



cutting through complexity

Economic Impact Assessment Study: New Windsor-Essex Hospitals System

October 2nd, 2015

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Executive Summary

The study provides estimates of the economic impact that will arise from construction of the portfolio of projects included in the plan for the New Windsor-Essex Hospitals System (to be referred to as “NWEHS” or “the Project”). 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 these major hospital upgrades.

The Project includes:

- 1 Construction of a new 1.6 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 of a new 4-storey, 80,000 square ft. Urgent Care and Satellite Facility at the former Grace Hospital Site located at University Ave. and Crawford Ave. The facility will include a CT scanner, chronic disease management, laboratory services and a pharmacy.
- 3 Redevelopment of the Ouellette Campus at 1030 Ouellette Ave to support outpatient mental health services currently offered at the HDGH Transitional Stability Centre, Chronic Disease Management and a Community hub.
- 4 Construction and redevelopment at the existing HDGH Tayfour Campus on Prince Rd including a 60-bed acute mental health wing and the expansion of diagnostic imaging and the addition of dialysis services.
- 5 The demolition of the existing Met Campus and transfer of a clean site to the City of Windsor.

The economic impacts of NWEHS on the economy in Ontario and the rest of Canada are summarized below.

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

Summary of Economic Impacts (\$ millions)			
	Ontario	Rest of Canada	Canada
GDP Impact	1,501	168	1,669
Labour Income	1,028	91	1,120
FTE Employment Positions (No.)	13,381	1,317	14,698
Government Revenues	196	14	210
Total Gross Output	2,827	335	3,162

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 New Windsor-Essex Hospitals System will:

- Contribute **\$1.67 billion to Canada’s GDP**, of which \$1.5 billion will be in Ontario and \$0.168 billion in other provinces.

- Generate **Labour Income** of **\$1.12 billion** and **14,698 Full-Time Equivalent (“FTE”) positions¹** in Canada. In Ontario alone, the project will generate \$1.03 billion and 13,381 FTEs. Labour income is a component of the GDP impact noted above.
- Create **\$210 million in government revenues** in Canada, of which \$196 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, **\$68.6 million in revenues will accrue to municipal governments in Ontario**. While the proportion that will accrue to the City of Windsor is not readily identifiable, these revenues are likely to be significant.
- Generate **Gross Output of \$3.16 billion** in Canada, of which \$2.83 billion will be generated in Ontario and \$0.335 billion in other provinces.

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

It should be noted that the City of Windsor has consistently had either the highest or one of the highest unemployment rates in Canada over the past five years. High unemployment, combined with the presence in the region 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 between 1,100 and 1,200 positions. Average on-site employment during the three construction period is projected to be from 500 to 560 positions. Thus, employment impacts from construction are significant and will be spread out 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 the increase in traffic that will be associated with employees, patients, and visitors to the new acute care facility. 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 A FTE assumed to be equivalent to one full-time position that is held for one year.

1 Introduction

KPMG LLP (“KPMG”) was retained by Windsor-Essex Hospitals Foundation to undertake an assessment of the economic impact of the construction of the proposed New Windsor-Essex Hospitals System. 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 Windsor Regional Hospital (“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. The objective of this study is to estimate the impact of the construction of the proposed NWEHS 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 relatively minor. Hence, this study focuses on 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 includes:

