



New Windsor- Essex Hospitals System

Economic Impact Assessment Study

KPMG LLP

May 2020

This report contains 29 pages



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May 2020

Notice to Reader

This report has been prepared by KPMG LLP (“KPMG”) for use by the Windsor Regional Hospital (“WRH” or “Client”) pursuant to the terms of our engagement agreement with WRH dated January 23rd, 2020 (the “Engagement Agreement”). This report has been prepared to assist WRH in its discussions with various stakeholders and funding agencies for support for the proposed new Windsor-Essex Hospitals System.

KPMG’s analysis in this report is based on information and inputs provided to KPMG by Client and on modeling outputs prepared by Statistics Canada. The analyses that KPMG performed do not constitute an audit, examination or review in accordance with standards established by the Chartered Professional Accountants of Canada, and KPMG has not otherwise verified the information obtained or presented in this report. KPMG neither warrants nor represents that the information contained in this report is accurate, complete, sufficient or appropriate for use by any person or entity other than Client or for any purpose other than set out in the Engagement Agreement. This report may not be relied upon by any person or entity other than Client, and KPMG hereby expressly disclaims any and all responsibility or liability to any person or entity other than Client in connection with their use of this report.



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Executive Summary

The study provides estimates of the economic impact that will arise from construction of the New Windsor-Essex Hospitals System (to be referred to as “NWEHS” or “the Project”), particularly the new Acute Care Hospital. Estimates of economic impact have been derived primarily using Statistics Canada’s Input/Output (“I/O”) model of the Canadian economy. This model is used to estimate the economic impact that will flow from the capital investment associated with this major hospital upgrade.

The Project includes:

1. Construction of a new 1.7 million sq. foot, 10-storey, Single-Site Acute Care Hospital. The hospital will include complex regional trauma and emergency services, regional cardiac and cancer care, neurosurgery, neo-natal intensive care, obstetrics, and pediatrics, along with in-patient medical and surgical units and acute care specialty clinics.
2. Construction and redevelopment at the existing HDGH Tayfour Campus on Prince Rd to accommodate a Centre of Mental Health Excellence. The site will include a 60-bed acute mental health wing, offering patients a single-entry point to seamless mental health care, and expanded diagnostics and dialysis services.
3. Redevelopment of the Ouellette Campus at 1030 Ouellette Ave to accommodate an Urgent Care/Satellite Emergency Facility in order to provide a new model of emergency care to patients in the city's core. The facility will also include diagnostic imaging, primary care services, a laboratory, and a pharmacy.
4. Additional services in the downtown core at the Ouellette site including outpatient mental health, dialysis, chronic disease management, and some ambulatory and outpatient surgical services. The exact nature and scope are still to be determined.

The economic impacts of the Acute Care Hospital on the economy in Ontario and the rest of Canada are summarized below. Impacts are shown in current year (i.e. 2020) dollars.

Table 1. Summary of Economic Impacts of New Windsor-Essex Hospitals System

Summary of Economic Impacts (2020\$ millions)			
	Ontario	Rest of Canada	Canada
GDP Impact	1,571	158	1,729
Labour Income	1,030	91	1,121
Jobs (No.)	14,444	1,401	15,845
Government and Other Revenues	262	14	276
Total Gross Output	2,853	311	3,164

Note 1: This summarizes direct, indirect, and induced economic impacts

Source: Estimates from Statistics Canada Input-Output Model

As shown in Table 1, this study estimates that the construction of the proposed Acute Care Hospital will:

- Contribute **\$1.73 billion to Canada’s GDP**, of which \$1.57 billion will be in Ontario and \$0.16 billion in other provinces.



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- Generate **Labour Income of \$1.12 billion** and **15,845 Jobs** in Canada. In Ontario alone, the project will generate \$1.03 billion and 14,444 jobs. Labour income is a component of the GDP impact noted above. Within the overall number of jobs created, there are 12,809 Full-Time-Equivalent (“FTE”) jobs in employee positions in Canada, and 11,673 such jobs in Ontario. The balance of the number of jobs is made up of self-employed workers and the additional jobs generated because some employees are in part-time and temporary positions.
- Create **\$276 million in government and other revenues** in Canada. Of the total government revenues of \$275.3 million, approximately \$262 million accrues in Ontario. These amounts are taxes on products and production collected by municipal and provincial governments as well as by the Government of Canada. Government revenues shown are a component of the GDP impact. Of total government revenues, \$105.1 million in revenues will accrue to municipal governments in Ontario. While the proportions that will accrue to the City of Windsor and Count of Essex are not readily identifiable, these revenues are likely to be significant.
- Generate **Gross Output of \$3.16 billion** in Canada, of which \$2.85 billion will be generated in Ontario and \$0.31 billion in other provinces. Gross output measures the total value of goods and services produced by various industries. Intermediate purchases are not netted out.

It is important to note that these economic impacts are in 2020 dollars and will be realized over the course of the assumed three-year construction period.

It should be noted that the City of Windsor has consistently had one of the highest unemployment rate in Canada over the past decade. High unemployment, combined with the presence of a large number of people with skills in occupations that are relevant to construction projects, suggests that the City and surrounding region could capture many of the jobs associated with the investment in NWEHS. Reported experience with other similar hospital projects suggests that peak employment on-site during the construction phase could amount to 1,200 positions. Average on-site employment during the three construction period is projected to be from 500 to 570 positions. Thus, employment impacts from construction are significant and will occur over multiple years.

Development of the site associated with the new Single-Site Acute Care Hospital, to be located in the area of Concession 9 and Lauzon Rd., is also likely to spur new development on adjacent lands. This reflects potential new development opportunities the hospital could bring, improved transit and transportation access as well as the influx of employees, patients, and visitors to the hospital. Economic impacts associated with the development of adjacent properties is not included in the economic impacts identified in this report, which are related only to the construction phase of NWEHS.



1 Introduction

KPMG LLP (“KPMG”) was retained by Windsor Regional Hospital (“WRH”) to undertake an assessment of the economic impact of the construction of the proposed New Windsor-Essex Hospitals System (“NWEHS”). This study examines impacts on the economies of both Ontario and Canada as a whole.

1.1 Understanding the Study

This study is based on capital cost estimates of the New Windsor-Essex Hospitals System, provided by WRH. The capital cost estimates were developed by Hanscomb Inc.

Information from the estimates provided were used as inputs to Statistics Canada’s Input/Output (“I/O”) model of the Canadian economy, a standard tool used to estimate economic impact analysis. The objective of this study is to estimate the impact of the construction of the proposed NWEHS, particularly the Acute Care Hospital, on the economies of Ontario and Canada. Specifically, this study estimates the impact of the construction project on Ontario and Canada’s:

- GDP;
- Labour Income;
- Employment levels;
- Government revenues; and
- Total Gross Output.

