



ASSOCIATION OF CONSULTING
ENGINEERING COMPANIES | NL

ACEC-NL

2021 ECONOMIC VALUE & IMPACT ASSESSMENT

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M|R|S|B

Prepared by:



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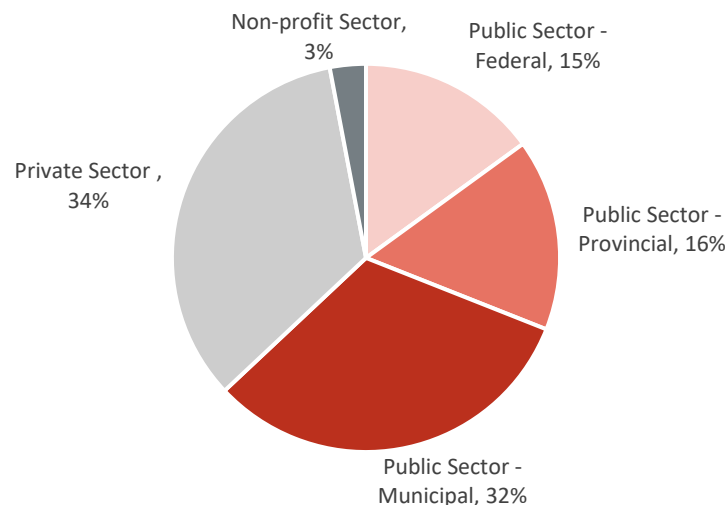
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1 Overview and Methodology

There are 47 firms in Newfoundland and Labrador (NL) whose primary business is the selling of consulting engineering services. Twenty (22) of these firms are members of the Association of Consulting Engineers of NL. These 47 firms provide employment for 814 people in NL with a mean salary for engineers in training of \$75,351 and a mean salary of \$126,396 for professional engineers.¹ While some firms who responded to the survey have a workforce that is between 30%-40% females, others do not employ any females. On average 22% of the workforce was female for survey respondents. Twelve firms indicated the percentage of total revenue that is earned from clients within NL. On average about 95% of revenues are being earned from NL clients. NL consulting engineers are highly dependent on public sector work (63%) and in particular Municipal clients (32%).

Figure 1: Clients by Sector (Survey Respondents)



Engineering consulting services is being provided in all areas in NL: civil, structural, electrical, mechanical, geotechnical, environmental, project management, and owner advisor. Many of the firms are working in multiple areas and multiple specialities within the area.

¹ Clear Picture. (November, 2021). *Atlantic Canada Engineering Salary and Benefits Survey 2021 Report*.

Some of the firms within the province are affiliates of larger regional or national engineering firms however any of the information contained within this report references only services provided by individuals employed within the NL office.

Forty-two percent (42%) of NL consulting engineering firms who responded to the survey are providing services outside of the province but within Canada from offices in NL while 17% of respondent firms are providing services internationally from offices in NL. NL consulting engineering firms are working in all provinces and territories of Canada. Work has also been done internationally in the United States, Ireland, Turkey and the Caribbean.

A survey of the 47 firms whose primary business is the selling of consulting engineering services within NL was undertaken by MRSB Consulting Services. The survey population did not include firms who may have professional engineers on staff but their primary business activity is not the provision of consulting engineering services nor did it include government, manufacturing, or academia who may sell engineering services as a secondary activity to their primary business activities. Fourteen (14) of the firms responded with information on revenues and employee numbers. Those firms within the province who are affiliates of larger regional or national engineering firms were asked to respond with only the revenue and employee numbers relevant to the NL based division. The raw data from the survey was provided by MRSB Consulting Services to our sub-contracted economist, Marcel LeBreton, M.Econ of EcoTec Consultants to conduct input-output modelling and provide economic impact numbers.

MRSB Consulting Services conducted telephone interviews with seven consulting engineering firms to gain context for the value of consulting engineering services to the NL economy, to understand barriers to growth locally and in the export market and to understand the support required to grow their revenue and employee base.

