Agricultural Adaptation Council

"TOGETHER WE'RE BETTER"

A BLUEPRINT FOR SOLVING THE CRITICAL SKILLS SHORTAGE IN ONTARIO'S AGRI-FOOD INDUSTRY

AOFP Alliance of Ontario Food Processors

Developed for the Alliance of Food Processors by Laughlin Consulting Inc. and Jayeff Partners

ACKNOWLEDGMENTS

Funding for this project was provided in part by Agriculture and Agri-Food Canada through the Agricultural Adaptation Council.

Agricultural Adaptation Council

Agriculture and Agri-Food Canada | Agriculture et Agroalimentaire Canada

STEERING COMMITTEE MEMBERS:

Craig Richardson (Chair – CEO Grand River Poultry)
Ted Bilyea (consultant, former CEO of Maple Leaf Foods)
Marjory Overholt – Senior Adviser, Program Delivery Unit, Ministry of Economic Development and Trade
Patti Redmond – Director, Programs Branch, Ministry of Training, Colleges and Universities
Bonnie Winchester (ADM, Economic Development Division) - Ministry of Agriculture, Food and Rural Affairs
Support:
Jane Graham- Alliance of Ontario Food Processors
Martin Bohl – Manager- Business Development Branch - Ministry of Agriculture, Food and Rural Affairs

The authors appreciate the right to use the photographs of Ontario scenes, which were provided by the Ontario Ministry of Economic Development and Trade.

NOTICE TO THE READER

The opinions and interpretations in this publication are solely those of the authors, John Laughlin of Laughlin Consulting Inc. and James Farrar of JAYEFF PARTNERS. They do not necessarily reflect those of the Alliance of Ontario Food Processors, including its directors, staff and its members, and the funding partners including the Government of Canada as represented by the Agricultural Adaptation Council and the Government of Ontario as represented by the participating Ministries.

TABLE OF CONTENTS

EXECUTIVE SUMMARY PAGE 5

SECTION 1 - PAGE 11

INTRODUCTION:
- context
- summary of deliverables
- purpose and function of the blueprint

SECTION 2 - PAGE 17

LABOUR SHORTAGES IN THE FOOD PROCESSION SECTOR: WHAT THE DATA SUGGESTS AND INPUT FROM THE INDUSTRY

Research / Literature Review / Industry Input
- How Ontario's food processing sector differs from other industrial sectors
- What Does the Data Indicate? Summary

Conclusion – Labour shortage is real, looming and serious. Now is the time to act.

SECTION 3 - PAGE 32

OVERCOMING THE DISCONNECT: WHY ONTARIO'S FOOD AND BEVERAGE PROCESSING SECTOR IS NOT ATTRACTING MORE YOUNG PEOPLE INTO SKILLED TRADES

Focus Groups for Students, Teachers and Administrators
- Influences on college selection - provincial prospective
- Process/ summary of findings / analysis
- Emerging themes / Key messages

Conclusion – Students don't have the Food Processing Industry on their radar screen

Focus Groups for New Canadians
- Provincial perspective
- Process /summary of findings/ analysis

Conclusion – New Canadians have unlimited potential

Aboriginal Status
- Provincial perspective
- Analysis

Conclusion – Ongoing consultation is required

SECTION 4 – PAGE 43

THE ROLE OF CURRICULUM

Program
- Process
- Curriculum customization
- Educational programming
- Program offerings
  - skilled trades
  - apprenticeships
  - supervisor position
- Facilities
- Equipment
- Corporate training

Conclusion – Program Development / Customization is an Immediate Requirement

TABLE OF CONTENTS CONTINUED

SECTION 5 – PAGE 53

THE BENEFITS OF EARLY-STAGE TARGETING

Connections to secondary school

- Specialist high skills major

Conclusion – Connecting with secondary schools will assist in profiling the industry

SECTION 6 – PAGE 56

SPECIALIZED SECTOR INFRASTRUCTURE TO ENHANCE LEARNING OPPORTUNITIES - CONESTOGA – INSTITUTE OF FOOD PROCESSING

Conclusion – We need a "Centre of Excellence"

