

The Industrial Marine Training & Applied Research Centre



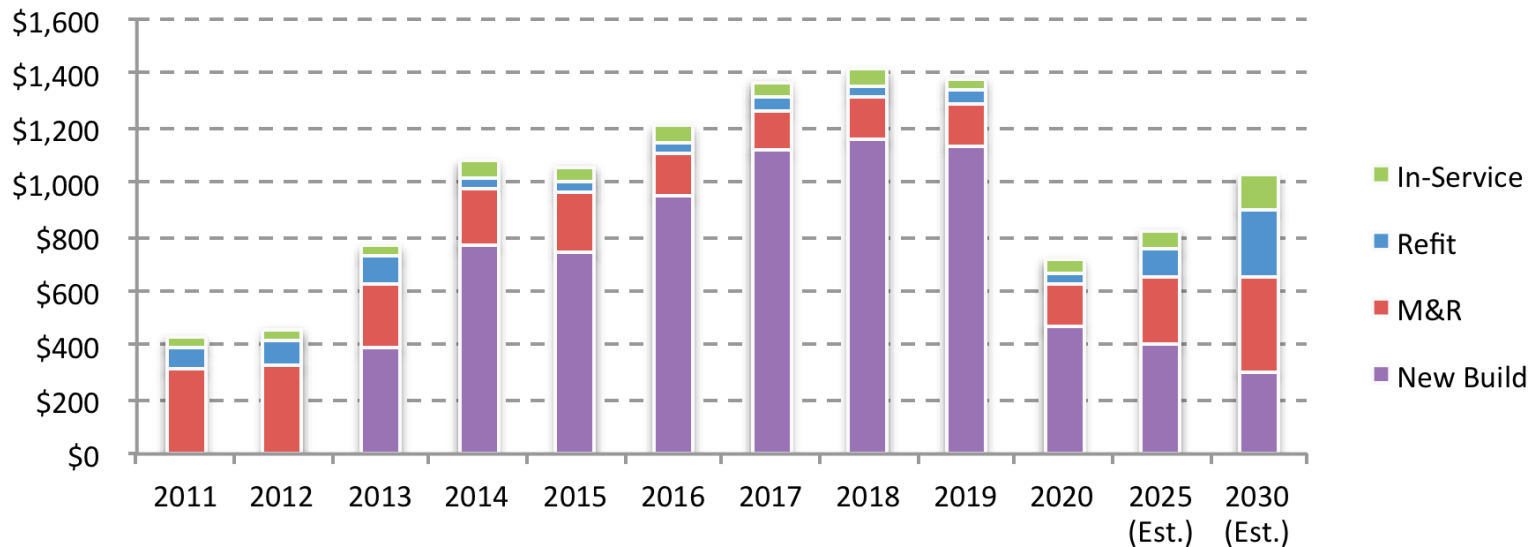
Striving Towards Enhanced Productivity

Shipbuilding and Ship Repair (SB&R) - The backdrop

- Annual revenues for commercial shipbuilding & repair industry increasing from an average of \$265 M (2004-2010) to over \$1.4 B by 2018
- BC Ferries has 37 ships and 47 terminals operating on 25 routes. It will replace approximately 22 vessels over the next 20 years and carry out 8 mid-life conversions.
- National Shipbuilding and Procurement Strategy (NSPS) Centre of Excellence for 'Non-Combat Ships' (\$8 B)
- Navy work including \$531M contract for next 5 years for submarine extended work periods, ongoing mid-life conversions for 5 Halifax Class frigates (through 2016), and refits for older vessels.
- Coast Guard getting 18-21 new vessels constructed over next 7 years for total cost of \$488M. Further 16 vessels and 2 hovercraft getting vessel life extensions and mid-life modernizations.

New investments of almost \$10 billion to 2020

Figure 1: Investment Overview in BC's Shipbuilding & Repair Industry
(2011-2030 Est.)



Source: R.A. Malatest & Associates, 2012.

