

### Note to Reader

The estimates presented within this report have been provided to Chantier Davie Canada Inc. ("Davie") for the purpose of analyzing the economic contribution of Davie's operations and capital investments to the Canadian and Ouébec economies.

This study does not represent a cost-benefit analysis for Davie or any other stakeholder and does not represent a comparison of the potential economic impact of Davie's activities to the potential impact of an alternative use of resources. In particular, the study does not examine the potential costs of pursuing the capital investments or operational activities, including the opportunity costs for Davie and other stakeholders.

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We believe that our analyses must be considered as a whole and that selecting portions of the analyses or the factors considered by it, without considering all factors and analyses together, could create a misleading view of the issues related to the report. Amendment of any of the assumptions identified throughout this report could have a material impact on our analysis contained herein. Should any of the major assumptions not be accurate or should any of the information provided to us not be factual or correct, our analyses, as expressed in this report, could be significantly different.

### Davie's Activities in Canada at a Glance

#### Summary of Davie's Activities, Expenditures, and Revenues in Scope

Lévis, Québec is the cradle of Canadian shipbuilding and Davie's home since 1825. Canada's longest established, largest, and highest capacity shipbuilder, Davie has been a cornerstone of Canada's rich maritime heritage for almost 200 years. In that time, Davie has adapted to and defined radical shifts in shipbuilding for hundreds of Canadian and international customers. Davie has delivered more than 700 ships – from sailing clippers to ultra-modern naval ships.

Davie specializes in designing, building and sustaining world-class, specialized, mission-critical ships that enable its customers to protect national and economic security, or fulfill acute business needs. Davie's workforce combines international expertise with local talent, and its high capacity, advanced production facilities consistently deliver world-class products and services to the following sectors:



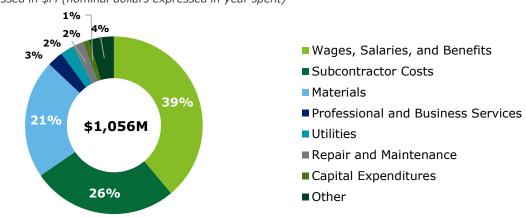




- Davie's operating and capital expenditures totaled approximately \$1,060M between 2012 to 2019
- Davie directly employed an average of 850 people per year between 2014 to 2019 (measured in full-time equivalents)1, representing roughly 40% of total employment in Québec's ship and boat building industry<sup>2</sup>
- In 2019, Davie's direct employees were paid an annual average of \$89,400 approximately 19% higher than the national average salary and 27% higher than the average salary in Québec<sup>3</sup>
- According to data provided by Davie, the expected revenues of future contracts range from approximately **\$8,250M** to **\$11,880M** over the period from 2020 to 2040

### **Davie's Total Operating and Capital Expenditures (2012-2019)**





<sup>1.</sup> Average of Davie's direct employment between 2014 and 2019 as Davie was ramping up production in 2012 and 2013 (i.e., employment levels during the years 2014 to 2019 are indicative of average employment in a typical year).

<sup>2.</sup> Source: Statistics Canada, Table 36-10-0489-01: Labour Statistics Consistent with the System of National Accounts (SNA), 2020. Notes: Total employment in the provincial ship and boat building industry reflects the average number of fulltime equivalent ("FTE") employees from 2014 to 2018 (i.e., most recent years available). This was computed by dividing the total number of hours worked in the ship and boat building industry by the average annual number of FTE hours.

<sup>3.</sup> Source: Statistics Canada, Table 36-10-0489-01: Labour Statistics Consistent with the System of National Accounts (SNA), 2020, Notes: The average national and provincial salaries reflect the total compensation (i.e., wages, salaries, and benefits) received by FTE employees in Canada and Québec, respectively. This was computed by dividing the total compensation received by employees by the number of FTE jobs.

## Davie's Historical and Projected Economic Contribution in Québec

### **Snapshot of Historical Economic Contribution (2012-2019)**

Accounting for the direct, indirect, and induced effects, it is estimated that over the last eight years, Davie's contributions to Québec included:

- \$2.6 billion to Québec's Gross Economic Output
- \$1.3 billion to Québec's Gross Domestic Product
- \$0.2 billion to Québec's Government Revenues
- 1,900 jobs were created or sustained annually in Québec on average



### **Snapshot of Projected Economic Contribution (2020-2040)**<sup>1</sup>



Accounting for the direct, indirect, and induced effects, it is estimated that Davie contributions to Québec over the next 20 years could include:

- \$1.90 of Gross Economic Output and \$1.00 of Gross Domestic Product for the Québec economy for every dollar spent by Davie
- \$6.9 to \$10 billion to Québec's Gross Domestic Product
- \$1.0 to \$1.4 billion to Québec's Government Revenues
- 2,900 to 4,200 jobs could be created or sustained annually in Québec on average

	Projected Contribution (2020-2040)
\$1,056M in operating and capital expenditures	<b>\$8,250M</b> to <b>\$11,880M</b> in expected revenues
Direct and Indirect: \$2,180M   Induced: \$470M  Total: \$2,650M	Direct and Indirect: \$11,200M to \$16,130M   Induced: \$1,650M to \$2,380M Total: \$12,850M to \$18,510M
Direct and Indirect: \$1,000M   Induced: \$290M  Total: \$1,290M	Direct and Indirect: \$5,950M to \$8,560M   Induced: \$990M to \$1,430M Total: \$6,940M to \$9,990M
Direct and Indirect: \$690M   Induced: \$140M  Total: \$830M	Direct and Indirect: \$3,960M to \$5,690M   Induced: \$460M to \$670M Total: \$4,420M to \$6,360M
Direct and Indirect: \$90M   Induced: \$90M  Total: \$180M	Direct and Indirect: \$640M to \$920M   Induced: \$310M to \$450M Total: \$950M to \$1,370M
Direct and Indirect: 1,485 Jobs   Induced: 405 Jobs  Total: 1,890 Jobs created or sustained	Direct and Indirect: 2,460 to 3,550 Jobs   Induced: 485 to 700 Jobs  Total: 2,945 to 4,250 Jobs created or sustained
	Direct and Indirect: \$2,180M   Induced: \$470M  Total: \$2,650M  Direct and Indirect: \$1,000M   Induced: \$290M  Total: \$1,290M  Direct and Indirect: \$690M   Induced: \$140M  Total: \$830M  Direct and Indirect: \$90M   Induced: \$90M  Total: \$180M  Direct and Indirect: 1,485 Jobs   Induced: 405 Jobs

Note: All dollar figures presented on this page are expressed in terms of real 2019 Canadian dollars, excluding Davie's total expenditures (which are presented in nominal terms).

1. An approximate timeline is used for reporting purposes (e.g., 2020-2040), however the economic contribution estimates are based on real program schedules, where the first program started in 2018 and the last program is expected to be complete by 2041.

### Davie's Historical and Projected Economic Contribution in Canada

### **Snapshot of Historical Economic Contribution (2012-2019)**

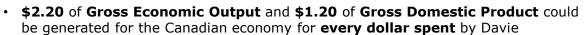
Accounting for the direct, indirect, and induced effects, it is estimated that over the last eight years, Davie's contributions to Canada included:

- \$2.9 billion to Canada's Gross Economic Output
- \$1.4 billion to Canada's Gross Domestic Product
- \$0.3 billion to Canada's Government Revenues
- 2,100 jobs were created or sustained annually in Canada on average



### **Snapshot of Projected Economic Contribution (2020-2040)**<sup>1</sup>

Accounting for the direct, indirect, and induced effects, it is estimated that Davie contributions to Canada over the next 20 years could include:



- 7.8 to \$11.2 billion to Canada's Gross Domestic Product
- \$2 to \$2.9 billion to Canada's Government Revenues
- 3,300 to 4,700 jobs could be created or sustained annually in Canada on average

*	Canada	Historical Contribution (2012-2019)	Projected Contribution (2020-2040)	
<b></b>	Total Expenditures / Revenues	\$1,056M in operating and capital expenditures	<b>\$8,250M</b> to <b>\$11,880M</b> in expected revenues	
	Gross Economic Output	Direct and Indirect: \$2,290M   Induced: \$660M Total: \$2,950M	Direct and Indirect: \$12,320M to \$17,740M   Induced: \$2,300M to \$3,310M <b>Total: \$14,620M to \$21,050M</b>	
<u>₫</u>	<b>Gross Domestic Product</b> (GDP)	Direct and Indirect: \$1,050M   Induced: \$390M Total: \$1,440M	Direct and Indirect: \$6,470M to \$9,310M   Induced: \$1,330M to \$1,910M <b>Total: \$7,800M to \$11,220M</b>	
	Labour Income	Direct and Indirect: \$720M   Induced: \$190M  Total: \$910M	Direct and Indirect: \$4,270M to \$6,130M   Induced: \$640M to \$910M Total: \$4,910M to \$7,040M	
<u>~</u> %	Government Revenues and Taxes (Federal, Provincial and Municipal)	Direct and Indirect: \$170M   Induced: \$160M  Total: \$330M	Direct and Indirect: \$1,400M to \$2,010M   Induced: \$590M to \$860M <b>Total: \$1,990M to \$2,870M</b>	
	<b>Employment</b> (Average Annual Full-Time Equivalents)	Direct and Indirect: 1,555 Jobs   Induced: 545 Jobs <b>Total: 2,100 Jobs created or sustained</b>	Direct and Indirect: 2,655 to 3,830 Jobs   Induced: 630 to 905 Jobs  Total: 3,285 to 4,735 Jobs created or sustained	

Note: All dollar figures presented on this page are expressed in terms of real 2019 Canadian dollars, excluding Davie's total expenditures (which are presented in nominal terms).