The study does not examine economic impacts associated with ongoing operation of the hospital facilities. The new hospital will replace two existing facilities and it is assumed that the incremental impact of the new facility on overall operating costs will be minimal in comparison to construction impacts. Hence, this study focuses on the economic impacts of only the construction phase.

1.2 Project Overview

In July 2015, the Program and Services Steering Committee, which is overseeing plans for the NWEHS, submitted a plan to the Ministry of Health and Long-Term Care as part of the Stage 1B planning for a new Single-Site Acute Care Hospital. The plan was subsequently updated in 2018.

The plan includes:

1. Construction of a new state-of-the-art 1.7 million sq. foot, 10-storey, Single-Site Acute Care Hospital to replace WRH’s two existing outdated acute care campuses. The hospital, which will be located at County Rd. 42 and the 9th Concession, will include complex regional trauma and emergency services, regional cardiac and cancer care, neurosurgery, neo-natal intensive care, obstetrics, and paediatrics, along with in-patient medical and surgical units and acute care specialty clinics. The new site will also include a helipad so patients can be transported by helicopter.
2. Construction and redevelopment at the existing HDGH Tayfour Campus on Prince Rd to accommodate a Centre of Mental Health Excellence. The site will include a 60-bed acute mental health wing, offering patients a single-entry point to seamless mental health care, and expanded diagnostics and dialysis services.

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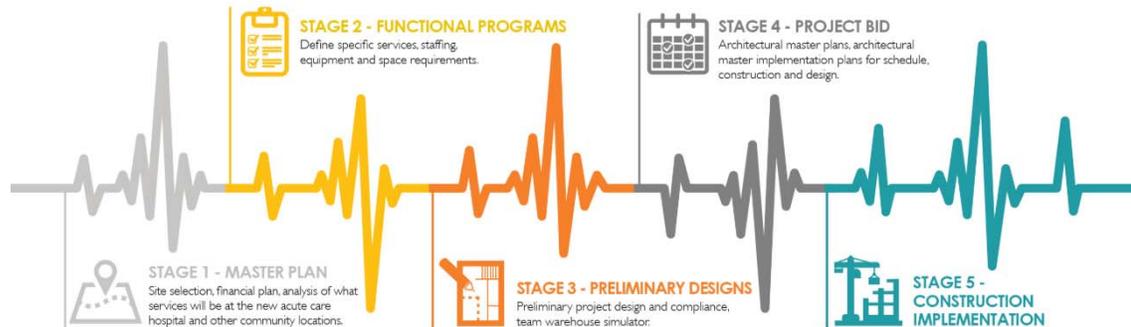
3. Redevelopment of the Ouellette Campus at 1030 Ouellette Ave to accommodate an Urgent Care/Satellite Emergency Facility in order to provide a new model of emergency care to patients in the city's core. The facility will also include diagnostic imaging, primary care services, a laboratory, and a pharmacy.
4. Additional services in the downtown core at the Ouellette site including outpatient mental health, dialysis, chronic disease management, and some ambulatory and outpatient surgical services. The exact nature and scope are still to be determined.

Windsor Regional Hospital President and CEO, David Musyj, has indicated that NWESH will play a very important role in upgrading healthcare in the region. In September 2019, Infrastructure Ontario included the hospital in its market update. "It reaffirms the Government of Ontario's commitment to our proposed new facility and we are excited to get moving on this vital and ambitious development for our region," said hospital CEO David Musyj in a news release¹.

The capital cost of the proposed Acute Care Hospital, which is the focus of this economic impact assessment, is currently estimated to be \$1.8 billion, in current or 2020 dollars. With inflation, actual expenditures in nominal dollars at the time of construction in 2028 are expected to be over \$2.3 billion.²

As depicted below, the hospital will be completed through a 5-stage process.

Figure 1. Stage Gate Process



Source: Windsor Regional Hospital

Stage 1 – Master Plan (current stage): This stage primarily involves the development of a master plan and comprises two parts. Stage 1A, completed in November 2013, provided an overall building block of a strategic plan which looked at what clinical and support services will be provided, the volume of these services and the space required to provide these services. Building on this work, Stage 1B provided more specific details about plans for a site, services, and the finances required. The Program and Services Steering Committee has submitted a proposal for Stage 1A & 1B – The

¹ Windsor Star. (September 2019). Province reaffirms Windsor mega-hospital project with infrastructure list. Available at: <https://windsorstar.com/news/local-news/province-reaffirms-windsor-mega-hospital-project-with-infrastructure-list/>

² This assumes that construction costs will escalate at a rate of 3.0% annually over the period to construction,



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Master Plan - to the Ministry of Health and Long-Term Care (MOHLTC) and is waiting for approval and funding to proceed to Stage 2. Key activities completed so far include:

- Site selection process resulting in a designated site
- Architectural master plans
- Implementation plan and schedule
- High-level funding/financing plan including the determination of the local share component
- A detailed analysis of what services will be located at which locations including the new acute care hospital and other community locations
- A plan outlining the future use of existing facilities.

Stage 2 – Functional Programs: This stage of the project will involve further definition of the functional programs to be delivered including the workload associated with those programs, and the staffing, major equipment, and space required.

Stage 3 – Preliminary Design: Building on the first two stages, the vision designed in Stage 2 is then translated into project-specific output specifications in this stage. A Project Design and Compliance Team will be chosen to work with the hospital in reviewing the project output specifications and then developing a block schematic report and a sketch plan report.

Stage 4 – Project Bid: The hospital, the Ministry, and Infrastructure Ontario go to the market identify qualified companies to undertake the final design and construction of the project. This stage will conclude with a chosen proponent.

Stage 5 – Construction Implementation: Construction contract / Project Agreement award.

1.3 Report Structure

The rest of this report is structured as follows:

- Section 2 provides an overview of the methodology used to derive the results presented in this report.
- Section 3 presents detailed results of the economic impact analysis including impacts on GDP, labour income, employment, tax revenues and gross output generated by NWEHS.
- Section 4 discusses regional economic impacts of the Project on the Windsor-Essex area.

1.4 Limitations and Notice to Reader

The results presented in this study are based on information obtained from the Windsor Regional Hospital and from Statistics Canada's I/O model. KPMG cannot confirm or warrant the completeness or accuracy of the information provided by these sources and our findings are subject to the limitations outlined in the Notice to Reader on page (i) of this report.

2 Methodology: Input-Output Modelling

This Chapter provides an overview of the methodology used to derive economic impact estimates.