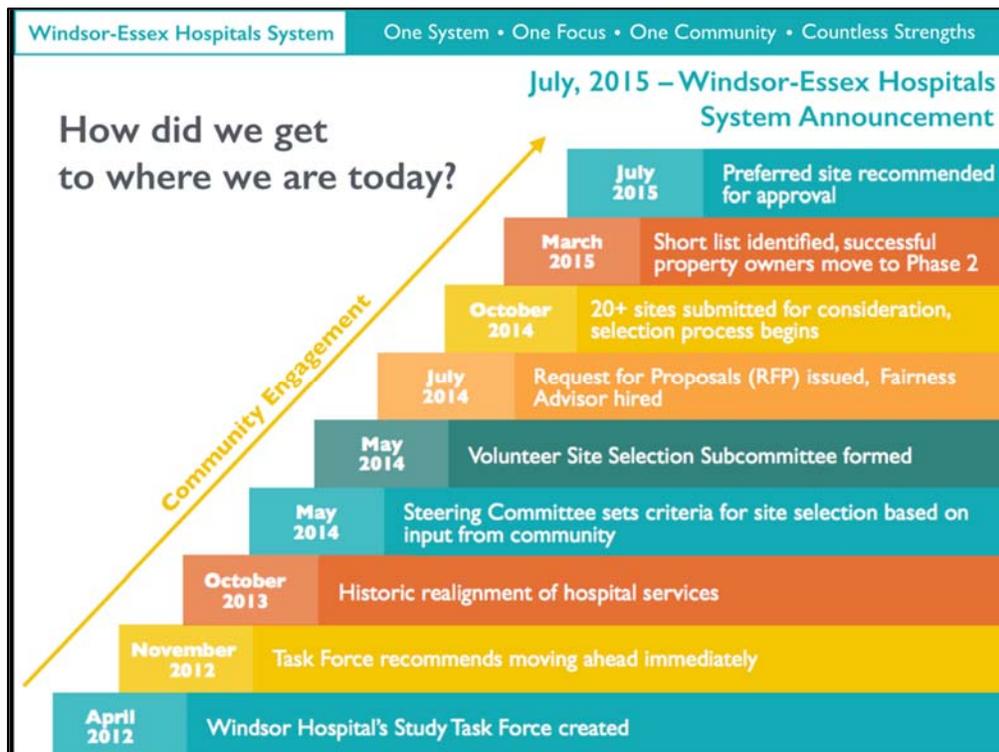
- 1 Construction of a new 1.6 million sq. foot, 10-storey, Single-Site Acute Care Hospital. The hospital will include complex regional trauma and emergency services, regional cardiac and cancer care, neurosurgery, neo-natal intensive care, obstetrics, and pediatrics, along with in-patient medical and surgical units and acute care specialty clinics.
- 2 Construction of a new 4-storey, 80,000 square ft. Urgent Care and Satellite Facility at the former Grace Hospital Site located at University Ave. and Crawford Ave. The facility will include a CT scanner, chronic disease management, laboratory services and a pharmacy.
- 3 Redevelopment of the Ouellette Campus at 1030 Ouellette Ave to support outpatient mental health services currently offered at the HDGH Transitional Stability Centre, Chronic Disease Management and a Community hub.

- 4 Construction and redevelopment at the existing HDGH Tayfour Campus on Prince Rd including a 60-bed acute mental health wing and the expansion of diagnostic imaging and the addition of dialysis services.
- 5 The demolition of the existing Met Campus and transfer of a clean site to the City of Windsor.

Windsor Regional Hospital President and CEO, David Musyj, has indicated that NWESH will play a very important role in upgrading healthcare in the region. He has noted: "This is truly reforming healthcare in Windsor-Essex for decades to come."²

The capital cost of the proposed NWEHS is estimated to be \$1.707 billion in 2020 dollars.

Figure 1. History of the New Windsor-Essex Hospitals System



Source: Windsor Regional Hospital

1.3 Report Structure

This 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.

² CBC News. (July 2015). New Windsor-Essex mega-hospital to be built near airport. Available at: <http://www.cbc.ca/news/canada/windsor/new-windsor-essex-mega-hospital-to-be-built-near-airport-1.3152425>

- 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 Stats Can's I/O model. KPMG cannot confirm or warrant the completeness or accuracy of the information provided by these sources.

2 Methodology: Input-Output Modelling

In this Chapter, we review 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 purchased inputs in order to generate 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** estimates the number of jobs created and is measured in terms of Full-time Employment (FTE) positions. An FTE is assumed to be equivalent to one full-time position that is held for one year.
- **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 2010. 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 on investment and commodity outputs. A shock means that additional expenditures were assumed in the economy and impacts on economic outputs were then examined.

The Shock on Investments was made to NAICS 622 – Hospitals. This encompasses the hard costs such as new construction cost, and associated expenditures on furniture fixtures and equipment (“FFE”), and IT. 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. 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.

Construction costs were developed by Hanscomb Ltd. Costs were estimated on the basis of competitive bids received in April 2015 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 work.³

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 premium;
- 5% to cover construction contingencies;
- 23.2% for project for project ancillaries.

Hanscomb also provided 2.5% escalation per annum for five years to cover potential cost increases in labour and material from the current date (2015) to the time of construction start (2020). This provision is important to note since it reflects the inflation of construction costs to 2020 dollars. Thus, the economic impacts discussed in this report are in 2020 dollars as well.