SECTION 7 – PAGE 63

DELIVERING THE MESSAGE

Communications Plan

- Needs analysis / objectives
- Key messages / target audiences
- Communication tactics
- **Conclusion - Profiling this sector is a prerequisite to successful implementation**

SECTION 8 – PAGE 66

OPTIONS FOR ACTION

Implementation Options

- Options
- Incremental Beginnings
- **Conclusion – Together We're Better – We must act now!**

SECTION 9 – PAGE 72

REVIEW / DEVELOPMENT / IMPLEMENTATION TIMELINES

SECTION 10 – PAGE 75

SUMMARY

- List of Recommendations

SECTION 11 - PAGE 79

APPENDICES

Appendix 1 - Overview of colleges visited
Appendix 2 - Learning outcomes techniques / technician / technologist
Appendix 3 - Educational programming - Mohawk College
Appendix 4 – Pre-Apprenticeship / Apprenticeship: an overview
Appendix 5 – Program description mechanical technician – Machine tool builder integrator
Appendix 6 – Co-op program description – Basic machine operator
Appendix 7 – Co-op program description – Industrial electrical technician
Appendix 8 – Program description – Manufacturing Leadership Certificate Program
Appendix 9 – Supervisors course – The 3 A's of leadership and authority
Appendix 10 - Program description for Management in maintenance, productions, operations etc.
Appendix 11 – Diploma program in food safety - Loyalist
Appendix 12 - Supervisor courses - GFTC
Appendix 13 – Letter of support – Siemens Canada
Appendix 14 - Course description for module 1 of Process operator
Appendix 15 – Communications plan - Honey Design marketing & communications

TOGETHER WE'RE BETTER
A Blueprint for Solving the Critical Skills Shortage in Ontario's Agri-Food Industry

EXECUTIVE SUMMARY

Context
As a vital economic engine, the food and beverage manufacturing industry makes a stable contribution to the Ontario economy. This 33 billion dollar industry is the second largest manufacturing sector in the province with over 3,000 establishments and over 100,000 workers. Many of its manufacturing facilities are located in rural areas and many more use agricultural and food inputs that originated on Ontario farms. In order to preserve this industrial heritage, the sector is in dire need of skilled technicians to work in its diversified processing plants. This report is a *call to action* to ensure that Ontario's food and beverage industry has the skilled workers they will require for the next ten years and beyond.

This report is based on research, focus groups, and a review of recent literature and published data. The research shows that Ontario's food processing industry is headed for serious shortages of skilled workers as the current generation of workers retires unless urgent steps are taken to stream young people, both from Ontario's current school system and from immigration, into technical careers in the sector. Upgrading the skills of existing workers to enable them to handle more technologically sophisticated tasks is also an area that must be addressed by industry.

To attract young people to careers in the food processing sector, it is essential that industry enhances the image of this sector with both prospective workers and those who influence their career choices. Industry must also have up-to-date training facilities and relevant courses in place to develop the skills for workers that employers in Ontario's food processing sector will require. To achieve both these goals requires an effective plan, driven by investment and commitment from industry, government and the educational institutions that deliver the curriculum. The object of the blueprint is to provide the outline of this integrated plan for Ontario.

Deliverables
In the original terms of reference, there were four components accompanied by separate objectives and deliverables. These components included:

- surveying high school students and those with current careers in the industry;
- updating research on labour shortages including interviews with food industry executives;
- assessing industry's commitment to hire apprentices, co-op students and graduates;
- identifying programs that need to be designed and customized;
- securing a commitment from industry, government and academia for the sustainability of programs developed as a result of this project;

The fifth component was the development of a blueprint that provides a clear plan of how industry, academia and government could work collaboratively to create and deliver skilled trades programs for the food processing sector.

