

Labour Market Partnership Project Final Report: Phase 1 Engagement of the Vancouver Island Manufacturing Sector



Report Submitted: December 4, 2015

Table of Contents

Introduction.....	3
A. Sector Engagement Overview.....	4
B. Themes Emerging from Discussions.....	7
C. Conclusions.....	9
D. Next Steps.....	9
Overview of LMP Research Framework.....	10
E. Appendices	11
Appendix 1: Manufacturing Sector Contacts for Phase 1	11
Appendix 2: VIMAB Meeting Agendas.....	13
Appendix 3: Summary Employer In-kind Contributions	15
Appendix 4: Proposed LMP Research Framework.....	16

Introduction

This report highlights the work that Harbour Digital Media (HDM) and its sub-contractor Schmidt & Carbol Consulting have undertaken since mid-September 2015 related to the development of a Labour Market Partnership for the Vancouver Island manufacturing sector. This report provides a summary of activities and findings from Phase 1 (Sector Engagement) activities outlined in the agreement (#C16LMP001) between HDM and the Ministry of Jobs, Tourism, and Skills Training (MJTST).

The report includes the following sections:

- A. Sector Engagement Overview** – This section provides a summary of the companies that were contacted during the engagement phase, the key individuals who have been involved in discussions and interviews and the development of an advisory board for the sector (the Vancouver Island Manufacturing Sector Advisory Board or VIMAB). A description of the board, its members, and its terms of reference are included in this section.
- B. Themes** - This section includes a summary of interviews and board discussions related to the labour market issues and needs of the manufacturing sector on Vancouver Island.
- C. Conclusions** – This section provides a brief set of conclusions arising from discussions and meetings.
- D. Next Steps** – This section provides an overview of steps that are planned as a part of Phase 2 (Labour Market Information research, data collection and analysis).
- E. Appendices** – Several documents are appended to the report. These appendices are included to provide the reader with a more complete picture of the Phase 1 sector engagement activities and future proposed directions for this labour market partnership.

The approach that HDM and its consulting partner have taken to engage the Vancouver Island manufacturing sector concerning its labour market issues and needs is consistent with the workplan¹ provided to the Ministry in late July 2015. In this workplan, three engagement strategies were outlined. Briefly, these strategies involved:

1. Engaging senior managers or executives from key manufacturing sector companies in an effort to gain their support for the labour market partnership initiative and to identify a preliminary set of labour market issues affecting local industry;
2. Expanding the partnership network through additional contact with other companies based on research undertaken by HDM and the advice of initial sectoral partners; and

¹ This workplan was provided in the Interim Report and is not repeated here.

3. Building a functioning advisory board of key sectoral partners and conduct initial meetings with the board.

A. Sector Engagement Overview

The Vancouver Island manufacturing sector includes approximately 170 companies that are engaged in a wide-variety of manufacturing activities. The customer base for many of these companies extends beyond British Columbia to include other parts of Canada, the United States and other parts of the globe. While the majority of these companies have a presence on the lower or mid-island there are also pockets of manufacturing in the mid- and north-island.

The manufacturing sector on the island is also very diverse. Manufacturing on the island includes the manufacturing of electronic components for a variety of applications including subsea instrumentation and industrial metering, automated controls for a range of remotely operated visual inspection systems, metal fabrication for application in the value-added forest resources sector, and a range of chemical, plastics, hydraulics, compressor, and consumer manufacturing activities.

In Phase 1, HDM has engaged a range of Vancouver Island manufacturing companies in order to and determine the level of interest in the sector in establishing a labour market partnership of the type described in the MJTST guidelines. The initial response has been enthusiastic and the sector partnership initiative is seen as an important opportunity for manufacturing companies on the island to bring forward common issues that are impacting productivity and competitiveness and to collectively find ways to arrive at solutions. Government support for this type of initiative is welcomed and seen as long overdue.