Projected total job openings including retirements

Shipbuilding & Repair Sector Employment and Job Numbers (2012-2020)

Employment/Job Openings	Time Period	Shipbuilding & Repair Sector	Other Plate & Fabrication Sector	Combined Sectors
1. Employment Baseline	2012	3,198	1,429	4,627
2. Job Openings from New Employment	By 2016	1,503	753	2,256
	By 2020	488	234	722
	Total 2012-2020	1,991	987	2,978
3. Total Employment	By 2016	4,701	2,182	6,883
	By 2020	5,189	2,416	7,605
4. Additional Job Openings from Retirements	By 2016	423	204	627
	By 2020	424	208	632
	Total 2012-2020	847	412	1,269
5. Total Job Openings to be Filled	By 2016	1,926	957	2,883
	By 2020	912	442	1,354
	Total 2012-2020	2,838	1,399	4,237

Current and Projected Workforce for Shipbuilding & Repair Industry

- The total industry workforce (2012) is estimated at 3,198 workers, two-thirds of which are employed by commercial shipyard operators
- The industry workforce is dominated by workers employed in the trades (80%) thus will have the largest number of job openings through 2020
- Nearly three-quarters (73%) of the current workforce possesses either a post secondary education or a training credential
- Current vacancy rate for industry is 3.1% with engineering technologists & technicians having highest vacancy rate (24%)
- More than 75% of current workforce is at least 40 years of age, including 30% who are 55 years or older. Annual retirement rate projected at 3.3% to 2020 with approx. 850 workers retiring by 2020

Projected Skills Gaps – Shipbuilding and Repair Industry

High Demand Occupations	Job Openings 2012-2020	Skills Gap 2012-2016	Skills Gap 2017-2020
Welder (A/B)	451	(268)	(165)
Marine Fitter	293	(180)	(105)
Electrician (Industrial)	227	(168)	(50)
Pipefitters & Sprinkler Installers	223	(167)	(48)
Supervisor, Trade & Related Workers	135	(45)	(76)
Machine Fitter	118	(88)	(18)
Marine Engine Mechanic	110	(73)	(32)
Sand Blaster	88	(43)	(43)
Painter	66	(30)	(33)
Shipwright	56	(25)	(28)
Plumber	55	(27)	(24)
Electrician (Construction)	49	3	(42)
Procurement, Logistics & Material Management	45	(26)	(10)
Planning & Scheduling	39	(23)	(12)
Machinist	34	(17)	(10)
Quality Assurance	33	(18)	(9)
Mechanical Engineering (T&T)	32	(14)	(13)
Heavy Duty Equipment Mechanic	31	(19)	(10)
Construction / Project Manager	31	(19)	(10)
Electrical/Electronic Engineering (T&T)	28	(16)	(8)
Job Estimating	25	(19)	(4)
Millwright	21	(12)	(5)
Program Manager	11	(10)	(1)
Manufacturing Manager	8	(3)	(4)
Purchasing Manager	7	(4)	(3)

IMTARC – Why?

- The need to get education and training focused on the requirements of the SB&R sector
- The need to bring education and training closer to the workplace
- The need to make education and training more readily available and cost effective
- The need to take a more comprehensive and collective approach to education and training to achieve common understanding
- The need to get the industry to be more productive and hence more competitive

IMTARC - What is it?

- A not-for-profit organization helping to enable workforce development, applied research and supply chain development with the purpose of achieving enhanced productivity and competitiveness
- **Physical** – a 4000 square foot training centre co-located with the shipbuilding and repair industry in Esquimalt Harbour – A focal point for shipbuilding and ship repair industry training activities. IMTARC also facilitates and adds value by aggregating demand, providing coordination, and providing location for brokered training to industry.
- **Beyond the School House** – education and training wherever and whenever the industry requires it as long as there is access to a classroom. IMTARC also partners with post secondary institutions in the provision of hands-on learning and works to bring industry and post-secondary applied research facilities together in learning and productivity enhancement projects.