1. An approximate timeline is used for reporting purposes (e.g., 2020-2040), however the economic contribution estimates are based on real program schedules, where the first program started in 2018 and the last program is expected to be complete by 2041.

## Davie's Projected Economic Contributions by Work Program in Québec (2020-2040)

The table below summarizes the potential economic contributions (total of direct, indirect, and induced contributions) of Davie's prospective work programs to Québec's economy

	Gross Eco	onomic Output	Gross Domestic Product (GDP)	Labour Income	Government Revenues (Provincial and Municipal)	Employment (Annual Average Full-Time Equivalents)
Medium Icebreaker Program	\$465M		\$250M	\$160M	\$35M	720 jobs created or sustained annually
Halifax Class Work Period Contract	\$2,335M		\$1,260M	\$805M	\$175M	2,390 jobs created or sustained annually
Transport Canada Ferries Program	\$1,170M to \$2,2	.45M \$	630M to \$1,210M	\$400M to \$770M	\$85M to \$165M	2,650 to 5,100 jobs created or sustained annually
Madeleine (Jean Lapierre)	\$625M to \$1,18	80M	\$335M to \$635M	\$215M to \$405M	\$45M to \$85M	1,210 to 2,285 jobs created or sustained annually
Holiday Island	\$545M to \$1,00	55M s	\$295M to \$575M	\$190M to \$365M	\$40M to \$80M	1,440 to 2,815 jobs created or sustained annually
Program Icebreakers	\$6,545M to \$8,7	705M \$3	,530M to \$4,700M	\$2,250M to \$2,995M	\$485M to \$645M	2,505 to 3,335 jobs created or sustained annually
Polar Class Icebreaker	\$2,335M to \$4,7	750M \$1	,260M to \$2,565M	\$805M to \$1,635M	\$175M to \$355M	1,425 to 2,895 jobs created or sustained annually

**Note 1:** Due to rounding differences, the program-by-program totals in this table may not exactly align with the total projected contributions. **Note 2:** In this table, *Government Revenues and Taxes* include provincial and municipal government revenues. **Note 3:** In this table, the direct, indirect, and induced contributions to average annual employment are based on the expected duration of each work program. For example, Davie's work on the Medium Icebreaker Program could create or sustain an approximate total of 2,460 FTEs in Québec over the expected project duration of 3.4 years (i.e., the approximate number of years between the start of steel cutting/docking and the delivery of the vessels) – which results in an estimated average of roughly 720 FTEs created or sustained annually in Québec. As a result of this approach, the sum of Davie's contributions to employment across all work programs will not equal the aggregate view of Davie's projected contributions to employment (e.g., the projected contributions presented on the previous page) as the total projected projections reflect average annual employment over the 2020-2040 period.

## Davie's Projected Economic Contributions by Work Program in Canada (2020-2040)

The table below summarizes the potential economic contributions (total of direct, indirect, and induced contributions) of Davie's prospective work programs to the Canadian economy

	Gross Economic Output		Labour Income	Government Revenues (Federal, Provincial, and Municipal)	Employment (Annual Average Full-Time Equivalents)
Medium Icebreaker Program	\$530M	\$280M	\$180M	\$70M	805 jobs created or sustained annually
Halifax Class Work Period Contract	\$2,655M	\$1,415M	\$890M	\$365M	2,660 jobs created or sustained annually
Transport Canada Ferries Program	\$1,330M to \$2,555M	\$710M to \$1,360M	\$445M to \$855M	\$180M to \$350M	2,950 to 5,685 jobs created or sustained annually
Madeleine (Jean Lapierre)	\$710M to \$1,340M	\$380M to \$715M	\$235M to \$450M	\$95M to \$185M	1,345 to 2,545 jobs created or sustained annually
Holiday Island	\$620M to \$1,210M	\$330M to \$645M	\$210M to \$405M	\$85M to \$165M	1,605 to 3,140 jobs created or sustained annually
Program Icebreakers	\$7,440M to \$9,900M	\$3,970M to \$5,280M	\$2,495M to \$3320M	\$1,015M to \$1,350M	2,795 to 3,715 jobs created or sustained annually
Polar Class Icebreaker	\$2,660M to \$5,405M	\$1,415M to \$2,880M	\$890M to \$1,810M	\$365M to \$740M	1,585 to 3,225 jobs created or sustained annually