As a part of the Phase 1 sector engagement process, HDM contacted a number of key individuals (via email, telephone and in person) to determine their interest in being involved in a manufacturing sector labour market partnership project that would focus, in the long term, on strategies that could be implemented across the sector to address significant training and development needs and issues. As a part of the Phase 1 engagement activities 29 companies from the Vancouver Island manufacturing sector were contacted concerning their interest in the labour market partnership project. A complete list of the companies, organizations and individuals contacted from September through November 2015 concerning the sector partnership is included in Appendix 1.

Meetings and informal interviews were conducted with a select group of individuals from the companies contacted. Individuals interviewed were very positive concerning the creation of an advisory board for the Vancouver Island manufacturing sector. Two meetings of the Advisory Board were held during Phase 1, one on October 16, 2015 and the other on November 26, 2015. Those present were enthusiastic about the partnership initiative and found the opportunity for Vancouver Island manufacturers to identify common problems issues important. Several of those in attendance indicated that they had no other venue through which they could share common problems and identify solutions.

The following table outlines the companies that have been a part of the formative stages of an advisory board for the Vancouver Island manufacturing sector (VIMAB). Meetings of the advisory board were held on October 16th and Nov 26th. Meeting agendas are found in Appendix 2.

Table 1: Vancouver Island Manufacturing Sector Board Members

Company	Location	Description of Business	Contact(s)/Role
1. Nicholson Manufacturing	Saanich	Manufactures state of the art ring de-barkers for the forestry industry. Customer base is in North and South America, and northern Europe.	Mike Smothers - Manufacturing Manager (smothersmd@nmbc.com)
2. Pacific Energy	Duncan	Manufactures wood and gas stoves, fireplaces and inserts.	Chuck Richardson – Director Human Resources (Chuck.Richardson@pefp.net)
3. Schneider Electric	Saanich	Schneider Electric Canada is part of large global corporation (170,000 employees) that provides a range of energy management and automation technologies designed to reduce power consumption. The Saanich operation was formerly a company called Power Management and specializes in high end electric meters for large scale commercial operations.	Jennifer Jacques – Plant Manager / Global Supply Chain (jennifer.jacques@schneider-electric.com) Lynn Brown – HR Manager, Manufacturing & Plant Operations (Lynn.Brown@schneider-electric.com)
4. Epicure	Saanich	Epicure is a food manufacturer and direct sales business committed to providing clean, wholesome ingredients to inspire time-starved people to eat healthy and delicious food.	Michelle Gagnon – Vice President People (mgagnon@epicure.com)
5. VMAC	Nanaimo	VMAC (Vehicle Mounted Air Compressors) is the world-leading	Stuart Coker - Director of Operational Excellence (stuart_coker@vmacair.com)

Company	Location	Description of Business	Contact(s)/Role
		manufacturer of truck mounted mobile air compressors, used in a wide spectrum of industries: oil and gas, mining, transportation, mobile tire service, municipal operations and public works.	Chris Larsen – HR & Special Projects Manager (chris_larsen@vmacair.com)
6. Viking Air	Saanich	Viking Air manufactures a range of short range land, sea, and air utility vehicles (aircraft) which are designed to operate in challenging conditions and harsh environments. Viking manufactures the twin and single engine de Havilland Otter, the Beaver, and a range of other world class aircraft.	Robin Ambrose – Director, Human Resources (robin.ambrose@vikingair.com)
7. Coastland Wood Industries	Nanaimo	Coastland is a North American leader in mill technology which results in high quality veneer products for its Canadian and global customers.	Doug Pauze, General Manager, Manufacturing (dpauze@coastlandwood.com)
8. Inuktun Services, Ltd.	Nanaimo	Inuktun designs and manufactures remotely operated vehicles and modular robotic systems for use in confined spaces and hazardous environments.	Colin Dobell, CEO (colin@inuktun.com) Richelle Eck, Engineering Manager (reck@inuktun.com)
9. Natural Glacier Waters	Fanny Bay	Bottled water manufacturer.	Alex Lai, General Manager (alexlai@ngwcanada.com)
10. Natural Pastures Cheese	Courtney	Natural Pastures produces a range of artisanal and traditional cheeses for the consumer and wholesale markets.	Doug Smith, Operations Manager (doug@naturalpastures.com)

B. Themes Emerging from Discussions

A number of issues related to skills training and development that could benefit from a broader, sector-wide training and development strategy. These included:

- The development of business knowledge (also referred to as business savvy) on the part of staff at all levels of organizations;
- Skill development in the trades (including industry specific requirements);
- Soft skills development in the areas of leadership and management;
- The inability of post-secondary institutions to address learning needs through the provision of customized programs (a coordinated approach is of interest to the sector);
- Company capacity to deal with training and development planning; and
- Developing ROI frameworks for training & learning strategies that link to improving efficiency and productivity.