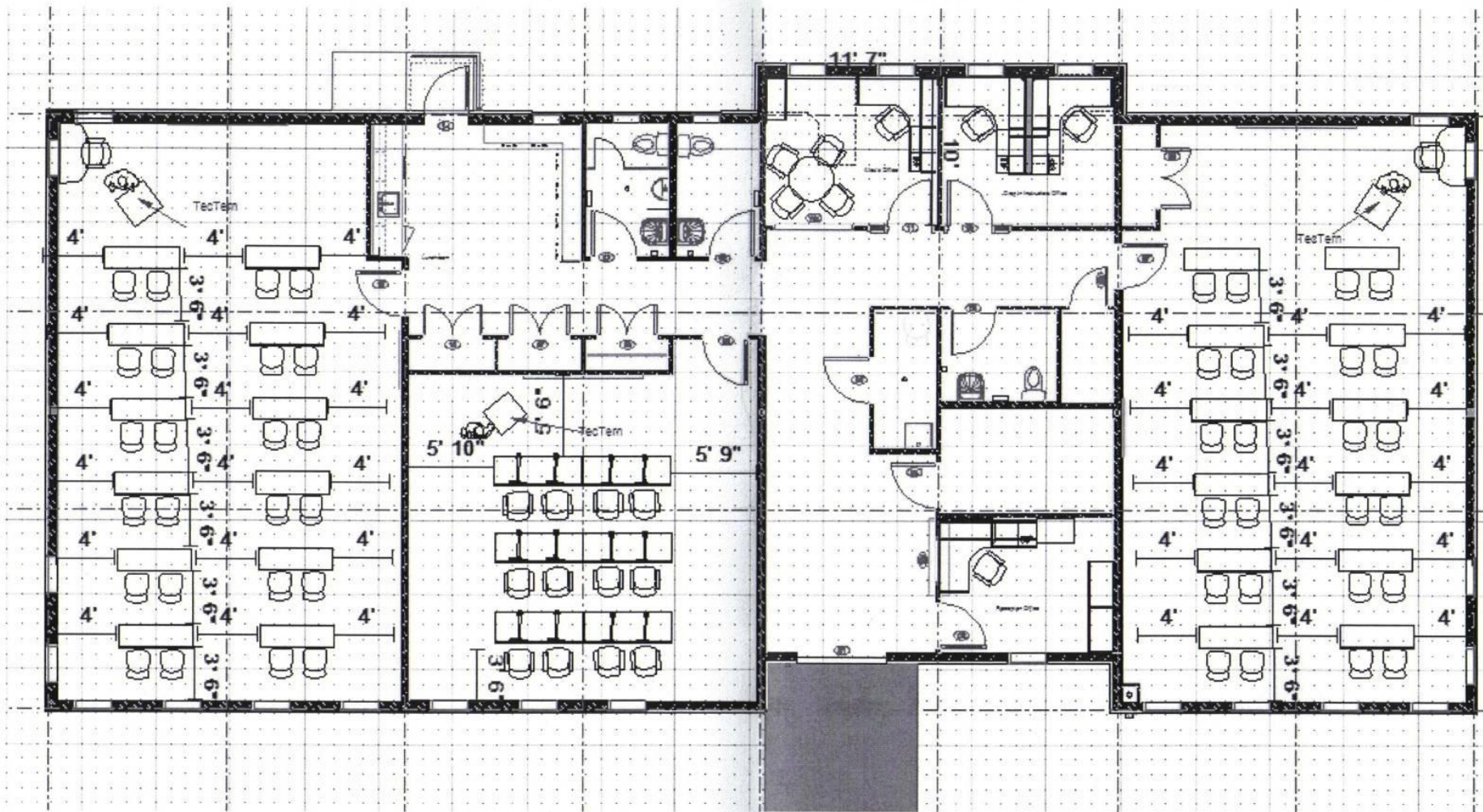
IMTARC

- **Vision** – to be recognized as a Centre of Excellence in workforce development, applied research and technology transfer, and supply chain development for the shipbuilding and repair sector.
- **Mission** – supporting the growth, productivity, and competitiveness of the shipbuilding and repair sector by coordinating and facilitating workforce development, applied research and supply chain development.
- **Purpose**
 - Workforce Development
 - Applied Research & Technology Transfer
 - Supply Chain Development
 - Catalyst and enabler for industry-specific initiatives