2.1 Measured Economic Impacts

Economic impacts that are generated by an industry or entity within a geographic region are typically reported in terms of the GDP, Labour Income, Employment, Government Revenues and Gross Output generated by that industry. A short description of each of these metrics is provided below:

- **GDP impact** is a measure of economic output from the production of goods and services. It measures the total amount of “value-added” that individual producers contribute to their own output. For any given company, value-added is the difference between revenues and the sum of purchased goods and services. GDP impact is measured in dollars. The GDP impact can be further broken down into labour income, government revenues, and income to business.
- **Labour income** is defined as all compensation paid to employees (e.g. including wages, salaries, employer social contributions, bonuses and performance pay etc.). Labour income is measured in dollars. Labour income is a component of the GDP impact.
- **Employment impact** estimates the number of jobs created. For employment impacts, there are two measures of impact:
 - The number of employee jobs, measured in terms of the number of Full-Time-Equivalent (FTE) positions. An FTE is assumed to be equivalent to one full-time position that is held for one year.
 - The overall number of jobs, taking into account the role of part-time and temporary workers and of the self-employed.
- **Government revenues** measures the amount of tax revenues collected by the different levels of government and includes tax revenues on products and production. Taxes on products include sales taxes, gas tax and import duties amongst other items. Taxes on production include property taxes and development fees of the Project.
- **Gross output** is a measure of the value of goods and services that are produced within an economy. In the measurement of Gross Output, intermediate purchases by industries within the supply chain are not netted out. As such, Gross Output exceeds the GDP impact described above. Gross Output is measured in dollars.

The economic impact estimates presented in this study are broken-down into: (i) direct; (ii) indirect; and (iii) induced impacts. A definition of each type of impact is provided below:

- i. **Direct impacts** are those economic impacts generated by the industry in question and can be observed through an analysis of an industry’s employee base, payroll, taxes paid and the difference between the value of sales and purchased inputs.
- ii. **Indirect impacts** are those economic impacts generated by suppliers further-up the supply chain. For example, suppliers to an industry have their own employees and purchase commodities from other suppliers in turn. These expenditures ultimately result in income to labour, income to businesses or governments, or in the import of a good or service from another jurisdiction.

- iii. Economic impacts can also be defined to include **induced impacts**. These are the direct and indirect impacts that result from the subsequent spending by employees of their wages and salaries. This includes spending by employees both within an industry and within its upstream supplier base. It is important to note that induced impacts should be interpreted with some caution as they are affected by a household's propensity to save, amongst other variables. For example, when an economy experiences high unemployment household saving rates tend to increase and induced economic impacts will decrease. Therefore it is important to be mindful that induced economic impacts may not always materialize to the extent shown.

2.2 Input-Output Model

The core principle of economic impact analysis is that each sector produces a sufficient amount of output both to satisfy the final demand for its outputs (i.e., goods and services purchased by end-users) as well as to satisfy the intermediate demands of all other sectors in the economy that use its outputs as factors of production (i.e. as inputs).

Economic impacts are typically estimated through the use of an input/output (“I/O”) model. An I/O model divides the economy into a matrix of industries and commodities. Relationships within the model map the production of commodities onto industries and they identify the primary or intermediate commodities that are used in the production of each final commodity used by consumers or sold as an export. The model can then aggregate all of the expenditures on goods and services and in the supply chain as commodities are produced. It can thus estimate the economic impacts throughout the economy. Input/output models also consider the role of imports, which tie the supply chain to the global economy. I/O models break-down economic impact estimates into direct, indirect and induced impacts.

In Canada, the most authoritative and comprehensive I/O model is the Interprovincial Input-Output (“I/O”) Model of Statistics Canada (“Stats Can”). This study used Stats Can’s I/O model. As outlined in the Stats Can Guide to using the Input-Output Model, the “model has the greatest potential of all major economic models for capturing the flows of goods and services between industries and consumers at relatively detailed levels”. The I/O model used in this analysis is the most recent version produced by Stats Can and is calibrated to Canada’s economy in 2016. The Stats Can I/O Model is recognized by many as the benchmark by which economic impact modeling is conducted in Canada. It is important to note that the model is independent to KPMG and WRH.

Stats Can’s I/O model uses the North American Industry Classification System (“NAICS”) to categorize industries in Canada. In this study, “shocks” were made both to investments and to commodity outputs. A shock means that additional expenditures were assumed in the economy and impacts on economic outputs were then examined. The following section discusses the cost estimates used for this study and how the shocks were allocated.

2.3 Data Inputs and Methodology

2.3.1 Data Sources

The economic impacts presented in this study are based on construction cost estimates of NWEHS provided by WRH.



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Construction costs were developed by Hanscomb Ltd. Costs were estimated on the basis of competitive bids received in May 2018 from general contractors and all major subcontractors and suppliers based on a stipulated sum form of contract. Pricing reflects probable costs in the Windsor area and is therefore a determination of fair market value for the construction of the work³.

2.3.2 Capital Expenditures for the Redevelopment Project

Capital expenditures for the redevelopment project include all building construction and related site development work, allowances for hospital furnishings & equipment, professional fees & expenses. Hanscomb included the following allowances, calculated as a percentage of construction costs, in the development of its cost estimates:

- 10% for in-contract equipment, where deemed appropriate;
- 20% to cover design scope contingencies;
- 2.5% for potential LEED premiums;
- 5% to cover construction contingencies;
- 23.2% for project for project ancillaries.

In the planning document, Hanscomb also provided 3% escalation per annum to cover potential cost increases in labour and material from 2018 to construction start (2028). This provision is important to note as this escalation rate was also used to determine the current project costs which were then used to run the I/O model.

The following items were specifically excluded from the estimate: owner's staff and management expenses; land acquisition costs; financing and/or fundraising expenses; and all costs associated with an Alternative Financing Procurement method of project delivery.

The estimated capital expenditures of the new Acute Care Hospital are summarized below, reported in 2020 dollars:

³ Hanscomb (May 2018). New Acute Hospital, Facility Development Plan.



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Table 2. Capital Expenditures for the Acute Care Hospital

Capital Expenditures for the Acute Care Hospital	
Item	Cost (\$ millions)
New Construction Cost	834
In Contract Equipment Allowance	79
Design Scope Allowance	183
LEED Allowance	27
Total Construction	1,123
Construction Contingency	56
Project Ancillaries	260
Moving Allowance	7
Furnishings, Fixtures and Equipment and IT Allowance	268
Total Project Cost (2018 Dollars)	1,714
Escalation (to 2020 Dollars)	104
Total Project Cost Including Escalation (2020 Dollars)	1,819

2.3.3 Capital Cost Allocation to Statistics Canada

This section discusses how the capital cost estimates summarized in Table 2 were translated into Stats Can shocks on investment and output. As previously stated, an escalation rate of 3% per annum was used to determine the project cost in current dollars (i.e. 2020 dollars) and which then formed the basis for the I/O model inputs. This is summarized in the table below.