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 NWEHS are summarized below:

Table 2. Capital Expenditures for the NWEHS

Capital Expenditures for the NWEHS	
Item	Cost (\$ millions)
New Construction Cost	733.5
In Contract Equipment Allowance	69.7
Design Scope Allowance	160.7
LEED Allowance	24.0
Total Construction	987.9
Construction Contingency	49.4
Project Ancillaries	229.2
Moving Allowance	6.5
Furnishings, Fixtures and Equipment and IT Allowance	235.8
Total Current Project Cost	1,508.7
Escalation	198.3
Total Project Cost Including Escalation	1,707.0

³ Hanscomb (April 2015). New Windsor Essex Hospital, Facility Development Plan.

2.3.3 Capital Cost Allocation to Statistics Canada Inputs

This section discusses how the capital cost estimates summarized in Table 2 were translated into Stats Can shocks on investment and output. This is summarized in the table below:

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

Allocation of CAPEX costs to Input Shocks				
Steps	STEP 1: Data as presented in report	STEP 2: LEED allowances, contingency construction and project ancillaries are reallocated to New construction	STEP 3: Escalation is reallocated proportionally to remaining categories	Input Shocks
New Construction cost	733,544,300	1,036,077,700	1,172,226,789	Shock on Investment for IO commodity MPG23B006 - Hospitals, health centres, clinics, nursing homes and other health care buildings.
In contract equipment allowance	69,708,000	69,708,000	78,868,202	Shock on Investment using final demand pattern for M&E expenditures on hospital, excluding FF&E and IT.
Design scope allowance	160,650,500	160,650,500	181,761,290	Shock on Output for IO Commodity MPS541300 - Architectural, engineering and related services.
LEED allowance	23,965,300			
Contingency construction	49,382,900			
Project ancillaries	229,185,200			
Moving allowance	6,513,800	6,513,800	7,369,767	Shock on Output for IO Commodity MPS484001 - Moving services (used goods).
FF&E & IT allowance	235,771,100	235,771,100	266,753,352	Shock on Investment using final demand pattern for M&E expenditures on hospitals, for FF&E and IT.
Escalation	198,258,300	198,258,300		
Total project cost including escalation	198,258,300	1,706,979,400	1,706,979,400	

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 2, 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.

As noted earlier, the Escalation component covers potential cost increases in labour and material from the current date to the time of construction start. In Step 3, we reallocate the Escalation cost proportionately to the remaining cost categories.

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 2010 economy. Escalation in the capital cost estimate covers potential cost increases in labour and material from the current date to the time of construction start. This reflects an inflation of costs to 2020 dollars.

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 Full Time Equivalent Positions

In the I/O model, FTE 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 2010 economy, average compensation per worker assumed in the model is significantly less than what it will be in 2020. Without adjustments, this could result in an overestimate of the employment impacts of the NWEHS.

To address this issue, we deflate the capital cost estimated to 2010 dollars and re-run the I/O model using 2010 dollars. The allocation of capital cost estimates to Stats Can shocks was the same as described in Section 2.3.3. We use the results of this model run to estimate the employment impact of the NWEHS. All other economic impacts reported in this study are based on I/O model results using capital cost estimates in 2020 dollars, as presented in Table 2.

Table 4. Capital Cost Estimates of NWEHS in 2015 and 2010 dollars.

Capital Cost Estimates in 2015 and 2010 Dollars (millions)		
	2015 Dollars (no escalation)	2010 Dollars
New Construction cost	733.5	673.0
In contract equipment allowance	69.7	58.4
Design scope allowance	160.7	134.7
LEED allowance	24.0	20.1
Total construction	987.9	886.2
Contingency construction	49.4	41.4
Project ancillaries	229.2	192.1
Moving allowance	6.5	5.5
FF&E & IT allowance	235.8	197.6
Total current project cost	1,508.7	1,322.8