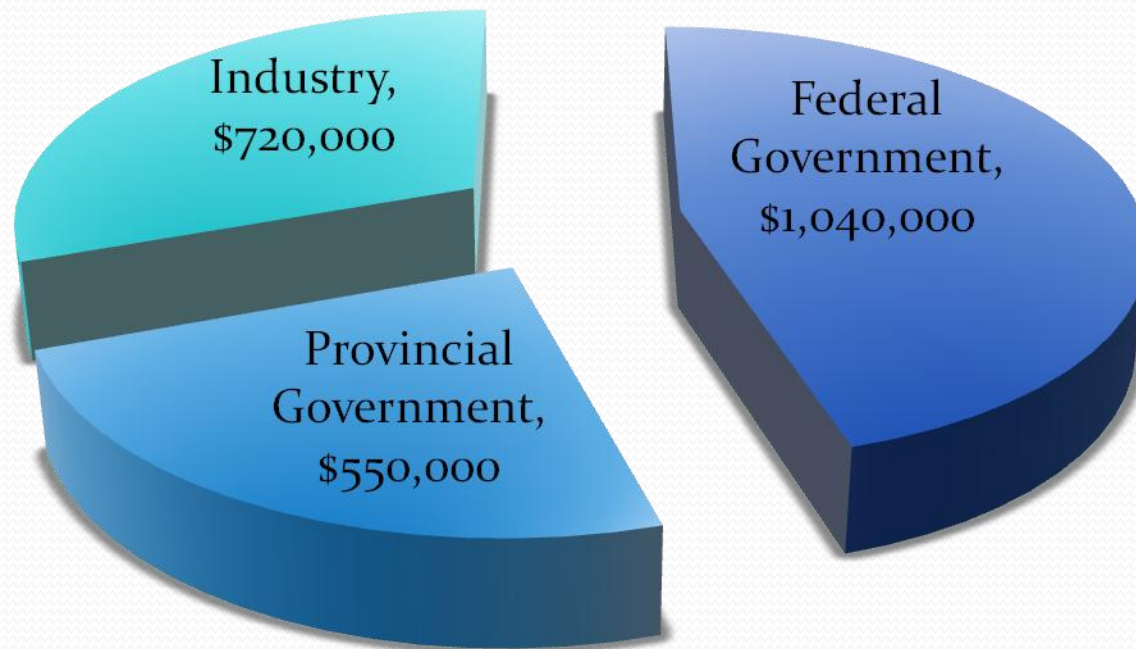


EGD Aerial View – August 2012

IMTARC - Facility Layout



IMTARC - Funding



This slide represents funding that was given by the Department of Western Economic Diversification (Fed Gov't) and Industry towards the construction and outfitting of the Centre which cost approximately \$1.35M. The remainder of industry funding will sustain IMTARC through its first year of operation. IMTARC, as a not-for-profit society, needs to attain financial self-sufficiency by April 2014. The Provincial Government contributed \$550K of LMA funding towards the development of new curriculum.

IMTARC



```
graph TD; IMTARC --> WD[Workforce Development]; IMTARC --> ARSCD[Applied Research & Supply Chain Development]; WD --> LTF[Leasing Training Facilities]; WD --> BT[Brokered Training]; WD --> FPs[Finite Projects]; WD --> DNC[Developing New Curriculum]; ARSCD --> NRC[\"NRC/NSERC Projects to support industry development\"]; ARSCD --> WII[\"Work with Industry to advance technology and adapt to industry needs\"]; ARSCD --> SC[Supply Chain Development];
```

The diagram is an organizational chart for IMTARC. At the top is the title 'IMTARC'. Two arrows point down from 'IMTARC' to two main categories: 'Workforce Development' and 'Applied Research & Supply Chain Development'. From 'Workforce Development', four arrows point down to 'Leasing Training Facilities', 'Brokered Training', 'Finite Projects', and 'Developing New Curriculum'. From 'Applied Research & Supply Chain Development', three arrows point down to 'NRC/NSERC Projects to support industry development', 'Work with Industry to advance technology and adapt to industry needs', and 'Supply Chain Development'. All sub-items are preceded by a teal dot.