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Table 3. Allocation of CAPEX costs to Stats Can Input Shocks

Allocation of CAPEX costs to Input Shocks (\$millions)				
Steps	STEP 1: Data as presented in report (\$2018 dollars)	STEP 2: Data for Input/Output Analysis (\$2020 dollars)	STEP 3: LEED allowances, contingency construction and project ancillaries are reallocated to New construction	Input Shocks
New Construction cost	833.6	884.4	1,249	Shock on Investment for IO commodity MPG23B006 - Hospitals, health centres, clinics, nursing homes and other health
In contract equipment allowance	79.3	84.1	84.1	Shock on Investment using final demand pattern for M&E expenditures on hospital, excluding FF&E and IT.
Design scope allowance	182.6	193.7	193.7	Shock on Output for IO Commodity MPS541300 - Architectural, engineering
LEED allowance	27.3	28.9		
Total Construction	1,122.7	1,191.1	1,527	
Contingency construction	56.1	59.5		
Project ancillaries	260.5	276.3		
Moving allowance	6.8	7.2	7.2	Shock on Output for IO Commodity MPS484001 - Moving services (used
FF&E & IT allowance	268.1	284.5	284.5	Shock on Investment using final demand pattern for M&E expenditures on hospitals, for FF&E and IT.
Total Project Cost	1,714.2	1,818.6	1,818.6	

A Shock on Investments was made to NAICS 622 – Hospitals. This encompasses the hard costs such as new construction cost, Furniture Fixtures and Equipment (“FFE”), and Information Technology (“IT”). For this report, we allocate New Construction Cost, In Contract Equipment Allowance, and the FFE and IT Allowance to this shock. In Step 3, we add the LEED Allowance, Construction Contingency, and Project Ancillaries to the New Construction Costs.

The Shock on Commodity Output was made to Commodity MPS541300 - Architectural, engineering and related service and Commodity MPS484001 - Moving services. This encompasses the soft costs of construction such as architectural and engineering services, as well as moving services. For this report, we allocate Design Scope Allowance to Commodity MPS541300 and Moving Allowance to MPS484001.

For shocks made on investments, the I/O model applies the generalized supply function for that commodity. This takes into account the potential role of imports in meeting commodity demand. Where shocks are made to commodity outputs, the model forces supply to be provided from Ontario. Specifying local supply was assumed to be appropriate for engineering services and for moving services, both of which are more likely to be supplied by Ontario resources than are other commodities.



2.4 Input-Output Model Limitations

2.4.1 Input-Output Model Date

The most recent version of the I/O model produced by Stats Can is calibrated to Canada's 2016 economy.

The premise of the I/O model is that shocks to Canada's economy result in multiplier effects on GDP, labour income, employment, government revenues, and output. Because input values were expressed in 2020 values and because multiplier effects are linear, the economic impacts shown in dollar terms can be interpreted as 2020 values. Adjustments, however, need to be made when interpreting employment impacts. This is outlined further below.

2.4.2 Job Estimates

In the I/O model, employment positions are linked to average compensation per worker and the average amount of time spent on a full time position. Since the I/O model is calibrated to the 2016 economy, average compensation per worker assumed in the model is less than what it is in 2020, which is the year used for expressing the real value of construction expenditures. Without adjustments, the use of 2020 as the base year for expenditures could result in an overestimate of the employment impacts of the NWEHS in terms of the number of jobs and the number of FTE-equivalent employment positions.

To address this issue, we deflate the employment impacts (in jobs and FTEs) by the average wage growth in Canada since 2016. The direct impacts were deflated by the wage growth in the construction sector, as the primary industry in question; meanwhile the secondary employment impacts (indirect and induced impacts) were deflated by the overall wage growth across all industries.

3 Economic Impact of New Windsor-Essex Hospitals System

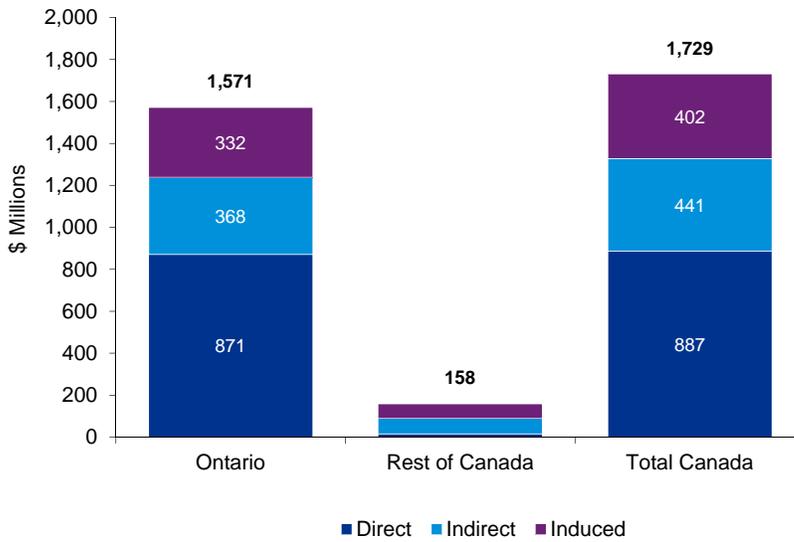
This Chapter presents the estimated economic impacts of the Acute Care Hospital to be built as part of the proposed NWEHS.

It is important to note that the estimated economic impacts occur will over the course of the 3 year construction period. The economic impacts discussed in this section are stated in 2020 dollars.

3.1 GDP Impact

This study estimates that the construction of the NWEHS will contribute approximately **\$1.73 billion to Canada’s GDP**. Of this, approximately \$1.57 billion (91 percent) of GDP impacts accrues to Ontario, while the remaining \$0.16 billion (9 percent) accrues to the rest of Canada. Figure 3 summarizes the direct, indirect and induced impact of the NWEHS on Ontario and Canada’s GDP. As demonstrated in Figure 3, a very large proportion of the GDP impact from the Project occurs within Ontario.