Source: Bank of Canada Inflation Calculator

3 Economic Impact of New Windsor-Essex Hospitals System

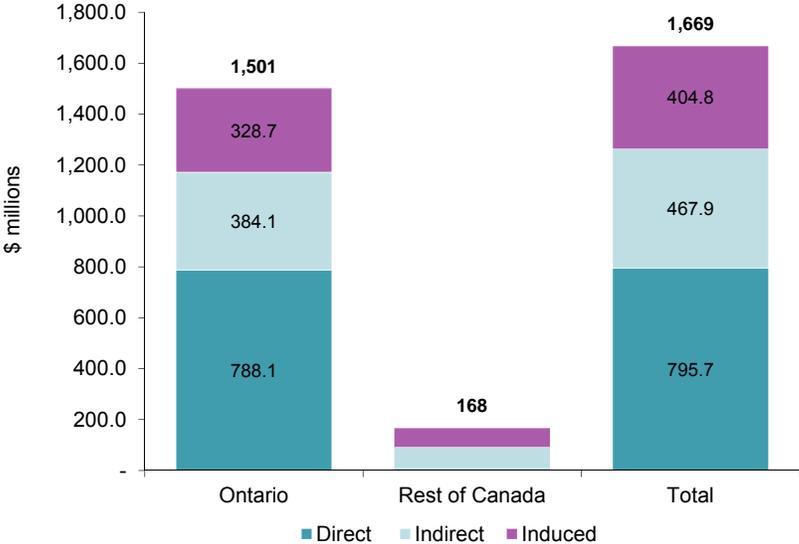
This Chapter presents the estimated economic impacts of the proposed NWEHS.

It is important to note that the estimated economic impacts occur will over the course of the 3 year construction period. Also, recall that an escalation of 2.5% per annum for five years was included in the capital cost estimate to cover potential cost increases in labour and material from the current date to the time of construction start (2020). This reflects an inflation of construction costs to 2020 dollars. Thus, the economic impacts discussed in this section can be interpreted as being in 2020 dollars.

3.1 GDP Impact

This study estimates that the construction of the NWEHS will contribute approximately **\$1.67 billion to Canada’s GDP**. Of this, approximately \$1.50 billion (90 percent) of GDP impacts accrues to Ontario, while the remaining \$0.17 billion (10 percent) accrues to the rest of Canada. Figure 2 summarizes the direct, indirect and induced impact of the NWEHS on Ontario and Canada’s GDP. As demonstrated in Figure 2, a very large proportion of the GDP impact from the Project occurs within Ontario.

Figure 2. GDP Impact from NWEHS (\$ millions)

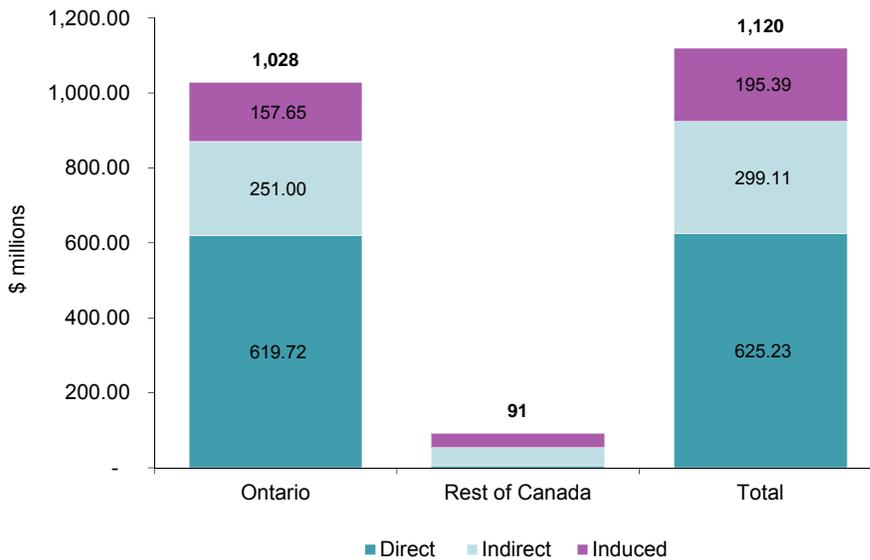


3.2 Labour Income

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 3, it is estimated that the total **Labour Income** that will be generated from the NWEHS is **\$1.12 billion**. Of this impact, approximately \$1.02 billion, or 92 percent, will be generated within Ontario. The remaining \$0.91 billion, or 8 percent, will be generated in other provinces.