2 Contribution to Economy

2.1 NL consulting engineers support a variety of sectors

Consulting engineering firms in NL play a key role in the economy by supporting the development and growth of other business opportunities in strategic areas of NL's economy such as mining, oil and gas, energy, manufacturing, construction, and aquaculture with the provision of professional engineering services. These firms also support infrastructure development for roads, bridges and wharfs and public institutions like healthcare and education, municipal infrastructure such as water and sewer, and telecommunications, all key underpinnings for supporting the development of stronger communities and a stronger economy.

2.2 NL consulting engineering firms provide services to support net zero and clean energy

Through the Pan-Canadian Framework, the Government of Newfoundland and Labrador has committed to reducing greenhouse gas (GHG) emissions from all sectors of the economy, stimulating clean innovation and growth, and building resilience to a changing climate. This commitment requires multiple partners including the private sector to work together to achieve this commitment.

Fifty-five percent (55%) of NL consulting engineering firms who responded to the survey are providing engineering consulting services in climate change. Thirty-six percent (36%) are providing engineering consulting services in net zero, 27% in clean/sustainable energy from sources that cannot be depleted like wind, solar and hydro, and 18% in clean/renewable energy from sources that naturally replenish like crops, biomatter, and aquaculture.

2.3 NL consulting engineers are able to assist with repatriation of Newfoundlanders

The Government of NL recognizes that sustainable economic growth relies upon the ability to increase our population, expand our skills and grow our workforce. *"The Way Forward on Immigration in Newfoundland and Labrador"* includes a target of welcoming 1,700 immigrants annually. To achieve this the province will have to become a destination of choice for

prospective immigrants looking for a place to work. The retention of skilled workers is also important to growing the population and economy.

The majority of consulting engineering firms interviewed during this engagement indicated that there would be opportunities within their firm in the future to provide positions for former Newfoundlanders, emigrants, and immigrants provided they had the right skill set and that the company was growing. Over 40% of the firms interviewed have been contributing to repatriation over the past five years by attracting Newfoundlanders to come back home.

2.4 NL consulting engineers are providing work experience and employment for local graduates

The consulting engineering firms who were interviewed were supportive of providing work experience for work-term students from the Engineering Co-op Program at Memorial University (MUN) and the Engineering Technology Programs at College of the North Atlantic (CNA), however many of the firms were limited in their ability to provide work experience over the past five years for the following factors:

- No sustained workload to support a work term or enough additional work to grow beyond core group of employees,
- One firm indicated they were not aware of students being available for work terms through either of these institutions, and
- Fee structure under the provincial procurement act and resulting margin does not allow budget to support students.

Both the number of firms hiring and the number of work-term positions available for MUN students has declined in the past three years. Over 40% of the interviewees indicated an intention to hire work-term students from MUN and CNA in the next 12 months. Those that indicated they did not have intention to hire or were unsure provided the following explanations:

- Firm is downsizing,
- Had been unaware of program so no current plans,
- A smaller operation so ability to provide proper supervision for a student is limited,

- The fee structure under the provincial procurement agreement does not provide enough margin to take on students, and
- Lower volume of work reduces capacity to hire students.

The consulting engineering firms who were interviewed were supportive of hiring graduates from the Engineering Co-op Program at MUN and the Engineering Technology Programs at CNA, however the ability of firms to hire in the last three years has reduced due to following factors:

- Layoffs of existing staff due to decline in work,
- Need for intermediate and senior people rather than new graduates,
- Searching for someone with specific business information modelling software knowledge (Revit),
- Not enough work to grow beyond core group of employees due to tight margins and lack of new work,
- Change in the economy over the past five years has resulted in the engineering market declining in NL for the first time in 20 years.

One firm interviewed indicated they preferred meeting staffing needs by hiring for work-term students on a continuous basis.