Figure 3. GDP Impact from NWEHS (\$ millions)

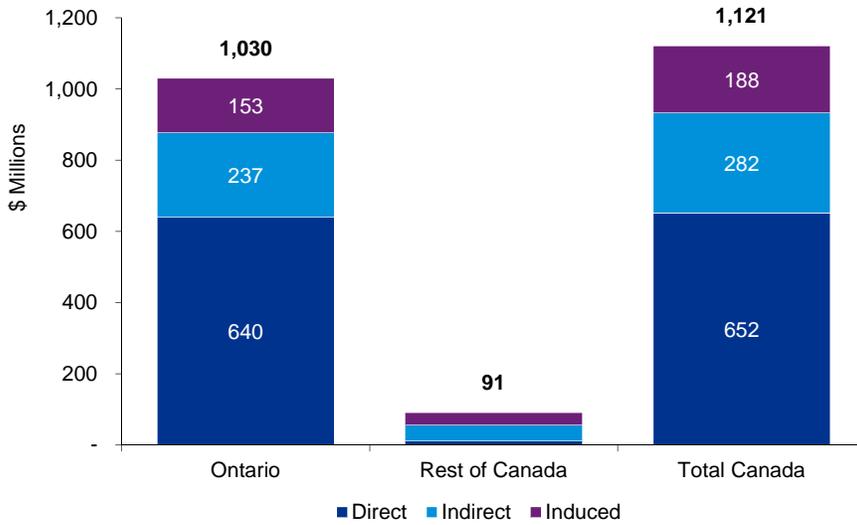


3.2 Labour Income

For the purposes of this study, **Labour Income** is defined as all compensation paid to employees including wages, pension contributions, healthcare benefits and employer-paid social contributions.

As indicated in Figure 4, it is estimated that the total Labour Income that will be generated from the NWEHS is **\$1.12 billion**. Of this impact, approximately \$1.03 billion, or 92 percent, will be generated within Ontario. The remaining \$0.91 billion, or 8 percent, will be generated in other provinces.

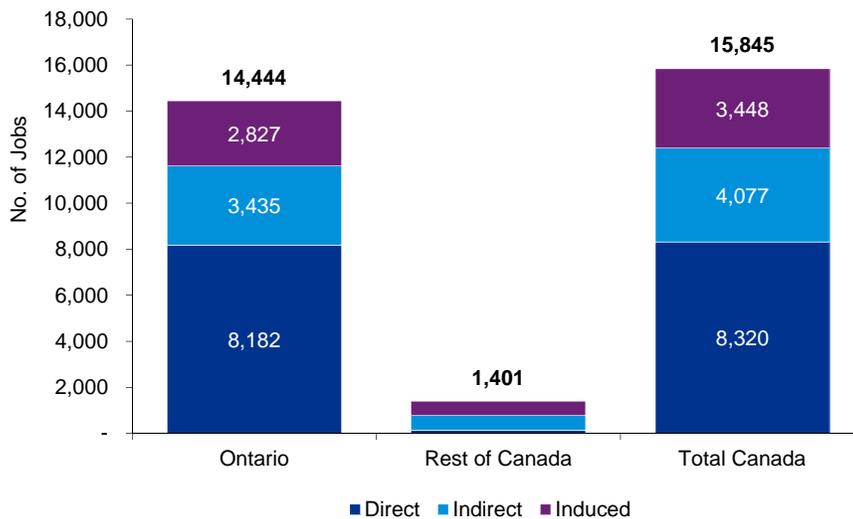
Figure 4. Labour Income Impact from NWEHS (\$ millions)



3.3 Employment Impact

As shown in Figure 5, this study estimates that the NWEHS will generate **15,845 Jobs**, of which 14,444 jobs (or 91 percent) will be located in Ontario and the remaining 1,401 will be located outside of the province.

Figure 5. Employment Impact from NWEHS (No. of Jobs)



It is important to note that one job is a position held over one year, whether full-time, part-time, or as a self-employed person. Given that the construction of the hospital is estimated to be over a 3 year period, the values for the number of jobs cannot be interpreted as the number of “jobs” that will be created over the course of the construction period. Rather, they are the number of job-years created. Thus, one person receiving a job over the course of the 3 year construction period would count as 3 jobs or (job-years) for the purposes of reporting employment impacts.

Table 4 below shows the breakdown of the number of jobs as shown in Figure 5 above into Full Time Equivalent employee positions and the balance of the jobs accounted for by the self-employed and the fact that some workers are in part-time or temporary positions.

Table 4. Employment Impact Breakdown

	FTE Employee Positions	Additional Positions	Total Jobs
Direct	6,915	1,405	8,320
Indirect	3,341	736	4,077
Induced	2,553	895	3,448
Total	12,809	3,036	15,845



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3.4 Government and Other Revenue

This section summarizes government and other revenues generated by the NWEHS through taxes on products and taxes on production. For the purposes of this study, taxes on products cover sales taxes, gas taxes, excise taxes and custom duties, amongst other items. Taxes on production include property taxes, business taxes, licensing and permitting fees, amongst other items. Taxes on income, whether corporate or personal, are not included.

This study estimates that the NWEHS will generate **\$276 million of taxes on products and taxes on production**. Of this amount \$275.3 million are government revenues, with \$112 million (41 percent) collected by the Government of Ontario, \$47 million (17 percent) by the Government of Canada and \$105 million (38 percent) by municipal governments in Ontario. The remaining \$11 million (4%) of government revenue is generated through provincial and municipal revenues in other provinces.



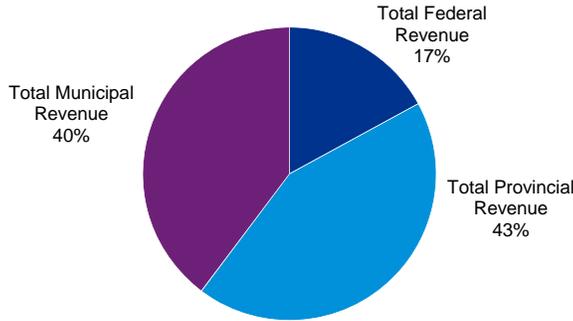
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Table 5. Government and Other Revenue Generated by the NWEHS (\$ thousands)

Impact of WRH Development	Ontario	Rest of Canada	Total Canada
Total Federal Revenue	44,421	2,553	46,973
Taxes on products	43,118	2,493	45,611
Federal trading profits	43	4	46
Federal gas tax	3,060	419	3,479
Federal excise tax	99	8	107
Federal duty tax	2,094	248	2,342
Federal environment tax	-	-	-
Federal air transportation tax	373	37	410
Federal sales tax (GST and HST)	4,402	278	4,680
Federal custom import duties	33,048	1,498	34,546
Taxes on production	1,303	60	1,363
Total provincial	112,258	6,700	118,958
Taxes on products	85,039	4,299	89,338
Provincial environment tax	231	128	359
Provincial gallon tax	768	74	841
Provincial trading profits	5,385	717	6,103
Provincial gas tax	4,700	788	5,488
Provincial land transfer tax	14,074	-	14,074
Provincial amusement tax	387	3	390
Other provincial consumption taxes	2,530	512	3,043
Provincial sales tax	2,273	1,881	4,155
Provincial harmonized sales tax (HST)	54,691	195	54,887
Taxes on production	27,219	-	29,620
Total municipal	105,110	4,307	109,417
Taxes on products	3,341	81	3,421
Municipal land transfer tax	3,341	-	3,341
Municipal amusement tax	-	0	0
Municipal sales tax	-	-	81
Taxes on production	101,770	4,226	105,996
Total Government Revenue	261,789	13,560	275,349
Total aboriginal	194	12	206
Taxes on products	194	12	206
Aboriginal trading profits	194	12	206
Total Government and Other Revenue	261,983	13,572	275,555