Based on an analysis of the individual interviews and the discussions that took place at the meetings on October 16th and November 26th the following themes and issues (in no order of priority) impacting companies in the Vancouver Island manufacturing sector were identified:

1. ***Staff development and training in union vs. non-union environments*** (e.g. questions were raised about the viability of participative management in a union environment and the lack of buy-in from unions is a problem/challenge);
2. ***Capacity*** – Companies identified that large and small manufacturers have a 'differential ability' (or capacity) to address training needs (e.g. companies such as Schneider have the ability to tap into programs offered by a large organization on issues such as LEAN transformation or leadership; smaller companies have to try to address these issues on their own with more limited resources).;
3. ***Change management, capacity to change and change 'fatigue'*** – These issues were identified in relation to broader discussions concerning LEAN initiatives (at least three companies at the table spoke about their LEAN approaches). These discussions also focused on the need for change in a company's culture and the mindset of individual staff and managers. Those who struggle the most with change are often those with the greatest technical skills. An additional issue faced by companies is helping managers to change and to become leaders.
4. ***Improving productivity*** – This issue was seen as 'doing more with the same' and was one of the reasons that companies have adopted LEAN as a business philosophy/strategy.
5. ***Soft skills*** – The interviews and group discussion centred on various aspects of soft skills including the development of leadership and communication skills among workers at all

levels of a company. Establishing working environments where accountability is a part of the work culture is also seen as a key training and development issue. For most of those having employees with these skills has a direct bearing on company ***productivity and efficiency***. Companies hire those with the best soft skills and train staff, where necessary, for the technical skills that they need. Also, some suggested that it is very difficult to 'inculcate' soft skills in an organization. These suggestions 'fly in the face' of the so-called technical skills gap that has become part of the folklore of traditional Canadian labour market information.

6. ***Business Knowledge*** – There was general agreement among board members that staff across organizations lack business knowledge. The lack of understanding of how businesses operate on the part of some employees is seen as a barrier to overall business productivity.
7. ***Metrics*** – Although not a major part of the interviews or the meeting conversation, the notion of the measurement of the impact of training (presumably on productivity and efficiency) was mentioned as an important part of what at least one company does in relation to staff training and development. This issue will need to be pursued in more detail at subsequent meetings and through the background research that will be undertaken in moving forward to future phases of this project.

Some other observations made by members of the advisory board are also worth noting. These are:

- Island companies (particularly those on the south island) have a more difficult time attracting individuals due to the cost of living;
- Companies (particularly those that do not have internal training resources) always seek the most cost-effective approaches to training. Local institutions (i.e. colleges and universities) often charge too much for the services and programs that they are offering. Traditional approaches to training do not work. What is required are training solutions that are available in the workplace and are customized to meet specific training needs. Programs that are of interest to the sector should also include mentoring and secondment opportunities;
- Qualifications for the foreign worker program are too complex and cost-prohibitive as currently structured. As a result very few companies (if any) are interested in participating or considering the use of foreign workers to meet specific skills gaps;
- In general, board members felt that not enough information is readily available concerning government programs and initiatives that might support the work of the sector; and
- The ability to attract new talent to the manufacturing sector is inhibited by a lack of general information about the sector. In many ways, the sector and the activities of companies that are a part of it are one of the "best kept secrets" on the island.

C. Conclusions

It is clear from the interviews and discussions that a number of the issues outlined above could become the focus of that could lend themselves to the development of cross-sectoral strategies. For example, the cross-sectoral issues that could become a focus for future labour market research, strategy development, pilot implementation and evaluation. These general cross sector issues are:

- Development of business knowledge;
- Development of a range of soft skills (i.e. leadership, communications, personal accountability);
- Development of industry-specific change management/leadership programs;
- Development of programs to deal with cross-generational issues in the workplace;
- Development of sector information resources (i.e. information about and for the sector).