Note 1: Due to rounding differences, the program-by-program totals in this table may not exactly align with the total projected contributions. Note 2: In this table, Government Revenues and Taxes include federal, provincial, and municipal government revenues. Note 3: In this table, the direct, indirect, and induced contributions to average annual employment are based on the expected duration of each work program. For example, Davie's work on the Medium Icebreaker Program could create or sustain an approximate total of 2,740 FTEs across Canada over the expected project duration of 3.4 years (i.e., the approximate number of years between the start of steel cutting/docking and the delivery of the vessels) – which results in an estimated average of roughly 800 FTEs created or sustained annually across Canada. As a result of this approach, the sum of Davie's contributions to employment across all work programs will not equal the aggregate view of Davie's projected contributions to employment (e.g., the projected contributions presented on the previous page) as the total projected projections reflect average annual employment over the 2020-2040 period.

## Structuring Impacts of Davie's Activities

Beyond the benefits described below, Davie plans to invest up to **\$35M** – and at least as much in direct investments through ITB Indirect Transactions by Davie and eligible parties<sup>1</sup> – in programs that support technology and innovation, human capital development, and industrial development through the NSS Value Proposition



## INNOVATION AND TECHNOLOGY TRANSFER

Davie supports innovation in three key ways:

- 1. Creating innovative solutions to meet clientspecific needs
- 2. Developing innovative production and operational processes in the shipyard: For example, Davie is the first shipyard in North America to implement a fully integrated AVEVA Enterprise Resource Management solution to support every stage of a project from design to procurement and construction
- **3. Supporting innovation beyond the shipyard:** For example, Davie funds cyber security research in the maritime industry to help mitigate against highly complex and sophisticated cyber attacks



## LOCAL SUPPLIER BASE DEVELOPMENT

- As Canada's largest and highest capacity shipbuilder, Davie enables the development of local supplier industries by creating demand for locally produced goods and services
- Between 2012 and 2019, Davie's indirect economic contribution generated by supplier activities amounted to roughly \$460M in GDP and created or sustained an average of 690 annual FTEs for Canada's economy
- Davie currently maintains a supplier base of over 1,300 firms across Canada
- Davie supports its suppliers through enabling growth and development, export opportunities, innovation and technology, and reputational gains



## HUMAN CAPITAL DEVELOPMENT

- Davie contributes to the human capital development of its employees by offering training opportunities such as health and safety, technical skills training, and rescue training
- Davie enables the growth of small businesses by providing supplier-specific training opportunities
- Davie offers its unique facilities to the community at large for training purposes
- Davie also partners with universities and research organizations to advance research in shipbuilding, such as in green technologies
- As Davie is a major employer in Québec and Canada, it spends a minimum of 1% of its annual payroll on internal training and skills development

<sup>1.</sup> Based on Davie's estimate of the minimum value of direct investments required to meet its ITB obligations with respect to the Program Icebreaker and potential Polar Icebreaker construction programs

### Structuring Impacts of Davie's Activities: Case Studies

Davie's major projects and initiatives illustrate how it contributes long-term, structuring benefits to the Québec and Canadian economies

#### LNG FERRIES:

#### **GREEN INNOVATION**

- Davie successfully delivered the first two LNGpowered ferries ever built in North America in 2018
- By combining innovations in automation, green maritime technology, and safety requirements, the ferries strengthened Davie's reputation in delivering technologically advanced vessels
- The ferries can be powered completely by LNG thereby reducing greenhouse gas emissions by roughly 25% as the combustion of LNG does not emit soot, dust, or fumes
- Furthermore, LNG emits 90% less nitrogen oxide (NO<sub>2</sub>) and 100% less sulphur (SO<sub>2</sub>) and fine particle emissions compared to conventional diesel



### **DAVIE SUPPLIERS ASSOCIATION:** SUPPLIER DEVELOPMENT

- The Davie Supplier Association (l'Association des Fournisseurs de Chantier Davie Canada) was founded in 2018 and has grown to approximately 900 members across Québec since its inception
- The Association plays a key role in informing businesses about opportunities in the shipbuilding industry, ultimately strengthening supply chains across Canada
- This is achieved through broad representation of Davie's suppliers both across regions and across industries
- In addition, the Association helps Davie's suppliers access key training and development opportunities that are important for supply chain growth and development