As displayed in Table 5, the estimated Municipal Revenue impact in Ontario is \$105.1 million, which reflects taxes on production levied by municipal governments. Taxes on production include property taxes, developer fees, and licensing and permitting fees. Given that taxes on production thus include many of the local municipal taxes and fees associated with a typical construction project, it is reasonable to assume that a significant portion of the \$105.1 million Municipal Revenue impact in Ontario could be realized in the Windsor-Essex region.

Figure 6. Breakdown of Government Revenue Impacts from NWEHS

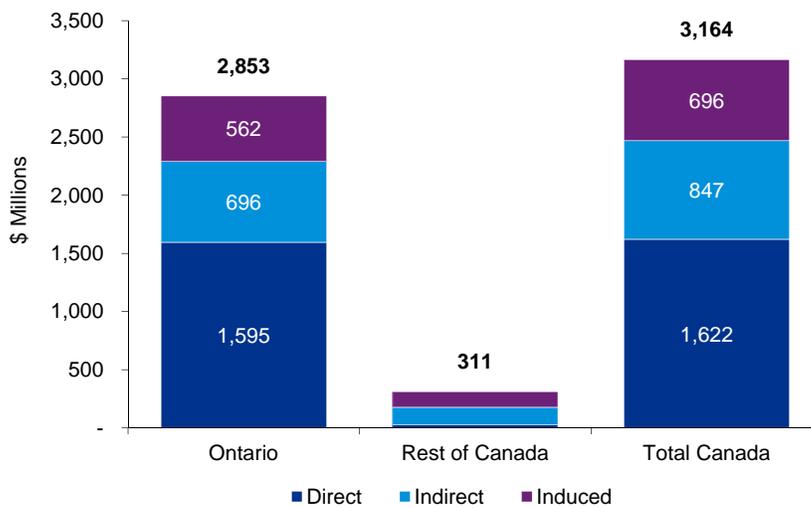


3.5 Gross Output

This section provides an overview of the gross output i.e. the total value of the goods and services produced as a result of the NWEHS. Gross output is a summation of the revenues received by each industry in the supply chain. It is important to note that intermediate purchases from other industries are not netted out in measures of gross output. As a result, the impacts of an industry or expenditure on gross output are greater than its GDP impact.

This study estimates that the NWEHS will generate about **\$3.16 billion of gross output**. Of this amount, \$2.85 billion, or 90 percent, is generated in Ontario and \$0.31 billion is generated outside of the province. Figure 7 provides a detailed breakdown of the gross output of the industry by direct, induced and indirect impact.

Figure 7. Gross Output Impact of NWEHS (\$ millions)



4 Regional Economic Impacts

This Chapter discusses the potential impacts of the construction of NWEHS on the economies of the City of Windsor and Essex County. We will refer to these as regional economic impacts.

4.1 Approach

The Statistics-Canada model that was used to generate the economic impacts summarized in this report provides a representation of the Canadian economy down to the provincial level. As such, the model does not provide estimates of economic impacts at a local (or “regional”) level. Because regional impacts are of interest to municipal decision-makers, this chapter examines other available evidence on the extent to which regional economic impacts may arise. This evidence includes information on:

- The capacity that is available in local labour markets.
- The direct on-site employment observed at other similar hospital projects.
- The potential for additional development on adjacent land parcels.

These sources of evidence are discussed in more detail in the sections below.

4.2 Regional Economic Conditions

Between 2008 and 2015, Windsor-Essex region had one of the highest unemployment rates in Canada. Traditionally, the region’s economy was dominated by the automotive manufacturing sector and benefited from investment in the area by large companies such as Chrysler, Ford and GM. A large contributor to the region’s high unemployment in recent years was the downturn in the manufacturing sector, particularly in the automotive field.

As outlined in an article in the Windsor Star, there have been significant reductions in manufacturing employment in the region:

- Over an eight-year period, Ford reduced its employment in the City from 6,500 jobs to about 1,600.
- In a little over a decade, employment at GM fell to nil from about 5,000.
- Employment at Chrysler has fallen by around 10,000 employees from the 1980s⁴.

As seen in Figure 8 and Table 6, the unemployment rate in the Windsor-Essex region reached its peak in 2009 and had generally been declining over the 10 year period following. It was at or below the national average between 2016 and 2019. However, according to the latest reports by CBC and Statistics Canada, the unemployment rate in Windsor is back to being one of the highest in Canada and is currently significantly above the national average of 5.6 percent.⁵

Employment rates are also not the full story, as manufacturing jobs typically provide high wages and benefits. Replacement jobs may often provide lower earnings and lower earnings stability.

⁴ Pearson, Craig, (4 September 2015). “What can be done? Windsor scopes highest unemployment rate...again.” *The Windsor Star*.

⁵ CBC News. (February 2020). Windsor tops Canadian jobless rate at 8.3%. Available at: <https://www.cbc.ca/news/canada/windsor/windsor-january-2020-unemployment-rate-1.5456581>

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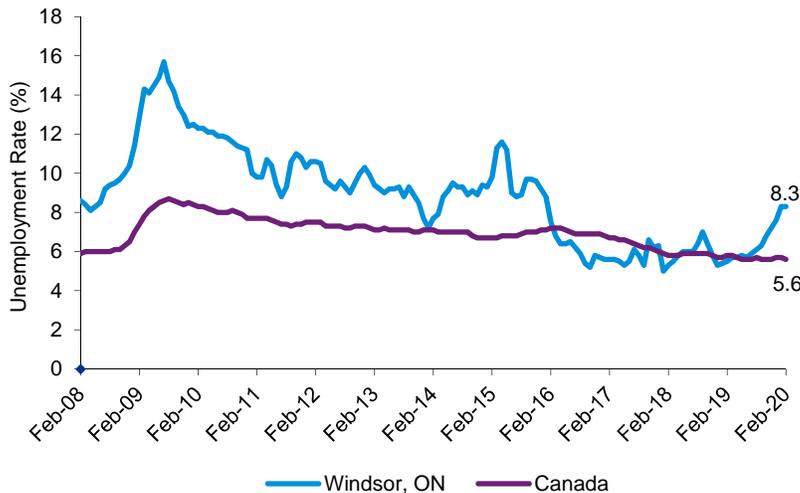
Table 6. Windsor Labour Force Statistics in February 2019 and 2020.