VIMAB members have indicated their commitment to a multi-phase partnership process that will be used to identify common needs, develop and implement strategies to address these needs, and to evaluate the impact of the results of their efforts. Board members have committed their time and energy to the initial phase of the project and are keen to see the work continue in future phases of the project (see Appendix 3 for an overview of in-kind contributions from the sector). There is a strong feeling that while individual companies may benefit from the initiative it is more important that the sector as a whole benefits.

D. Next Steps

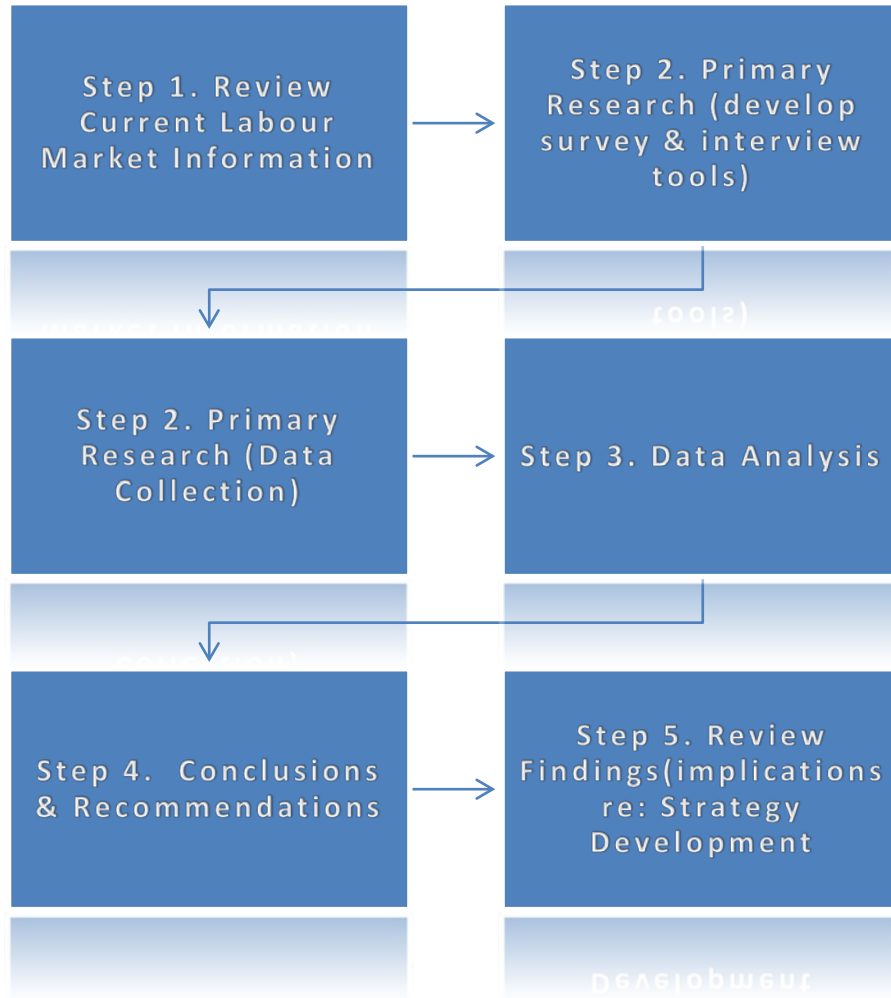
Given the commitment that board members have displayed through their participation in the first phase of this labour market partnership project, HDM has indicated to the board that it will pursue funding for Phase 2 of the project. A proposal for Phase 2 funding will be submitted to the Ministry in December. Phase 2 involves the collection of sector-specific labour market information that will be used as a base for the development of strategies by the board in Phase 3 of the project.

HDM has proposed the following process to collect and analyze sectoral labour market information.