Purpose and Function of the Blueprint
Ontario's food and beverage processing industry is under intense competitive pressure at the present time. The rapid and unexpected escalation in the value of the Canadian dollar, vis-à-vis the US dollar, has increased labour costs. Nevertheless, Ontario's food processing industry has been resilient in the past, having fared well during the implementation of the Canada-US free trade agreement during the 1990s. Unlike other sectors of manufacturing, such as automotive, which are particularly vulnerable to competition from low cost labour jurisdictions in the Far East, Ontario's food processing sector has a number of competitive advantages. These advantages include the short supply lines for many essential inputs from highly productive farms

and the proximity of major markets in central Canada, the eastern seaboard and the US Midwest. The escalation in the value of the Canadian dollar has lowered the cost of importing highly automated machinery from the US and Europe and, because many commodity inputs are priced by reference to the US dollar, it has also lowered the cost of many materials. Although the authors foresee a period of adjustment ahead for Ontario's food processing industry, which may lead to some branch plants closing and some companies failing, the majority of companies that are able to make the adjustment to the high Canadian dollar will most likely be those that are able to achieve gains in productivity by investment in labour-saving automation. Thus, the issue of having sufficient skilled workers remains urgent and relevant to the future of Ontario's food and beverage processing industry.

What Does Recent Data Indicate About Ontario's Labour Market in this Sector?

In the literature review undertaken for this project, the most relevant recent study was released by The Conference Board of Canada in September, 2007, entitled *Ontario's Looming Labour Shortage Challenges: Projections of Labour Shortages in Ontario, and Possible Strategies to Engage Unused and Underutilized Human Resources.* While the study does not, however, segregate sectors, it serves to validate that labour shortages are looming broadly across Ontario's economy. The more specific information in *Workforce Ahead* suggests that the food and beverage industry's skilled workers will be among the first and hardest hit by labour shortages for three main reasons: (a) the average age of workers in the food and beverage processing sector in Ontario is greater than the average age for all manufacturing (b) the compensation paid to workers in food and beverage processing is less, on average, than for all manufacturing and (c) the educational attainment of workers in food and beverage processing is less, on average, than other industrial sectors in Ontario.

The *TCBC Labour Shortage* study identified 2014 as the tipping point in which the demand for workers will begin to exceed the supply across the economy as a whole. As this trend increases in severity, the study authors projected that by 2025, the worker shortfall will be 364,000. With respect to immigrant workers, the *TCBC Labour Shortage* authors recognize that the flow of immigrants cannot be taken for granted indefinitely. Thus, any strategy for addressing the need for skilled workers for the food and beverage processing industry should not rely solely on immigrants and needs to also urgently address streaming students in the K-12 education system into food and beverage processing industry careers.

The *Workforce Ahead* study found that there were over 3,430 workers in selected skilled occupations in Ontario's food and beverage processing industry who were 45 years of age or older in 2001. On the basis that this skilled group of workers will be retiring at the rate of 10% per year beginning in 2008 and for each year thereafter, there is a need to replace at least 343 skilled workers in positions such as industrial electrician, millwright, refrigeration mechanic, process operator and stationery engineer every year just to keep employment levels stable.

Focus Group: Students / Teachers / Administrators

Focus group interviews were held with students, teachers, consultants and administrators in six secondary schools across the province. Most staff and students have a limited understanding of the food processing sector. Much of their perception is negative: they identify slaughter-houses, and boring, repetitive factory work as characteristics of this sector. The consultants also asked students what key messages, if developed into a theme or marketing plan would resonate with them. They suggested promoting the concept of sustainable jobs, good wages, clean environments, flexible hours and investing in our country by helping to feed our people.

Focus Group: New Canadians

Focus group interviews were also held with settlement / placement workers and community leaders, as well as a number of new Canadians from a variety of immigrant groups.
The author concluded that new Canadians could play a vital role in addressing the shortage of skilled labour in the food processing sector, if authentic short courses were developed, commensurate with their ESL needs, in a location that is in close proximity to the work locale.