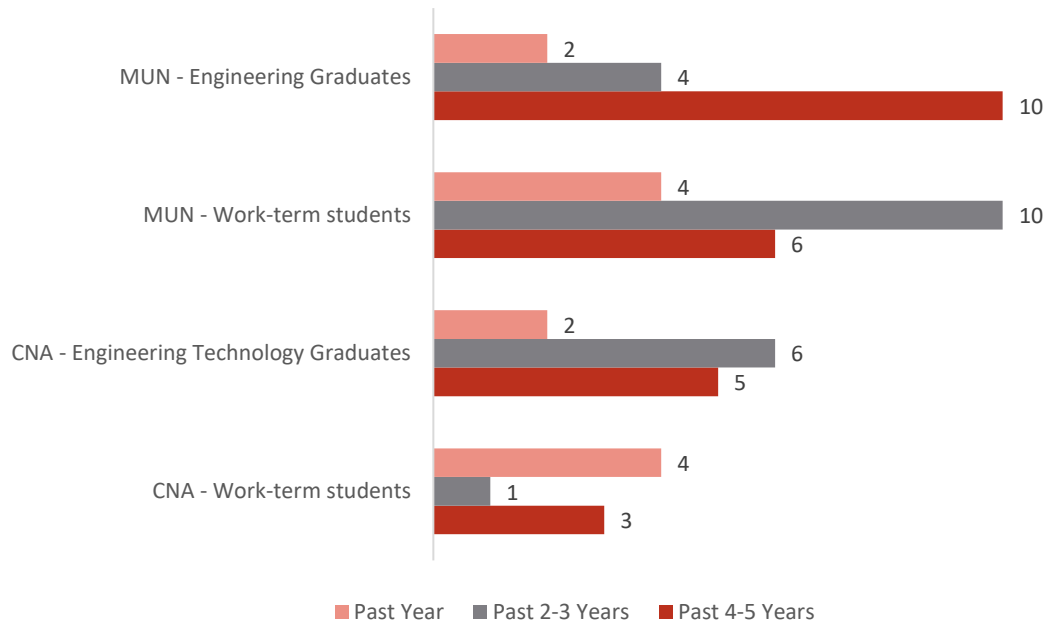
The number of firms hiring and the number of positions available for MUN graduates has declined in the past five years, while CNA has seen a decline in the number of firms hiring graduates and the number of graduates being hired in the past three years.

Approximately 50% of the interviewees indicated an intention to hire graduates from MUN and CNA in the next 12 months. Those that indicated they did not have intention to hire or were unsure provided the following explanations:

- No need at the current time for additional resources,
- Preference for work-term students,
- Two years before a new graduate becomes productive and mentoring and oversight comes at a cost,

- Looking for experience and fee structure under provincial procurement does not allow enough margin for the cost associated with mentoring,
- Waiting for a specific individual to graduate in 2024,

Figure 2: Number of students and graduates hired in past 5 years (7 interviewees)



2.5 NL consulting engineers have a significant economic impact

MRSB Consulting Services sub-contracted EcoTec Consultants a firm specialized in the field of economic impact studies and economic development to determine the economic impact of the consulting engineering firms located in NL on the NL economy using input-output analysis. Input-output analysis is a financial model of an economy’s production system. It shows the interconnections that exist between the various sectors of the economy when goods and services are produced. The revenues and expenditures of a particular sector are used to drive an input-output model to derive economic impact. The model generates impact estimates for gross domestic product (GDP), employment, and tax revenues at the direct, indirect, and induced levels.

GDP is one of the primary indicators used to gauge the health of the economy. It is essentially

the size of the economy and represents the total dollar value of all goods and services produced within the borders of the province in a year.

Employment refers to the total person years (full-time equivalent jobs) generated by the facility and its sustaining activities. For purposes of this model, a person-year is defined as someone who works about 2,000 hours per year (equivalent to 40 hours a week over a 50 week period).

