrier a technological barrier, or a policy or practice obstacle.

Difficulties in regards to public transit access, stops and transfers for persons without access to a personal vehicle, staff or patients, are added barriers with this proposed greenfield location, rather than minimizing barriers for these normal activities.

4.3.2.3

The planning process shall include a procedure to identify and resolve possible conflicts between the accessibility needs of different user groups.

Notes: In some situations, a design solution intended to help one user group can inadvertently create a barrier for another group.

Locating the proposed Mega-Hospital at the extreme limits of the City of Windsor in order to accommodate the residents of Essex County creates additional barriers for the

citizens of Windsor, the bulk of the population accessing this HCF. However, locating the proposed Mega Hospital on a 50-acre brownfield site, near Windsor Regional Hospital Metropolitan Campus and Cancer Centre, adds approximately 10 minutes of travel time to a county resident, but allows for the implementation of existing mass transit.

4.3.2.4

The HCF and all of its components should be simple and intuitive regardless of the user's experience, knowledge, language skills, or current concentration level. *The HCF should be able to be used efficiently and comfortably and with a minimum of fatigue by all users, regardless of ability.*

A trip to a HCF is an ordeal in its own right. In some instances, accessing the HCF in the proposed location may create a day trip or extended travel condition to a destination intended to be easily accessible, regardless of ability.

4.6.1.1

The HCF shall be planned and designed to promote sustainability in terms of the construction process, the finished building, and the sustainable operation of the facility over time.

Sustainable design is the philosophy of designing physical objects, the built environment, and services to comply with the principles of ecological, social, and economic sustainability. The intention of sustainable design is to "eliminate negative environmental impacts completely, through skillful, sensitive design".

Notes:

(1) *Sustainability includes provision for the following issues:*

- (a) *environmentally responsible construction (including pre-construction site clearance and demolition);****
- (b) *creating and maintaining environments that promote occupant wellness;*
- (c) *socially responsible impact of HCF operations on the external environment ("green");****
- (d) *flexibility to accommodate future changes in the provision of care, including capacity changes (see Clause 7.10);*
- (e) *total cost of operation (i.e., not only the direct capital investment in the built environment but also indirectly the on-going services and impacts); and*
- (f) *appropriate design for the needs of the community and patients serviced by the HCF.*

(2) *According to the ASHE Green Healthcare Construction Guidance Statement, "Building design and construction practice can be shaped to protect health at three scales: ****

- (a) *protecting the immediate health of building occupants;*
- (b) *protecting the health of the surrounding community; and*
- (c) *protecting the health of the larger global community and natural resources”.*

Our greenest buildings are our existing buildings filled with the embodied energy required to build them. Thereby, eliminating the existing inner-city hospitals (with recent additions and exceptional medical facilities) and replacing them with a Mega-Hospital located on productive farmland near the outskirts of the city, is wasteful, highly unsustainable and insensitive to current planning principles that seek to limit sprawl. Intensification of existing urban brownfield sites containing underground services, roadwork and a community network is a highly sustainable, practical, and less costly direction, specifically where the population is not forecasted to increase, such as in Windsor.

4.6.1.2

The planning, design, and construction of the HCF shall follow a recognized structured sustainability program.

Note: *Examples of structured programs include*

- (a) **LEED** (*Leadership in Energy and Environmental Design*);
- (b) *Green Guide for Health Care (GGHC)*;
- (c) *the Building Owners and Managers Association of Canada’s Building Environmental Standards Program (BOMA BEST);and*
- (d) *Green Globes (UK).*

LEED *is a green building assessment tool initially developed by the US Green Building Council and subsequently launched in Canada by the Canada Green Building Council.*

Leadership in Energy and Environment Design (LEED) would not provide points for the proposed location of the Mega-Hospital outside of Windsor for many reasons including Site Selection (greenfield), Development Density (creating sprawl), Redevelopment of Contaminated Sites (greenfield), Alternative Transportation (increases transportation requirements), Reduce Site Disturbances (eliminating currently productive farmland), Heat Island Effect (creating further heat reflectivity, rather than current absorption and cooling), Light Pollution Reduction (creating further lighted areas), and Building Reuse (building all new).