1. Review Current Labour Market Information for the Sector
2. Conduct Primary Research for the Sector – this will involve the development, administration, and analysis of survey and interview data;
3. Analyze the Results (of the primary and secondary research);
4. Arrive at Conclusions and Recommendations (based on input from the Advisory Board);
and
5. Advisory Board Review of Findings and Recommendations (final review of Phase 2 report).

The following flow chart illustrates the steps involved in the Phase 2 research process.

Overview of LMP Research Framework



Additional details concerning the proposed Phase 2 labour market research approach is provided in Appendix 4.

E. Appendices

Appendix 1: Manufacturing Sector Contacts for Phase 1

Company	Contact	City
Coastland Wood Industries	Doug Pauze	Campbell River
Epicure Selections	Michelle Gagnon	Victoria
Inuktun Services Ltd	Colin Dobell / Richelle Eck	Nanaimo
Natural Glacier Waters	Alex Lai	Fanny Bay
Natural Pastures Cheese	Doug Smith	Courtenay
Nicholson Manufacturing	Mike Smothers	Victoria
Pacific Energy	Chuck Richardson	Duncan
Schneider Electric	Jennifer Jacques / Lynn Brown	Victoria
Viking Air	Robin Ambrose	Victoria
VMAC	Chris Larsen / Stuart Coker	Nanaimo
Pro Mac Manufacturing	Scott MacKay / Karen Coward	Duncan
Seamore Marine	Robin Li	Nanaimo
Atlas Manufacturing	David Freeman	Courtenay
Coastal Windows	(generic web contact)	Nanaimo
CR Metal Fabricators	(generic web contact)	Campbell River
Daigle Welding & Marine	(generic web contact)	Campbell River
Electrowear Manufacturing	(generic web contact)	Parksville
Fanny Bay Oysters	Brian Yip	Union Bay
Island Truss	(generic web contact)	Courtenay
North Island Chrome	(generic web contact)	Campbell River
Plastics Plus Fabricating	(generic web contact)	Campbell River
Shelter Point Distillery	(generic web contact)	Campbell River
Southside Welding	(generic web contact)	Campbell River
Tilray	(generic web contact)	Nanaimo
Wolf Boats	(generic web contact)	Courtenay

Company	Contact	City
York Portable Machine Tools	(generic web contact)	Campbell River
Canadian Electrical Vehicles	Randy Holmquist	Parksville
Coastal Transportation & Storage	Craig Skene	Comox
Micron Machine Works	(generic web contact)	Port McNeill

In addition to the companies contacted, the following individuals and organizations were also canvassed concerning their advice on companies that could or should be included in the partnership.

Company	Contact	City
Hayes, Little & Stewart	Tara Benham	Duncan
Invest Comox Valley	Geoff Crawford	Comox
Campbell River Councilor	Colleen Evans	Campbell River
Innovation Island Technology Association	Paris Gaudet	Nanaimo
Comox Valley Chamber	Dianne Hawkins	Comox
Small Business BC	George Hunter	Vancouver
Nanaimo Economic Development Corporation	Peter McGee	Nanaimo

Appendix 2: VIMAB Meeting Agendas

Meeting #1: Agenda: October 16, 2015

1. Introductions
2. Meeting Objectives
 - a. To establish the terms of reference (i.e. scope) for a Vancouver Island Manufacturing Sector Advisory Board (structure, purpose, goals)
 - b. To begin the process of identifying key skills training issues affecting the sector
 - c. To identify other companies that should be included on the Advisory Board
 - d. To provide an opportunity for individuals and companies to network and become aware of best training practices
 - e. To become familiar with some of the current research related to training and its impacts on productivity and workforce development
 - f. To help individuals and companies understand the expectations associated with the LMP program
3. Brief LMP/VIMAB program overview
4. Roundtable discussion
 - a. Overview of each company - overview of what they do; who their customers are
 - b. Identification of key issues affecting training, skills for each company – skills gaps (could include discussions related to supply chain weaknesses - skills gaps with suppliers; union - non-union issues)
 - c. Terms of Reference discussion - Structure, purpose, goals of Van Island Manufacturing Sector Advisory Board
 - d. Key companies that should also be considered for inclusion on the advisory board
5. Expectations of your future involvement - meetings, review of summary documents
6. Background research (time permitting)
7. Next Steps and Closing Comments