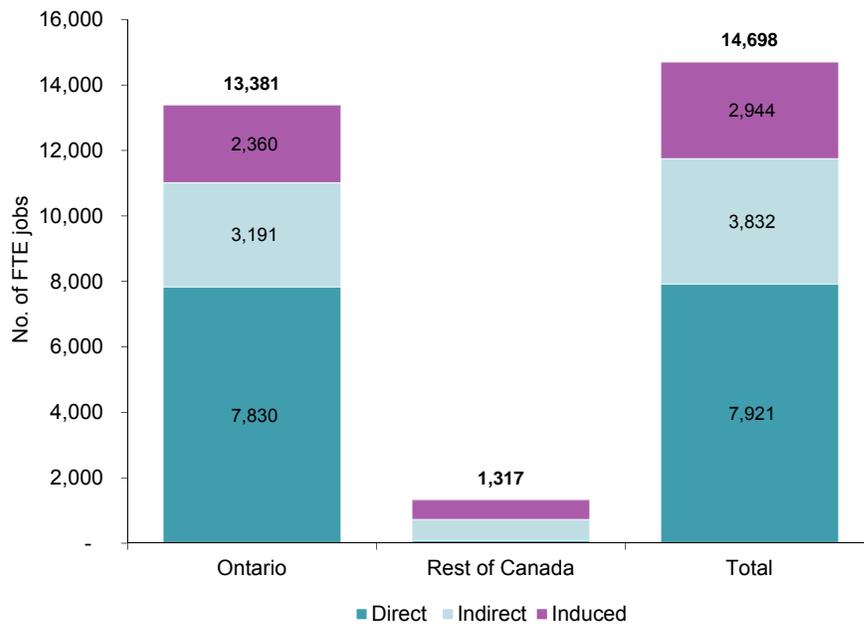
Figure 3. Labour Income Impact from NWEHS (\$ millions)



3.3 Employment Impact

As shown in Figure 4, this study estimates that the NWEHS will generate **14,698 full-time employment positions ("FTE")**, of which 13,381 positions (or 91 percent) will be located in Ontario and the remaining 1,317 will be located outside of the province.

Figure 4. Employment Impact from NWEHS (\$ millions)



It is important to note that one FTE is measured as one full-time position that is held for one year. Given that the construction of the hospital is estimated to be over a 3 year period, this value cannot be interpreted as the number of “jobs” that will be created over the course of the construction period. Rather, it is the number full-time equivalent employment positions created based on the average number of hours worked in full time jobs in one year. Thus, one person employed by this project full time over the course of the 3 year construction period would count as 3 FTE positions for the purposes of reporting employment impacts.

3.4 Government Revenue

This section summarizes government 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 **\$210 million of federal, provincial, and municipal taxes on products and taxes on production**. Of this amount, \$90 million (43 percent) is collected by the Government of Ontario, \$39.7 million (19 percent) by the Government of Canada and \$68.6 million (33 percent) by municipal governments in Ontario. The remaining \$11.4 million (5%) of government revenue is generated through provincial and municipal revenues in other provinces.

Table 5 summarizes government revenue generated by the NWEHS.

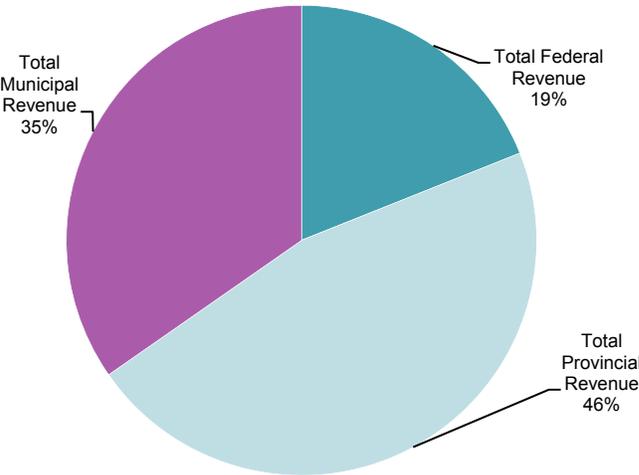
Table 5. Government Revenue Generated by the NWEHS