Windsor Labour Force Statistics			
	Feb-19	Feb-20	Change
Population ('000s)	294.4	298.0	3.6
Labour force ('000s)	187.0	182.5	-4.5
Employment ('000s)	174.6	167.3	-7.3
Unemployment ('000s)	12.5	15.2	2.7
Participation rate (%)	66.2	61.2	-5.0
Unemployment rate (%)	5.3	8.3	3.0
Employment rate (%)	49.2	56.1	6.9

Source: Statistics Canada (2020). Table 14-10-0294-02 Labour force characteristics, unadjusted, by census metropolitan area. Windsor, Ontario. Available at: <https://www150.statcan.gc.ca/n1/daily-quotidien/200306/t007a-eng.htm>

Although the unemployment rate has generally been declining since its peak in 2009, the recent COVID-19 pandemic has impacted unemployment across Canada. It is not yet known if the economic effects of the pandemic will be long lasting and how it will impact Windsor-Essex region.

Figure 8. Unemployment rate in the region since 2008



Source: Statistics Canada (2020). Table 14-10-0294-01 Labour force characteristics, unadjusted, by census metropolitan area. Windsor, Ontario. Available at: <https://www150.statcan.gc.ca/t1/tb1/en/tv.action?pid=1410009501>

In 2013, there were approximately 22,000 businesses in the Windsor-Essex region, the majority of which are small- and medium-sized businesses (i.e. less than 500 employees). As of 2020, see Table 7 below, that number has increased to 33,955.

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Table 7. Number of Businesses in the Windsor-Essex Region

Number of Businesses by Employee Size Range - Windsor-Essex Region	
Employee Size Range	Number of Businesses - 2019
Indeterminate*	19,836
1-4 employees	5,406
5-9 employees	2,249
10-19 employees	1,687
20-49 employees	1,073
50-99 employees	403
100-199 employees	183
200-499 employees	82
500 + employees	34
Total	33,955

*Number of employees fluctuates.

Source: Workforce Windsor Essex (2020). Sector Dashboard – Business Counts. Available at: <https://www.workforcewindsor-essex.com/sector-dashboard/>

When the number of businesses is broken down by sector, as in Table 8 below, the construction sector is found to represent the second highest number of all businesses in the region (at around 9%). Building material and equipment suppliers, which are part of the wholesale trade, may also benefit from the sourcing of construction inputs. Consequently, the redevelopment could have a significant impact on the economy as further discussed below.

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Table 8. Number of Businesses by Sector

Number of Businesses by Sector - 2019		
Sector	Total Businesses within sector	% Proportion of Total Businesses
Real estate and rental and leasing	5,822	17.4%
Construction	3,009	9.0%
Transportation and warehousing	2,820	8.4%
Professional, scientific and technical services	2,777	8.3%
Retail Trade	2,602	7.8%
Health care and social assistance	2,397	7.2%
Other services (except public administration)	2,365	7.1%
Finance and insurance	2,045	6.1%
Agriculture, forestry, fishing and hunting	1,691	5.1%
Accommodation and food services	1,213	3.6%
Manufacturing	1,172	3.5%
Administrative and support, waste management and remediation services	1,154	3.5%
Wholesale Trade	779	2.3%
Other Sectors	1,423	4.2%

Source: Workforce Windsor Essex (2020). Sector Dashboard – Business Counts. Available at: <https://www.workforcewindsor-essex.com/sector-dashboard/>

4.3 Regional Impacts from NWEHS

The NWEHS could potentially have large economic impacts in the Windsor-Essex region. A profile of the region's economic base shows that there are a large number of companies and workers who could benefit from the associated construction activity. As previously discussed, construction-related businesses represents a significant portion of businesses. Furthermore, as of 2019, there were approximately 3,431 companies linked to the construction sector, up from 2,800 in 2013, in the Windsor-Essex region. The table below summarizes the number of construction-related companies and jobs in the Windsor-Essex region.

Table 9. Construction industry in the Windsor-Essex region and forecasted number of jobs.

Number of Construction-related companies and employees in the Windsor Essex Region			
3-digit NAICS Code	Industry Type	No. of Companies (2019)	No. of Jobs (2016)
236	Construction of buildings	896	2,660
237	Heavy and civil engineering construction	354	1,135
238	Specialty trade contractors	1,759	6,090
416	Building material and supplies merchant wholesalers	128	820
417	Machinery, equipment and supplies merchant wholesalers	157	1,065
444	Building material and garden equipment and supplies dealers	137	1,360
Total		3,431	13,140



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Source: Workforce Windsor Essex (2020). Sector Dashboard – Business Counts and Workforce. Available at: <https://www.workforcewindsorsex.com/sector-dashboard/>

As discussed earlier in Section 3.3, this study estimates that the NWEHS will generate 15,845 jobs in Canada over the course of the construction period, of which 14,444 positions (or 91 percent) will be located in Ontario. A review of the profile of businesses and workers in the region, and the region's current high unemployment rates, suggest that the region is well positioned to capture many of the economic impacts associated with the NWEHS.

4.4 On-Site Employment Impacts

Review of the impacts of other major hospital projects further supports the expectation that a significant increase in local on-site employment will result from the construction of this project. Relevant precedents are as follows:

- Niagara Health System Care Complex and Walker Family Cancer Centre.
- Humber River Hospital.
- Oakville-Trafalgar Memorial Hospital.
- Milton District Hospital Expansion
- Centre for Addiction and Mental Health (CAMH) Phase 1C Redevelopment

These are discussed, in turn, below. We then also examine the potential average level of on-site employment over time during the duration of construction.

4.4.1 Niagara Health System Care Complex

The Niagara Health System Care Complex and Walker Family Cancer Centre is a 970,000 square foot complex in St. Catharines Ontario that opened in 2012. This facility is only about 60% of the size of the proposed NWEHS complex. A fact sheet issued with respect to this facility indicates that at the peak of construction, over 700 workers were at the site daily⁶.