Meeting #2: Agenda: November 26, 2015

1. Introductions
 - a. New members to provide company background as well as an overview of their role in the company
2. Meeting Objectives
 - a. To provide members of the VIMAB with the opportunity to discuss training and development issues that impact the manufacturing sector on Vancouver Island;
 - b. To provide input into the future collection of labour market information that will impact training and development strategies and initiatives for the sector; and
 - c. To provide sector leaders with the opportunity to engage in dialogue related to training and development.
3. Labour Market Partnership Program overview – Ministry Presentation (Kendra Greek, Ministry of Jobs, Tourism, and Skills Training)
4. Summary of sector meetings and contacts – John Juricic
5. Summary of Issues to Date – Barry Carbol
 - a. Review of issues identified through initial interviews and discussions
 - b. Comments and feedback from the Board members
6. Roundtable Discussion - ALL
 - a. Describing the labour market for the manufacturing sector on Vancouver Island
 1. Key questions to ask (What do Board members know about the sector and its labour market and training needs; what do the Board members feel they need to find out about the sector and its labour market and training needs?)
 2. Proposed research framework & survey and interview methods
7. Next Steps
 - a. Review final report for Phase 1 - Engagement
 - b. Begin Phase 2 – Labour Market Information Research
8. Concluding Remarks

Appendix 3: Summary Employer In-kind Contributions

The estimated in-kind contributions of employers for each of the three engagement strategy development areas are estimated as follows:

1. Engage key sector partners

Estimated employer costs associated with this phase are:

- a. Telephone contact with each of the key sector partners: $7 \text{ partners} \times 0.5 \text{ hours} \times \$150/\text{hour} = \$525$
- b. Initial individual face to face meetings with key partners: $7 \text{ partners} \times 2 \text{ hours} \times \$150/\text{hour} = \$2100$

Total: \$2,625

2. Expanding the network

Estimated employer costs associated with this phase are:

- a. Follow-up telephone contact with 20 additional contacts based on initial key partner discussions: $20 \text{ potential partners} \times 0.5 \text{ hours} \times \$150/\text{hour} = \$1,500$
- b. Initial network meeting (invitees based on initial face to face and telephone meetings): $15 \text{ potential advisory board members} \times 2 \text{ hours} \times \$150/\text{hour} = \$4500$
- c. Travel costs: $15 \text{ invitees} \times \$100/\text{invitee} = \$1500$

Total: \$7,500

3. Establish the advisory board

Estimated employer costs associated with this phase are:

- a. Meetings of the advisory board: $10 \text{ members} \times 4 \text{ hours} \times \$150/\text{hour} = \$6,000$
- b. Travel costs for advisory board meeting: $10 \text{ members} \times \$100/\text{member} = \$1000$
- c. Review of documents and findings: $10 \text{ members} \times 2 \text{ hours} \times \$150/\text{hour} = \$3000$

Total: \$10,000

Total Estimated Employer In-kind contribution: \$20,125

Appendix 4: Proposed LMP Research Framework

Topic:

Determining the Training and Development Needs of Vancouver Island Manufacturing Sector

Objectives:

1. To describe the labour market issues and needs of the Vancouver Island Manufacturing sector; and
2. To recommend future directions for learning and training strategy development for the sector.

Methodology:

The research approach used will involve both primary and secondary data collection and analysis. Primary research will involve the collection of data through sector surveys and interviews of key individuals and companies. Secondary research will include a review of data from a variety of provincial and federal government sources, sector organizations, and other organizations that have conducted recent labour market research in the sector. A list of labour market information sources provided on the last page of this appendix will be used as a starting point for the secondary research undertaken in Phase 2.

The research process will involve the following steps:

Step 1: Review Current Labour Market Information for the Sector

1. Review current labour market information (secondary research sources) for the sector in order to arrive at a preliminary description of the sector characteristics and potential labour market issues that the sector is facing now or could be in the future.