Federal, Provincial and Municipal Revenue Generated from NWEHS (\$ thousands)			
	Ontario	Rest of Canada	Total
Federal			
Taxes on products	36,282	2,773	39,054
Federal trading profits	45	5	50
Federal gas tax	3,548	514	4,062
Federal excise tax	154	16	170
Federal duty tax	2,196	286	2,482
Federal environment tax	-	-	-
Federal air transportation tax	288	33	321
Federal sales tax (GST and HST)	26,846	1,684	28,530
Import duties	3,204	236	3,440
Taxes on production	654	40	694
Total Federal Revenue	36,936	2,813	39,749
Provincial			
Taxes on products	70,969	4,493	75,462
Provincial environment tax	218	172	391
Provincial gallon tax	824	79	903
Provincial trading profits	5,304	901	6,205
Provincial gas tax	5,471	885	6,355
Provincial amusement tax	613	3	616
Other provincial consumption taxes	1,905	590	2,495
Provincial sales tax	34,215	1,464	35,679
Provincial harmonized sales tax (H.S.T.)	22,419	398	22,817
Taxes on production	19,122	2,704	21,826
Total Provincial Revenue	90,091	7,196	97,288
Municipal			
Taxes on products	-	15	15
Municipal amusement tax	-	1	1
M.S.T.	-	15	15
Taxes on production	68,601	4,165	72,766
Total Municipal Revenue	68,601	4,196	72,797
Total Government Revenue	195,628	14,205	209,833

As displayed in Table 5, the estimated Municipal Revenue impact in Ontario is \$68.6 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 \$68.6 million Municipal Revenue impact in Ontario could be realized in the Windsor-Essex region.

Figure 5 below provides a breakdown of the taxes generated by different levels of government.

Figure 5. Breakdown of Government Revenue Impacts from NWEHS

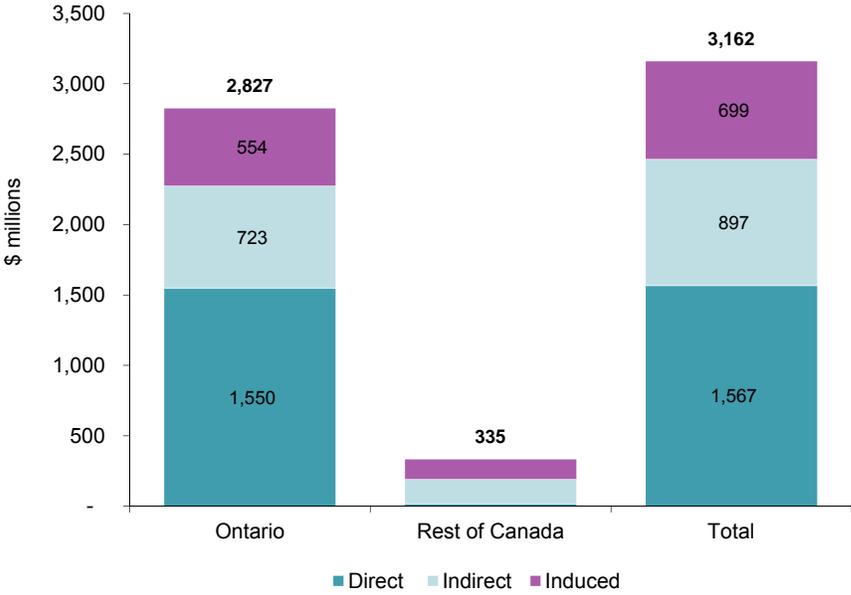


3.5 Gross Output

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, \$2.83 billion, or 90 percent, is generated in Ontario and \$0.335 billion is generated outside of the province. Figure 6 provides a detailed breakdown of the gross output of the industry by direct, induced and indirect impact.

Figure 6. 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

The Windsor-Essex region has had one of the highest unemployment rates in Canada over the past 5 years.⁴ 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 has been 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 has reduced its employment in the City from 6,500 jobs to about 1,600.
- In a little over a decade, employment at GM has fallen to nil from about 5,000.
- Employment at Chrysler has fallen by around 10,000 employees from the 1980s.⁵

The table below summarizes Windsor’s labour force statistics in July 2014 and 2015. Although the unemployment rate has fallen over the past year, it is still significantly above the national average of 6.8 percent.

⁴ Thompson, S., (10 July 2015). “Windsor has been Canada’s most unemployed city for more than five years.” *The Windsor Star*.

⁵ Pearson, Craig, (4 September 2015). “What can be done? Windsor scopes highest unemployment rate...again.” *The Windsor Star*

Table 6. Windsor Labour Force Statistics in July 2014 and 2015.