4.6.1.4

The plans for sustainability should help to ensure that the HCF is integrated into the surrounding community and *has a positive impact on its surroundings*.

The development of a HCF on “greenfield” farmland outside of a community is heedless and contributes to urban sprawl unnecessarily, without any positive impacts for the community, in particular when the current facilities in that community will be demolished.

Master Program

5.1.4.3 Existing Facilities

If the project involves a renovation or addition to an existing HCF, each service or component in the HCF shall be assessed for functionality. The master program shall report the functional deficiencies and planning shall incorporate strategies to eliminate the deficiencies identified in these assessments. In addition, the existing facility shall be assessed to ensure it can support the emergency planning and business continuity plans of the HCF, both during construction and after completion of the project.

Since this proposed plan eliminates the majority of the existing facilities of two hospitals, including a recently constructed Cancer Centre, it appears that endeavouring to work sustainably with existing infrastructure was never intended to occur for this proposed Mega-Hospital on a greenfield site outside of the community.

5.1.5 Master plan and assessment

5.1.5.1 A master plan shall be developed, based on the master program, and shall

- (a) Specify how the functional objectives and space requirements identified in the master program can be achieved on the existing site or on a new site;
- (b) provide the HCF with the vision of how to best allocate and develop space rationally and coherently in response to program needs, over a short, medium and longer term; and
- (c) describe the existing situation, define opportunities for development, make recommendations for implementing the master program, summarize capital costs for development options, and illustrate the building strategy and phasing in schematic design form.

With the commitment to build new, tied to the site selection procedure, master planning that fully exploits the existing hospital infrastructure has not occurred. Opportunities for existing buildings and services working well within the existing

hospitals, in particular the recent expansions all slated for demolition, will extend capital costs for this proposed development without justification.

5.1.5.2 The master plan shall include the following in graphic and descriptive form:

(a) existing and proposed site diagrams:

(i) site services (utility locations and civil planning);

(ii) utility locations;

(iii) civil planning

(iv) site utilization;

(v) vehicular traffic flow;

(vi) pedestrian traffic flow

(ix) Parking strategy

The additional costs estimated to be \$1 billion dollars to supply the proposed farmland site with the appropriate utility services and roadways, versus a site equipped with existing utility services within the community, where large expansive brownfield sites exist, is wasteful, with the burden for those costs falling independently on the City of Windsor without county input.

5.1.6.3

The functional program shall be developed, taking into account the following considerations as they apply to the HCF being designed:

(a) Populations analysis, to determine potential volumes (workload) that are anticipated and the profile / characteristics of the patients;

The majority of patients expected to use the HCF are residents of the City of Windsor, not the County. The epicenter of densest populated residential areas within the region should be used to measure appropriate travel distances. This does not seem to have occurred for the proposed greenfield farmland site.

5.1.11 Site Evaluation

5.1.11.1

The HCF shall ensure that the potential site is in compliance with applicable requirements for the HCF construction.

Note: Federal, provincial / territorial, and municipal environmental acts, regulations, and agreements regarding site specific risk assessments can apply.

Federal, Provincial and Municipal Environment Acts do not advocate for greenfield development where similar brownfield development potential exists. Windsor's recently-approved Energy Plan that advocates for 'District Energy', which is prevalent in the downtown core areas, could be adapted for this Mega-Hospital project but not on proposed farmland at the extreme edge of the city.

5.1.12.3

Based on the site evaluations report, the HCF planner shall explain how the site will be impacted by the development. This shall include information on the impact on the immediate ecosystem / environment and any downstream ecosystems that will be impacted.

It is assumed that any assessment through a site evaluation report regarding a greenfield site will be detrimental to all adjacent ecosystems that will be impacted or entirely removed with this Mega-Hospital's proposed location.