• Workforce Development

• Leasing Training Facilities

• Brokered Training

• Finite Projects

• Developing New Curriculum

• Applied Research & Supply Chain Development

• NRC/NSERC Projects to support industry development

• Work with Industry to advance technology and adapt to industry needs

• Supply Chain Development

Workforce Development

Four lines of operations at IMTARC as follows:

- **Leasing learning space** – Lease out two fully AV equipped 24 student classrooms (\$350/day, \$225/half day) with multiple seating configurations and one 12 station computer lab (\$600/day, \$350/half day) supported by an MS Server
- **Brokering training to industry** – Utilizing the services of multiple private and public training providers to provide a broad cross-section of courses to Shipbuilding and Repair Industry at lower cost due to economies of scale and enabling collective learning
- **Developing new curriculum for industry** – Using LMA (\$550K) partnership funding to develop curriculum identified as high priority for the industry by labour market studies/needs analysis
- **Workforce Development Initiatives** – Advancing finite projects where IMTARC can add value and act as a catalyst/enabler

Other Workforce Development Initiatives

- Developed with Industry Training Authority (ITA) on new credential for **Shipyard Labourer** – IMTARC has become accredited assessment agency for those wishing to challenge the ITA Occupational Certificate for Shipyard Labourer. Standing by to register new challengers and to commence assessments.
- Participating in federally-funded (HRSDC) **Coastal Aboriginal Shipbuilding Alliance Project (CASA)** with aboriginal employment agencies (FNES, ACCESS, CSETS) to provide education/training to people of aboriginal descent in order to obtain jobs in BC shipbuilding and repair industry
- Designed and delivered a 2 week **'Job Readiness' training program** for people of aboriginal descent. Working on a aboriginal cultural awareness program for employers.
- Developing a pilot for **transitioning military personnel into the trades** and other occupations in the SB&R sector (something like 'Helmets to Hardhats') – implement in Spring 2014
- Developing a **co-op student management** and distributed training framework with post-secondary institutions and employers – implement in Spring 2014
- Planning developing a pilot for transitioning military personnel into the trades and other occupations in the SB&R sector (something like 'Helmets to Hardhats')

Applied Research & Supply Chain Development

- Start with Competitiveness and Productivity Road Map (developed by 2012 Workforce Table) with focus:
 - On best practices and process improvements
 - On technology identification, adoption and transfer
 - On material improvements
- Partnering with other institutions and technology initiatives
 - local, provincial, national and international
- Developing a learning and enabling framework for small and medium enterprises that have innovative products/services to gain qualifications /certifications /standards to qualify for supply chain to industry projects
- Work with industry stakeholders in facilitating adaptation of approaches and methodologies that suit their particular needs

IMTARC Use Statistics

(06 February – 22 November 2013)

Total courses held at IMTARC (through lease) - 170

Total students that have learned at IMTARC (through lease) – 3610

Number of different courses held at IMTARC (through lease) – 40

Total courses held at IMTARC (through brokering) – 19

Total students that have learned at IMTARC (through brokering) – 302

Number of different courses held at IMTARC (through brokering) – 15

Shipyard Labourer Challenge Assessments - 50

ITA Occupational Certificates for Shipyard Labourer achieved - 48



www.intarc.com

QUESTIONS ?



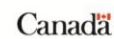
IMTARC is funded by the following contributors:

Les donateurs suivants ont participé au financement de l'IMTARC:



Western Economic
Diversification Canada

Diversification de l'économie
de l'Ouest Canada



Funding provided through the Canada-British Columbia Labour Market Agreement.