The Role of Curriculum

In order to attract more students into the skilled trade positions, it is important to understand the role of curriculum and how it can be developed to best meet the needs of employers and, at the same time, attract interest from students.
The consultants believe there is a need to continue to work with colleges to design and / or customize programs that:

- are based on traditional proven courses currently being offered;
- are recognized by the Ontario Association of Certificate Engineering Technicians and Technologists;
- can be readily customized to meet the unique needs of the food processing sector;
- are flexible in terms of time (modular approach).

Currently the consultants are working with several colleges related to customizing curriculum and are examining a cluster of programs via industry advisory meetings, to determine the extent to which they could be customized to the meet the unique needs of the sector.
Apprenticeship opportunities provide another significant path for individuals. This is a desired method for individuals seeking an authentic learning experience.
Corporate training is an integral part of any joint college / industry program venture, particularly as it relates to current employees. Employees at all levels have clearly stated that they have ongoing needs and there is an expectation that these requirements will be dealt with through ongoing corporate training programs. Supervisors told the consultants in a variety of settings that training in "soft skills" (conflict resolution, dealing with difficult people, safety issues) were areas that needed immediate and ongoing assistance.
While there is no question that there are challenges related to providing the training, while keeping the lines up and running, it is the opinion of the consultants that support from both government and industry is essential if these training needs are to be addressed.

Communications Plan

Related to enhancing public awareness the literature reveals that the food industry does not enjoy a particularly favorable perception, especially by younger workers and individuals seeking new careers
A comprehensive marketing plan for this sector should be developed that would enable industry to:

- create an appealing, innovative and exciting brand identity for the industry;
- inform high school and college students of career opportunities in the sector;
- establish a positive reputation for the food and beverage processing Industry;
- participate in opportunities to attract and retain skilled workers to the sector.

Options for Action

This section entitled "Option for Action" outlines areas the consultants believe should be considered as implementation plans are formulated. Each option leads to either a single or a series of recommendations outlined in the following section. They are as follows:

Marketing Related Option

A comprehensive marketing plan is required if the industry hopes to both change the image of this sector and profile food processing for potential workers. It is the opinion of the consultants that this plan should be developed and phase one of the implementation process started in time to positively impact college enrolments for the 2008/09 school year.

Immigrant Related Option

With support and training methods designed to reflect the needs of new Canadians, immigrants could play a significant role in addressing the labour shortage. It is the consultants' view that customized, modular short courses are appropriate ways of beginning the re-training process.

Program Related Option

Curriculum that is customized to meet the unique needs of prospective college students as well as current employees is essential if colleges and industry are to recruit and retain individuals in this sector. Ongoing participation through industry advisory committee must continue and in fact escalate if industry hopes to make a difference in this area.
Governmental support for the development and implementation of corporate training programs in the opinion of the consultants is essential to the retention of current employees. Support for both the industry and the worker is also required to enable individuals to avail themselves of these opportunities during the work day.

Equipment Related Option

State-of-the-art equipment is required if industry hopes to shorten the learning curve between the school experience and the work experience. It is the consultants' opinion that industry and individual corporate citizens would be prepared to financially support colleges related to this endeavour.

Education Related Option

The concept of a Specialist High Skills Major should enhance the profile of this sector with secondary students. Participation in this credit opportunity coupled with industry input to the grade 10 open guidance credit should enable students to better understand and appreciate the food processing industry. A program in this sector similar to the "Ontario's Rangers Program" under the Ontario Summer Jobs Program would also assist in profiling the sector.

Apprenticeships Related Option

Apprenticeship opportunities provide another path for individuals. While this is certainly a desired method for individuals seeking an authentic learning experience, industry must be prepared to take on apprentices and provide them with the practical experience they require.

Incentive Related Option

The consultants believe that governmental initiatives such as an incentive policy be used in tandem to raise productivity by encouraging greater capital investment in automation technology, and by obtaining more skilled workers for the sector on the other hand. Tax incentives for retraining existing workers are also an important part of a well-balanced incentive approach.