An input-output model also allows for an estimation of the **taxes levied** on economic activity. Data from Provincial and Federal tax legislation are used to obtain an estimate of these taxes. This calculation is in the form of an average tax rate multiplied by the salaries, in the case of individual income tax. Indirect taxes are estimated for the various transactions that take place in the economy between industries. Taken together, these calculations provide an estimate of total income taxes associated with the sector, and of the taxes collected by the various levels of government.

Direct impacts arise from the expenditures made in carrying out the identified activities: e.g., the sales, income, and employment created by consulting engineering firm's related purchases in the province.

Indirect impacts result from the subsequent purchases by suppliers of materials and services to sustain the original and derivative expenditures.

The **induced impacts** emerge when the workers in the sectors stimulated by the initial and indirect expenditures spend their additional incomes on consumer goods and services.

2.6 Consulting engineering firms contribute \$122.8 million to provincial GDP annually

Consulting engineering firms in NL contributed approximately \$122.8 million to GDP over the 2021 year. In total the professional, scientific and technical services category of services is estimated to have contributed \$1.2 billion to the GDP in 2020². Assuming the GDP would be

² Government of Newfoundland and Labrador, Department of Finance. March 29, 2022. St. John's, NL: *Budget 2022 Change is in the Air, The Economy*.

similar for 2021, consulting engineering firms GDP contribution represents 11% of this total. On a comparative basis, industries such as agriculture, forestry and logging contribute 98.3 million in GDP while fishing, hunting and trapping contribute 294.7 million in GDP. GDP is one of the primary measures used to evaluate the health of the economy.

Table 1: Consulting Engineering Firms Contribute \$122.8 million to NL's GDP Annually

	NL	Canada (NL based activities)
Direct	\$78,444,000	\$78,444,000
Indirect	14,394,000	30,500,000
Induced	29,940,000	48,700,000
Total	<u>\$122,778,000</u>	<u>\$157,644,000</u>

2.7 Consulting engineering firms create approximately 1,172 person years of employment annually

A total of 814 person years of employment were generated by the consulting engineering firms located in NL. Of the 1,172 person years of employment 814 is direct jobs with 358 being indirect and induced.

2.8 Consulting engineering firms contribute approximately \$28.9 million in taxes annually

The three levels of government recovered an estimated \$28.9 million in tax revenues from consulting engineering firms in 2021. The federal government collected \$11.8 million, the provincial government collected \$14.1 million, while the municipal government collected just under \$1 million.

Table 2: Consulting Engineering Firms Contribute \$28.9 million to Taxes Annually

	Direct	Indirect	Induced	Total
Federal				
Federal income tax	\$4,651,000	\$490,000	\$383,000	\$5,524,000
GST & other direct taxes	110,000	80,000	1,994,000	2,184,000
Federal tax on profits	<u>3,374,000</u>	<u>358,000</u>	<u>403,000</u>	<u>4,135,000</u>
Total Federal Tax Revenues	<u>8,135,000</u>	<u>928,000</u>	<u>2,780,000</u>	<u>11,843,000</u>
Province				
Provincial income tax	3,814,000	401,000	312,000	4,527,000
Sales tax & other direct taxes	327,000	238,000	5,087,000	5,652,000
Provincial tax on profits	<u>3,180,000</u>	<u>337,000</u>	<u>380,000</u>	<u>3,897,000</u>
Total Provincial Tax Revenues	<u>7,321,000</u>	<u>976,000</u>	<u>5,779,000</u>	<u>14,076,000</u>
Municipalities				
Property taxes	<u>77,000</u>	<u>56,000</u>	<u>811,000</u>	<u>944,000</u>
Total Tax Impact - NL	<u>\$15,533,000</u>	<u>\$1,960,000</u>	<u>\$9,370,000</u>	<u>\$26,863,000</u>