Windsor Labour Force Statistics			
	Jul-14	Jul-15	Change
Population ('000s)	277.6	279.6	2
Labour force ('000s)	169.6	181	11.4
Employment ('000s)	153.6	164.8	11.2
Unemployment ('000s)	16	16.2	0.2
Participation rate (%)	61.1	64.7	3.6
Unemployment rate (%)	9.4	9	-0.4
Employment rate (%)	55.3	58.9	3.6

Source: Statistics Canada (2015). Labour force characteristics, unadjusted, by census metropolitan area. Windsor, Ontario. Available at: <http://www.statcan.gc.ca/tables-tableaux/sum-som/01/cst01/ffss04h-eng.htm>

In 2013, there were approximately 22,000 businesses in the Windsor-Essex region, majority of which are small- and medium-sized businesses (i.e. less than 500 employees). This is shown in Table 7 below.

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 - June 2013
Indeterminate*	11,149
1-4 employees	5,160
5-9 employees	2,245
10-19 employees	1,522
20-49 employees	1,068
50-99 employees	336
100-199 employees	160
200-499 employees	88
500 + employees	28
Total	21,756

*Number of employees fluctuates.

Source: Windsor-Essex Economic Development (2015). Windsor Essex Region – Employers. Available at: <http://www.choosewindsor-essex.com/?q=node/816>

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. For example, there were approximately 2,800 construction-related companies in the Windsor-Essex region in 2013, representing 13 percent of total businesses in the region. The construction industry in the Windsor-Essex region provided almost 14,000 jobs in 2013 and is forecasted to provide approximately 15,000 jobs by 2020, which is around the time that the NWEHS is expected to begin construction. The table below summarizes the number of construction-related companies and jobs in the Windsor-Essex region.

Table 8. 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 (2013)	No. of Jobs (2013)	No. of Jobs (Forecasted 2020)
236	Construction of buildings	732	2,495	2,652
237	Heavy and civil engineering construction	319	811	878
238	Specialty trade contractors	1,324	7,114	7,561
416	Building material and supplies merchant wholesalers	141	931	1,017
417	Machinery, equipment and supplies merchant wholesalers	163	1,102	1,184
444	Building material and garden equipment and supplies dealers	123	1,478	1,576
Total		2,802	13,931	14,868

Source: Windsor-Essex Economic Development (2015). Windsor Essex Region – Employers and Windsor Essex Region – Occupations and Industries. Available at: <http://www.choosewindsor-essex.com/?q=node/816>

Table 9 below summarizes a number of occupations that could benefit from the construction of NWEHS. By 2020, it is forecasted that there will be approximately 13,000 people in the Windsor-Essex region that will be in occupations needed for the construction of NWEHS.

Table 9. Number of Jobs in the Windsor-Essex Region by Occupation, Relevant to Construction

Number of Jobs in the Windsor-Essex Region by National Occupation Classification (“NOC”)			
NOC	Description	No. of Jobs (2013)	No. of Jobs (Forecasted 2020)
A37	Managers in construction and transportation	1,457	1,570
C03	Civil, mechanical, electrical and chemical engineers	1,770	1,757
C05	Architects, urban planners and land surveyors	67	60
C13	Technical occupations in civil, mechanical and industrial engineering	1,112	1,225
C15	Technical occupations in architecture, drafting, surveying and mapping	368	357
H01	Contractors and supervisors, trades and related workers	2,531	2,741
H11	Plumbers, pipefitters and gas fitters	635	526
H12	Carpenters and cabinetmakers	746	652
H13	Masonry and plastering trades	360	303
H14	Other construction trades	818	793
H32	Metal forming, shaping and erecting trades	1,275	1,177
H62	Crane operators, drillers and blasters	98	86
H82	Trades helpers and labourers	1,398	1,604
H83	Public works and other labourers, n.e.c.	107	73
Total		12,742	12,924

Source: Windsor-Essex Economic Development (2015). Windsor Essex Region – Employers and Windsor Essex Region – Occupations and Industries. Available at: <http://www.choosewindsor-essex.com/?q=node/816>

As discussed earlier in Section 3.3, this study estimates that the NWEHS will generate 14,698 FTE positions in Canada over the course of the construction period, of which 13,381 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 Evidence of Economic Impacts from Other Similar Projects

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

- Niagara Health System Care Complex and Walker Family Cancer Centre.
- Humber River Hospital.
- Halton Healthcare Services – New Oakville Hospital.