4.4.2 Humber River Hospital

The Humber River Hospital is a 1.7 million square foot facility in Toronto that opened in 2015/2016. This facility is therefore comparable in the size to the proposed NWEHS complex. At peak of construction, approximately 1,300 workers were at the site daily.⁷

4.4.3 Oakville-Trafalgar Memorial Hospital

The Oakville-Trafalgar Memorial Hospital is a 1.5 million square foot hospital in Oakville that opened in 2015. Considering that this facility is similar in size to the proposed NWEHS complex, the economic benefits of the construction of NWEHS could be similar. Infrastructure Ontario has stated that the

⁶ Plenary Group. (2020). Niagara Health System. Available at: <https://plenarygroup.com/projects/north-america/nhs-health-care-complex-and-walker-family-cancer-centre>

⁷ Infrastructure Ontario. (2020). Humber River Hospital. Available at: <https://www.infrastructureontario.ca/Humber-River-Hospital/>

Halton facility was a significant economic opportunity for suppliers and contractors in the Halton Region and the Greater Toronto Area. At the peak of construction, there were more than 1,100 workers on site daily.⁸

4.4.4 Milton District Hospital Expansion

The project added 330,000 square feet of space to the existing 125,000-square-foot hospital, thereby improving access to healthcare. The facility, which opened in 2017, employed an estimated 600 workers at the peak of construction⁹.

4.4.5 Centre for Addiction and Mental Health (CAMH) Phase 1C Redevelopment

The redevelopment project will see the construction of two modern buildings, adding approximately 655,000 square foot, along Queen Street West that will integrate innovative treatment, research and education facilities with retail spaces, parks and the surrounding neighbourhood. Once complete, all inpatient and clinical programs will be consolidated onto one campus to support the delivery of seamless patient care

The CAMH Phase 1C project, scheduled for completion in 2020, is a significant economic opportunity for local suppliers and contractors. At the peak of construction, Plenary Health CAMH estimates that more than 400 workers will be on site daily¹⁰.

Table 10 summarizes the evidence of economic impacts from these similar hospital projects in Niagara, Toronto and Oakville. In the event that local employment impacts are proportional to project size, this experience suggests 1,200 workers could be employed on site at the peak of NWEHS's construction.

⁸ Infrastructure Ontario. (2020). Oakville-Trafalgar Memorial Hospital. Available at: <https://www.infrastructureontario.ca/Oakville-Trafalgar-Memorial-Hospital/>

⁹ Canadian Council for Public-Private Partnerships (2018). Milton District Hospital Expansion Wins Silver Award. Available at: https://www.pppcouncil.ca/web/News_Media/2018/Milton_District_Hospital_Expansion_Wins_Silver_Award.aspx

¹⁰ Infrastructure Ontario. (2020). Centre for Addiction and Mental Health (CAMH) Phase 1C Redevelopment. Available at: [https://www.infrastructureontario.ca/Centre-for-Addiction-and-Mental-Health-\(CAMH\)-Phase-1C-Redevelopment/](https://www.infrastructureontario.ca/Centre-for-Addiction-and-Mental-Health-(CAMH)-Phase-1C-Redevelopment/)

Table 10. Evidence of Employment Impacts from Other Similar Projects

Summary of Economic Impacts from Other Ontario Similar Projects		
Project Name	Project Description	Employment Impacts
Niagara Health System Care Complex	The new health-care complex in St. Catharines is 970,000 square foot.	At the peak of construction, an estimated 700 workers were at the site daily.
Humber River Hospital	The Toronto hospital is 1.7 million square foot.	At the peak of construction, over 1,300 workers were at the site daily.
Oakville-Trafalgar Memorial Hospital	The 1.5 million square foot hospital is a state-of-the-art facility and includes a full range of health services such as complex continuing care, rehabilitation and acute care.	At peak more than 1,100 workers on site daily, largely drawn from suppliers and contractors in Halton Region and the Greater Toronto Area.
Milton District Hospital Expansion	The 330,000 square foot expansion enabled improved access to healthcare	At peak an estimated 600 workers were on site daily.
Centre for Addiction and Mental Health (CAMH) Phase 1C Redevelopment	The 655,000 square foot redevelopment will integrate innovative treatment, research and education facilities with retail spaces, parks and the surrounding neighbourhood	At peak more than 400 workers is estimated to be on site daily.

4.4.6 Employment Duration

We can use information on the total number of labour hours required on-site to calculate average on-site employment throughout the duration of construction. Based on information for other similar projects, Infrastructure Ontario originally estimated that the total number of hours of construction (or “on-site”) labour required for NWEHS will be between 3.0 and 3.4 million hours.¹¹ This estimate was based on a project size similar to that being proposed currently. Spread out over the assumed three year construction period, the estimate of hours results in an average on-site employment level during construction of between 500 and 570 workers¹². This calculation indicates that average on-site employment increases would be significant.

4.5 Impacts on Regional Development Patterns

The new Single-Site Acute Care Hospital will be built at a new site south of Country Road 42, in the area of Concession 9 and Lauzon Road. This site is near the border of the City of Windsor and the County of Essex, placing it between these two important population nodes. The area in which proposed new facility is to be located is relatively undeveloped at present and is generally used for agricultural purposes. In order to permit the hospital development, a rezoning of the area would be required. To that end, WRH developed the County Road 42 Secondary Plan, which was approved by the City of Windsor in August 2018. The County Road 42 Secondary Plan calls for the area to be rezoned for institutional, commercial and residential uses, which will facilitate the development of a community hub. The policies in the plan provide for the community to develop as a compact urban

¹¹ Email from Infrastructure Ontario to Windsor Regional Hospital, September 30, 2015

¹² Estimate assumes 2,000 hours per person-year.



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area that makes efficient use of land and infrastructure and supports the extension of transit to the area. The community will thus develop as a new urban node that will be focussed on future employment opportunities that exist as the result of transportation connections now and in the future¹³. The new hospital will serve as an important anchor for this new development area.

A planning report in support of the rezoning process noted that recent hospital developments in other communities have occurred in similar suburban or greenfield locations. After a review of developments in Oakville, Thunder Bay, North Bay, Markham, Barrie, St. Catharines and Woodstock, the report noted that additional development generally followed hospital completion. The report noted: "In some cities, this development took the form of an integrated health and technology district, while in others the surrounding development was more broad-based and served a wider range of economic uses."¹⁴

Therefore, over the longer term, placement of the hospital at this new location is likely to spur development on adjacent properties, given the influx of patients, visitors, and staff to the new facility. Other factors including improved transit and transportation access are likely to be major factors as well. Economic impacts associated with such development are not included in the results presented in this report, as the report identifies only those impacts related to the construction phase of the hospital itself.

¹³ City of Windsor (2018). Background Report - County Road 42 Secondary Plan. Available at: <https://www.citywindsor.ca/residents/planning/Land-Development/Development-Applications/current-development-applications/Pages/Z-007-18,-OPA-120.aspx>

¹⁴ MHBC Planning, "Planning Justification Report – Zoning By-law Amendment – 9th Concession Road", prepared for Windsor Regional Hospital, January 2018, p. 46.