Step 2: Conduct Primary Research for the Sector

1. Develop online survey tools to determine the training and development needs of the sector.
2. Conduct an online survey which will be distributed to sector companies based on lists provided by industry organizations, chambers of commerce, and through HDM's research.
3. Develop interview protocols.
4. Interview leaders from key sector companies.

Step 3: Analyze the Results

1. Analyze the information reviewed from secondary sources.
2. Analyze and summarize the survey data collected.
3. Analyze and summarize the interview data collected.
4. Develop key sector descriptors.
 - a. company profiles;
 - b. size (no. of employees);

- c. type of manufacturing;
- d. market reach (domestic, export); and
- e. types of jobs and links to National Occupational Classification (NOC) categories.

Step 4: Conclusions and Recommendations

1. Summarize conclusions arising from the analysis.
2. Develop sector recommendations including implications for strategy development related to learning and development(Phase 3).

Step 5: Review Findings

1. Phase 2 report reviewed by the Advisory Board (VIMAB).
2. Recommended changes incorporated into a final draft of the Phase 2 report.

Labour Market Research – Background for Research Framework

1. Canadian Labour Market Research Network - <http://www.clsrn.econ.ubc.ca/home.php>
2. Local Labour Market Plan – example of components that might be included in a local labour market plan for Vancouver Island's manufacturing sector - http://www.workforceplanningboard.com/Files/English/2014_Labour_Report_web.pdf
3. Service Canada - <http://www.servicecanada.gc.ca/eng/about/publication/jobseek/lminfo.shtml>
4. Employment and Social Development Canada - <http://www.edsc.gc.ca/eng/jobs/lmi/index.shtml> - includes the NOC, economic and environmental scans, occupational outlook
5. BC Employment Trends – (industry highlights) <https://www.workbc.ca/Statistics/Regional-Profiles/8> and statistics including information about Vancouver Island and labour market outlook for the region – (includes estimated job openings, median wage rate, and NOC codes – see p. 20 and following https://www.workbc.ca/WorkBC/media/WorkBC/Documents/Region_PDF/BC_REPORT.pdf)
6. Employment and Social Development Canada – Labour Market Bulletins - <http://www.esdc.gc.ca/eng/jobs/lmi/publications/bulletins/bc/jul2015.shtml>
7. Industry Canada – might look at export information http://www.ic.gc.ca/eic/site/icgc.nsf/eng/h_07042.html?Open&src=mm2
8. Conference Board of Canada – employability skills – could be used as a basis for survey questions <http://www.conferenceboard.ca/topics/education/learning-tools/employability-skills.aspx>
9. Labour market framework – this Ontario publication contains useful definitions and LMI interpretation information <https://www.tcu.gov.on.ca/eng/labourmarket/currenttrends/docs/guide.pdf>
10. UpJohn research on optimal Labour Market Information systems - http://research.upjohn.org/cgi/viewcontent.cgi?article=1025&context=up_technicalreports

11. Yukon labour market information strategy -
<http://labourmarketframeworkyukon.com/system/PDF/LMI%20strategy.pdf>
12. UK – Information to Local Intelligence: Guidance on Local Labour Market Assessments -
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/346923/Local_LMI_Guidance_Aug14_FINAL_with_covers_v3.pdf
13. Elements of a conceptual framework – useful reference for building a conceptual frameworks to underpin the LMI research
<http://ejournals.library.ualberta.ca/index.php/IJQM/article/view/6118>

In addition to these sources the following background articles and resources have also been reviewed by HDM in preparation for a more detailed literature review in support of the secondary research that will be done as a part of Phase 2.

1. American Society for Training and Development. (2012). *Bridging the Skills Gap - Help Wanted, Skills Lacking: Why the Mismatch in Today's Economy?* Alexandria, VA: ASTD.

This American study looks at the role of training and education and the need for collaboration among all sectors of the economy to meet current and future skills needs.

2. Australian Workforce and Productivity Agency. (2013). *Human Capital and Productivity - Literature Review*. Canberra, AU: Australian Workforce and Productivity Agency.

This literature review is of interest since it is one of a few that makes direct reference to the link between learning and productivity. One of the key issues identified is the link between leadership, management and productivity. This is an issue that has been identified in preliminary discussions with the members of VIMAB.