Service Delivery Options

Centre of Excellence Related Option

If a dedicated Institute of Technology is selected as the preferred option, in the consultants' opinion Conestoga College should be the location for that institute. Conestoga is an Institute of Technology and Advanced Learning with the mandate to offer 15% of its programming in an applied degree format and conduct applied research. It has a full range of academic programming from preparatory to apprenticeship to one-year certificate, two- and three-year diploma, four-year degree programs, as well as post-degree and post-diploma programming.

Federated Related Option

Within this option essentially colleges would form a "Federated School of Food Technology". Learners would have access to a variety of educational opportunities, including training modules, apprenticeships and certificate diploma and undergraduate and graduate degree programs at their *home* college.

Coordinator Related Option College

Essentially this option utilizes features of the previous two options. An institute for Food Technology would be recommended for the Cambridge site. Conestoga would act as a coordinating body with other colleges cooperating related to the development of terms and conditions, course offerings etc.

Regional Related Option

This option essentially involves establishing a minimum of six centres of excellence across the province related to where industry has traditionally established a working relationship with a local college.

List of Recommendations

Marketing Plan Recommendations

With the support of the Agricultural Adaptation Council, (AAC), Ontario Ministry of Agriculture, Food and Rural Affairs (OAFRA), Ministry of Training, Colleges and Universities, (MTCU), Ministry of Education (MEDU), the Alliance of Food Processors (AOFP) should immediately develop a comprehensive marketing plan with the objective of favourably changing the perception of the food processing sector to one that will enable students to embrace the industry as a "Career of Choice"

That the Alliance immediately consider contracting a firm to develop and implement a regional education / industry campaign with secondary students and guidance teachers as well as grade 7 and 8, college and university students.

Recommendation related to Addressing the Needs of the Immigrant Workers

The Alliance of Ontario Food Processors work collaboratively with colleges, the Guelph Food Institute of Technology, the Ministry of Citizenship and Immigration and Citizenship and Immigration -Canada to develop a series of "short courses" (modules) for New Canadians.

Program Recommendation

Colleges continue to collaboratively work together with Local Industry Advisory Committees to customize existing programs at both the skilled trades and supervisory level to meet the unique needs of the food processing sector.

Corporate Training Recommendations

That all Colleges throughout the province continue to customize programs related to this sector and respond to industry's needs for corporate training in a supportive manner.
That the government support the food processing sector by funding both the development and implementation of customized training programs for skilled workers and supervisors

Equipment Recommendation

That the college(s) selected to house the Institute of Food Technology approach private industry and individual corporate citizens related to the value of making a significant "in kind" investment of automation equipment and software unique to food and beverage processing.

Education Recommendations

That the Alliance immediately forward a copy of this blueprint to the Director of the Student Success Branch, with an accompanying formal letter requesting that the food processing sector be added as a sector in 2008 to the phasing in of the High Skills Major concept.

Apprentice Recommendation

That industry commit to hiring more apprentices in their factories and commit to working with them to complete their training.

Taxation Recommendation

That public policy in other government initiatives, such as taxation policy, be aligned with the objective of obtaining more skilled workers for the sector through joint cooperation of industry, government and educational institutions.

Recommendation related to an Institute of Food technology

The Ontario Government support the Alliance of Food Processors by committing the financial resources required to build a "State of the Art" Institute of Food Technology at Conestoga.

Implementation Recommendation

That AOFP act as the coordinator, to harness the commitment of food industry executives, to collaboratively develop, "own" and champion the implementation plan and support its execution.