6 Site and Facility development

6.1.1 General

The HCF shall be located to

- (b) be within reach of utilities and other essential services;
- (c) be easily accessed from major transportation routes;

The proposed Mega-Hospital location is not within reach of utilities and other essential infrastructure services. It cannot be easily accessed from major transportation routes unless significant funding, not being provided by the Ministry of Health, is received from other Ministries with Federal and Provincial funding. The estimated \$500M for infrastructure would not be entirely required should the proposed Mega-Hospital be sited within the urban fabric of the city, where bus routes and other forms of transportation, include biking and walking are currently integrated.

6.1.4 Site Circulation

6.1.4.2

All types of site access, traffic, and circulation shall be identified, including

(a) pedestrian; **Pedestrians will not be able to walk to the proposed greenfield site location.**

(b) bicycle;

An Active Transportation Master Plan has not yet been enacted by the City of Windsor. Therefore, cycling to this farmland location will be impeded by the lack of infrastructure conducive to safe cycling practices. However, the City of Windsor is making great progress in developing bicycle path connectivity within the inner-city.

(c) and Vehicular, including

(i) Priority / emergency (land and air) **Land access will have to be developed further. Air access is acceptable across from the Windsor airport however helicopter access is common and preferred on hospital roofs in the city.**

(ii) public transit; **Public transit is currently not available in the proposed area, and would require additional funding to extend current routing.**

(iii) and service vehicles; **Further roadway development is required.**

Alternative methods of arrival and departure to and from the HCF needs to be considered. Not everyone has access to a personal vehicle, and therefore will rely on alternative methods of travel. The proposed location makes these methods difficult and expensive to execute.

6.1.5.1 Pedestrian Circulation

Pedestrian routes to and between buildings shall be as direct as practicable to reduce the temptation to use or create unnecessary routes.

Pedestrian access or walkability favouring any surrounding community is not being addressed with the proposed HCF location. Since the location is isolated and distant to any established neighbourhoods or communities, walkability has not been considered.

6.1.13 Environmental Controls

6.1.13.1

Environmental controls shall be used to minimize the impacts of the HCF (e.g., sound, waste, air quality, and water) on the surrounding areas, including natural areas.

Building a Mega-Hospital and rezoning massive tracts of farmland for this development would impact both the natural areas of the proposed site and those adjacent with additional sound, waste, reduced air quality and water runoff.

7.1.9 Provisions for sustainable design, construction, and operation of the HCF shall be made in accordance with

Clause 4.6.

Note: *This Standard does not provide detailed requirements for sustainable design and construction because such requirements would already be part of the qualification criteria for a structured sustainability program as referenced in Clause 4.6*

By proposing a greenfield site, currently serving as farmland, it appears that no effort has been made to incorporate the sustainable design as noted in Clause 4.6.

7.1.10

HVAC systems shall be designed, constructed, installed, commissioned, controlled, operated, maintained, and managed in a manner that prudently and effectively utilizes energy, water, and other associated resources. Consideration should be given to

- (a) the availability and sustainability of energy sources; **District Energy is not available.**
- (b) effective and efficient system design; **Can occur in isolation but best working in conjunction.**
- (c) maintainability and control of systems; **Can occur.**
- (d) initiatives that reduce energy usage; **Transportation energy use, water, and costs increase.**
- (e) and minimizing the negative impact on the environment. **A maximum negative impact on the environment will occur by removing farmland for urban sprawl with this proposed location.**

Functional Requirements

8.1.2.3

Family support and participation shall be recognized as an integral component of care and be accommodated in the environment.

In many Health Care Facilities (HFC's), support is often offered on site such as health and wellness awareness, grief counselling and various other medical counselling services. However, additional support is also located off site at satellite locations, in most cases closer to the city core where they are now. Therefore, positioning this Mega-Hospital, as proposed on a greenfield site at the edge of the city, where massive tracts of private farmland must be rezoned to accommodate related facilities required to be located near the hospital, counteracts all good town planning principles, creates urban sprawl without a population increase, and has an excessively negative impact on all environmental concerns. With the addition of new commercial, retail, and residential developments around a new greenfield hospital, the negative impacts tied to sprawl will be felt within the city itself, where these functions currently reside. Therefore a 'hollowing out' of the core will occur, due to an increase in vacant buildings, caused directly by the location proposed for the Mega-Hospital, if approved.