3 Current Challenges

3.1 Government Procurement Act

Consulting engineering firms interviewed during this engagement spoke to challenges with the Procurement Policy of the Government of Newfoundland and Labrador as it related to the procurement of services for projects funded by the province. They indicated that since the procurement act was changed in 2018 engineering consultants are being treated as a commodity, rather than professional services, resulting in services mainly being price-based decisions with no project specific technical evaluation. This emphasis on lowest cost drives the price down across the industry with many firms deliberately lowering the price which devalues the industry and affects the quality of the work. While there is an assumption by Government that the lowest price is a fair and reasonable price, it has resulted in an extremely contentious environment where firms are being forced to reduce their profit margin to below what in the past would have been deemed to be a fair and reasonable pricing structure. This low fee structure is a barrier to being able to take on junior staff who require mentoring, as there is no room in this fee structure to support time for mentoring and supporting the learning of new entrants to the field.

It was also indicated that there used to be guidelines for minimum fees which were based on the complexity of the engagement and contract amount that had been adopted by the province as fair and reasonable, however these no longer appear to be followed.

The fee structure has reduced the ability to be successful in obtaining engagements outside of your area of the province as the added travel cost would make a bid less competitive with another firm in the region where the project is located.

There is no ability for consulting engineers to benefit from the long-standing experience and knowledge they may have built with various municipalities and can result in municipalities working with a number of different engineering firms on various phases of a project and can cause inefficiencies for the client such as loss of continuing knowledge and understanding of a client's existing infrastructure and issues, often resulting in a duplication of services by a consultant who is unfamiliar with the clients infrastructure and issues giving rise to extra costs.

The speed at which procurement decisions are being made is not reasonable in length, extending sometimes to eight weeks for even small projects resulting in firms putting in multiple bids that they would not have the capacity to undertake if they were successful on all. This delay in award has also resulted in some firms having to lay off staff because of not knowing how long the award process will take.

There is also a fear that not bidding on projects when invited, even when you know they will not be profitable could result in your firm being removed from the qualified supplier list.

The current situation has the potential risk that some firms will have to downsize or even close altogether. This will lead to a loss of locally available expertise in the engineering field and families leaving the province for employment in other locations.

3.2 Atlantic Accord

One interviewee spoke to the Atlantic Accord, a memorandum of agreement between the Government of Canada and the Government of Newfoundland and Labrador on offshore oil and gas resource management and revenue sharing. Under the economic growth and development objectives legislation is in place to ensure that Newfoundland residents are to be given first consideration for resulting opportunities. The interviewee indicated that this procurement law has been forgotten about and is not being enforced or adhered to.

4 Support Required

4.1 Establish open line of communication with government

It was suggested that a joint committee of government and industry that meets quarterly to bring forth problems and potential solutions for discussion should be established. It is hoped that this type of process would encourage government to proactively reach out to the engineering sector to understand their needs.

4.2 Lobby government to modify procurement act with regards to professional services

There are several areas in the current procurement process for engineer consulting services that are causing ongoing challenges for the sector and there is a need for an open discussion with government on these issues:

- A change in procurement process to move to a qualification-based median fee selection process,
- Adoption of a more reasonable financial evaluation process for professional services that is used throughout the industry,
- Excluding travel costs and other expenses from the lowest cost evaluation to provide an equal opportunity for all NL firms regardless of location,
- Expense rates set at government approved rates that may be dated and not reflective of actual costs,
- Recognition that NL firms are capable of providing a high level of service quality and expertise,
- Improved scoping of Request for Proposal documents to provide the ability to better articulate the value that can be brought to the engagement

5 Conclusion

NL consulting engineering firms are significant contributors to the NL economy however the operating environment has been challenging over the past two years with the lowest cost selection process of the Procurement Act reducing margins and limiting the ability for NL consulting engineering firms to grow, hire, and mentor new graduates. Consulting engineering firms would welcome the opportunity for discussion with Government on ways to address current challenges and to support and grow the sector.