3. Balakrishnan, J., Eliasson, J., & Sweet, T. (2007). Factors Affecting the Evolution of Manufacturing in Canada: An Historical Perspective. *Journal of Operations Management*, 25 (2), pp. 260-283.

This paper provides useful background on the evolution of the manufacturing sector in Canada. The role and impact of factors such as transportation, foreign investment, and government support for industry and the impact on manufacturing is reviewed.

4. Burt, M., & Poulin, V. (2008). *Key Economic and Labour Force Issues Facing Canada's Manufacturing Sector*. Ottawa, ON: Conference Board of Canada.

In this report, The Conference Board of Canada examines how factors such as globalization and the aging workforce are affecting the performance of the manufacturing sector, as well as its labour force. The sector's recent performance and that of its subsectors are examined, and the factors that are influencing the sector's growth are discussed in detail. In addition, the characteristics of the sector's labour force are discussed. The report ends with a discussion of the major human resources challenges that the sector will face in the coming years and how the sector might respond to the various challenges it faces.

5. Canadian Manufacturers and Exporters (CME). (2012). *Labour Market Information Research for the BC Manufacturing Sector*. Vancouver, BC: CME.

This is the most recent report of the CME and while it provides some useful insights into the BC manufacturing sector, discussion concerning manufacturing on Vancouver Island are limited and in some cases absent. Nonetheless, it can and should be used to inform discussions of the VIMAB since many of its conclusions could be broadly applicable on the island but would need to be verified.

6. Gosling, M. (2009). *Positioning Paper - Business Performance and Skills*. London, UK: City & Guilds Centre for Skills Development.

This UK paper explores the links between skills and business performance. It also considers how training should be tailored, together with the way in which it interacts with other factors impacting on business performance. The paper provides useful background on how to undertake the research that is necessary to arrive at industry-specific training strategies.

7. Harvey, O., & Harris, P. (2008). *The Skills-Productivity Nexus: Connecting Industry Training and Business Performance*. Wellington, NZ: New Zealand Department of Labour & Industry Training Federation.

This New Zealand report provides an overview of research related to productivity initiatives in the manufacturing, textile and agriculture sectors. It provides a summary of practical interventions that have been demonstrated to improve productivity and efficiency.

8. International Labour Office. (2010). *A Skilled Workforce for Strong, Sustainable and Balanced Growth: A G20 Training Strategy*. Geneva Switzerland: International Labour Office.

G20 partners have adopted a framework for sustainable development and growth that acknowledges the role of skills development. The G20 has been working with the ILO on a training and development strategy that involves employers and workers. These broad strategies and directions should also inform discussions that the member companies of the VIMAB participate in and the development of labour market information gathering for the sector.

9. International Labour Office. (2008). *Skills for improved productivity, employment growth and development*. Geneva, Switzerland: International Labour Office.

This report focuses on a number of skills development issues. The ones that are most pertinent to the VIMAB discussions relate to skills and productivity in the workplace and along value chains.

10. Kim, Y., & Ployhart, R. (2014). The Effects of Staffing and Training on Firm Productivity and Profit Growth Before, During, and After the Great Recession. *Journal of Applied Psychology*, 99 (3), pp. 361-389.

This study integrates research from strategy, economics, and applied psychology to examine how organizations may leverage their human resources to enhance firm performance and competitive advantage. Staffing and training are key human resource management practices used to achieve firm performance through acquiring and developing human capital resources. However, little

research has examined whether and why staffing and training influence *firm-level* financial performance (profit) *growth* under different environmental (economic) conditions. This research is intended to fill that gap and as such will be useful within the context of the work with the Vancouver Island manufacturing sector.

11. Patrignani, P., & Conlon, G. (2012). *Estimating the Impact of Training on Productivity using Firm-level Data*. London, UK: Department for Business, Innovation and Skills.

This UK report provides an overview of the impact of training undertaken at the firm level on productivity. This issue is seen by the authors as of interest both to companies and policy makers and as such should be useful in informing the work of the VIMAB.