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 therefore only about 60% of the size of the proposed NWEHS complex. A fact sheet issued with respect to this facility indicates the following:

- At the peak of construction, over 700 workers were at the site daily.
- Over 85% of the trades were performed by local subcontractors.⁶

In the event that local employment impacts are proportional to size, then one might expect that over 1,100 workers will be employed on site at the peak of NWEHS's construction.

The estimate of on-site workers noted above is quite a bit smaller than total employment impacts of 13,381 FTE positions presented in Chapter 3 for the Ontario economy as a whole. The difference reflects the fact that employment impacts estimated using the Statistics-Canada I/O model include all of the jobs generated within the Project's supply chain. These include the indirect jobs at companies producing goods and services used in the construction of NWEHS (for example at suppliers of cement and steel and at professional design firms) as well as the jobs created when the various groups of employees spend their wages and salaries on consumer goods. It can be readily seen that many of these jobs will be off-site. Some of this employment within this broader supply chain will also occur within the local economy. When considering regional economic impacts, these local jobs within the supply chain will supplement the direct on-site employment estimated above. This additional employment is difficult to estimate precisely but will nonetheless represent an additional local benefit.

4.4.2 Humber River Hospital

The Humber River Hospital is a new 1.7 million square foot facility in Toronto that will open in 2015/2016. This facility is therefore comparable in the size to the proposed NWEHS complex. Information released by the project developer indicates that, at the peak of construction, over 1,200 workers were at the site

⁶ Plenary Group, Fact sheet: Niagara Health System Complex and Walker Family Cancer Centre.

daily. This level of employment is consistent with, if even slightly higher than, the estimate derived immediately above.

4.4.3 Halton Healthcare Services – New Oakville Hospital

The Halton Healthcare Services – New Oakville Hospital (“the Halton facility”) is a new 1.5 million square foot hospital in Oakville expected to open in December 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 to those of the Halton facility. Infrastructure Ontario has stated that the Halton facility was a significant economic opportunity for suppliers and contractors in the Halton Region and the Greater Toronto Area.⁷ At the peak of construction, the project developer estimated that there were more than 1,100 workers on site daily.⁸

Table 10 summarizes the evidence of economic impacts from these similar hospital projects in Niagara, Toronto and Oakville. As noted above, this experience suggests that peak employment on-site during the construction phase of NWEHS could amount to between 1,100 and 1,200 positions.

Table 10. Evidence of Economic Impacts from Other Similar Projects

Summary of Economic Impacts from Other Ontario Similar Projects		
Project Name	Project Description	Economic Impacts
Niagara Health System Care Complex	The new health-care complex in St. Catharines will be approximately 970,000 square feet.	At the peak of construction, over 700 workers were at the site daily, many of which were from the Niagara Region.
Humber River Hospital	The new Toronto hospital will be 1.7 million square feet.	At the peak of construction, over 1,200 workers were at the site daily.
Halton Healthcare Services - New Oakville Hospital	The new 1.5 million square foot hospital will be a state-of-the-art facility and include a full range of health services such as complex continuing care, rehabilitation and acute care.	Estimated more than 1,100 workers on site daily, largely drawn from suppliers and contractors in Halton Region and the Greater Toronto Area.

Source: Infrastructure Ontario. (2015). Alternative Financing and Procurement Projects. Available at: <http://www.infrastructureontario.ca/Templates/Projects.aspx?id=2147488309&langtype=1033>

4.4.4 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 has 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. Spread out over the assumed three year construction period, this results in an average on-site employment level during construction of between 500 and 570 workers.⁹ This figure indicates that average on-site employment increases would be significant even if they were evenly spread out over the full duration of construction.

⁷ Infrastructure Ontario. (2015). Halton Healthcare Services – New Oakville Hospital. Available at: <http://www.infrastructureontario.ca/Templates/Projects.aspx?id=2147484243&langtype=1033>

⁸ Ibid

⁹ Estimate assumes 2,000 per person-year.

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 surrounding the proposed new facility is relatively undeveloped at present and development of the site will require widening of both Country Road 42 and Lauzon Road. The addition of public transit routes will also be required.¹⁰

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. 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.

¹⁰ CTV Windsor, (14 July 2015), "Site of new mega hospital revealed".



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