### **ASTERIX:** INNOVATION, SUPPLIER DEVELOPMENT, AND PEOPLE AND CULTURE

- Asterix was developed as part of Project Resolve, an initiative to convert a 1,700 twenty-foot equivalent unit (TEU) commercial container vessel into a combat support ship
- Asterix is the largest and greenest naval supply vessel built in Canada, requiring significant human capital efforts to be built in a record 18 months
- A total of 1,400 Canadians built and delivered Asterix; the jobs created included fitters, welders, engineers, electricians, and carpenters
- Asterix's success and multi-functional design has attracted the attention of international navies and has led to the potential to export a second Resolve Class Ship



## Other Structuring Impacts of Davie's Activities

Moreover, Davie's operations contribute to a variety of other structuring impacts including **economic** diversification, catalyzing third-party investment, cross-sectoral linkages, and foreign direct investment attraction



#### **ECONOMIC DIVERSIFICATION**

Having a strong shipbuilding industry helps grow Québec's manufacturing sector overall but also helps to diversify Québec's manufacturing sector. Manufacturing sector jobs are often high-skilled and well-paying. Davie's activities directly contribute to jobs and GDP within shipbuilding thereby contributing to diversifying Québec's economy.



### **CATALYZING THIRD PARTY** INVESTMENT

Davie's activities are expected to lead to follow-on investments in the economy by stimulating additional investment by third-parties. In the past, Davie's suppliers have made investments in their businesses, particularly in relation to R&D, that have benefits beyond their relationship with Davie.



### **CROSS-SECTORAL LINKAGES**

Davie's activities support a number of businesses across a variety of sectors. Between August 2012 and December 2019, Davie spent nearly \$540M on subcontractors, materials, and professional and business services, as well as an additional \$22M on capital expenditures. These expenditures were allocated to businesses in a variety of goods and services sectors in Canada and abroad.



### **FOREIGN DIRECT INVESTMENT ATTRACTION**

Davie's projects have helped put Canadian shipbuilding on the international map. Projects such as Asterix, where many suppliers developed or used leading technologies, led to follow-on export opportunities that helped build their international reputation. Davie's execution of complex, large-scale projects and innovation implementation has also helped build Canada's brand internationally.

## **Economic Variable Definitions**

Direct Contribution	Direct economic contribution represents the economic value-added directly associated with Davie's operations and capital investments. For example, they include the employment and income of employees and contractors directly involved in business operations, as well as the associated product, production and income taxes paid.
Indirect Contribution	Indirect economic contribution represents the economic value-added resulting from the demand for materials and services that business operations generate in supplier industries. They represent, for example, economic activity generated in the manufacturing, wholesale trade, transportation and professional service sectors as a result of demand for materials and services generated by business operations.
Induced Contribution	Induced economic contribution represents general income effects associated with the expenditure of wages earned as a result of the direct and indirect contribution. Example of this contribution are purchases of goods and services at the household level.
Gross Economic Output	Gross Economic Output refers to the value of goods and services produced by establishments (e.g., firms), excluding "intermediate" goods and services consumed by the same establishment during the production process (e.g. electricity produced for own consumption). Output includes goods and services sold in the market place as well as goods added to inventory.
Gross Domestic Product (GDP)	Gross Domestic Product (GDP) is the "total unduplicated value of goods and services produced in the economic territory of a country or region during a given period".¹ GDP includes household income from current productive activities (wages, salaries and unincorporated business income) as well as profits and other income earned by corporations. In the context of our study, GDP serves as a measure of the total economic value-added resulting from the capital investments and associated operations.
Employment	This study measures employment contribution in terms of full-year equivalent positions for ongoing employment (i.e., employment contribution associated with annual expenditures). Full-year equivalent positions are counted according to their duration and not according to whether they were employed on a full-time or part-time basis. That is, two part-time employees would be counted as one full-year equivalent if the total time they spent on the job adds up to one year. This approach is consistent with standard statistical terminology.
Labour Income	Labour income represents the total earnings of employees (including employees of suppliers to the projects), consisting of wages and salaries as well as supplementary labour income (such as employer's contribution to pension funds, employee welfare funds, the Unemployment Insurance Fund and Workers Compensation Fund).
<b>Government Revenue</b>	This study measures all components of government revenue (across federal, provincial/territorial, and municipal levels) for the provinces under analysis including: corporate income taxes; fees, dividends and other extractive related payments; employee and employer payroll taxes; other taxes and payments; and taxes on products and production.

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