Section 1

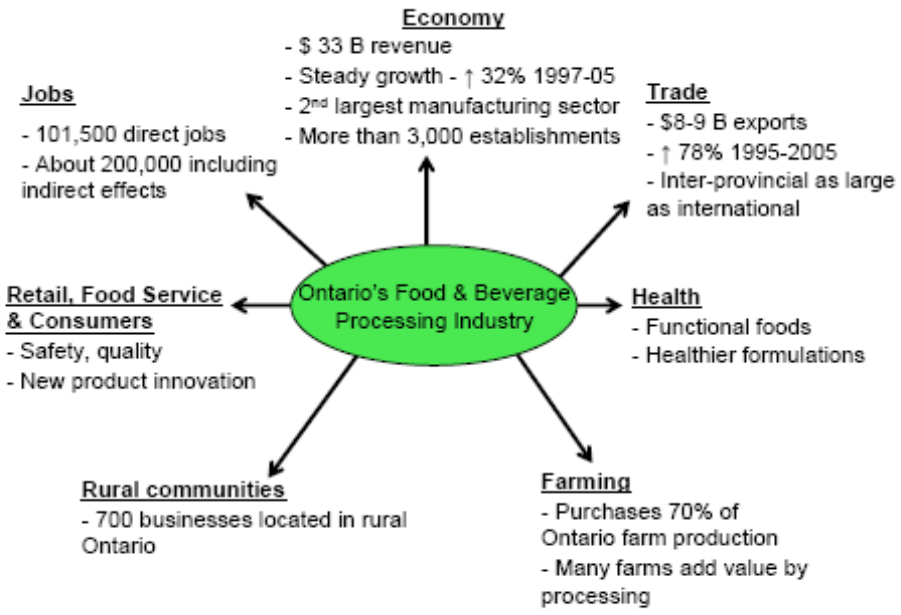
INTRODUCTION

1.1 Context

One of the most basic functions of any society is to provide sufficient food for the sustenance of its citizens. In western civilization, we have taken our food supply for granted. We just head down to the nearest grocery store or quick service restaurant to obtain whatever we need whenever we want. There are a number of emerging factors in the twenty-first century that indicate our food supply should not be taken for granted.

- The unprecedented population of the world, now well past the 6.6 billion mark, means that there are ever more mouths to feed;
- Changing climactic patterns and accompanying changes in agricultural production require adjustments and adaptations;
- New threats to the safety of the food supply: from natural sources such as BSE and avian influenza, bioterrorism, and imports from source countries that lack reliable food safety systems and controls.

The Province of Ontario is endowed with some of the world's finest agricultural land. Over the past century, a thriving food processing industry has grown up, in the heart of North America, transforming Ontario's farm outputs into nutritious and safe processed fresh food and beverages for consumers in Ontario and across the continent. As a rich strategic resource, the food and beverage manufacturing industry fulfils a vital need for society and makes a significant contribution to the Ontario economy.



Economic Importance of Ontario's Food Processing Sector

Source: *A Strategy for Ontario's Food and Beverage Processing Industry*, Draft Document, September 30, 2007

In order to preserve this industrial heritage and build its future, the sector needs skilled technicians to work in its diversified processing plants. This report is a ***call to action*** to ensure that Ontario's food and beverage processing operations have the skilled workers that they will need for the next ten years and beyond.

As the chart on the preceding page illustrates, the food and beverage processing industry provides the market for 70% of the output from Ontario farms. There is a cascading impact if the food and beverage processing sector in Ontario falters because it does not have sufficient trained workers. Without a workforce with sufficient technical skills, the level and rate of implementation of technology will not keep pace with other global competitors; that decline, in turn, will lead to lower levels of productivity and ultimately, to disinvestments. The demand for outputs from Ontario farms will fall and the extent of the value that is added in Ontario through processing activities will lose ground to other jurisdictions. Developing the skilled workforce in Ontario's food and beverage processing industry is essential. Sufficient skilled workers are the key to ensuring that the industry remains a major economic force for agriculture and for many rural communities in Ontario.

This report is based on research, undertaken both by the authors in interviews and focus groups, and by reviewing recent literature and published data. The research shows that Ontario's food processing industry is headed for serious shortages of skilled workers as the current generation of workers retires unless urgent steps are taken to stream young people, both from Ontario's current school system and from immigration, into technical careers in the sector and to upgrade the skills of existing workers to handle more technologically sophisticated tasks.

To attract young people to careers in the food processing sector, it is necessary to build a positive image of working in this sector that both prospective workers and those who influence their career choices embrace. It is necessary to have up-to-date training facilities and relevant courses in place to develop the skills for workers that employers in Ontario's food processing sector will need. To achieve both these goals requires an effective plan, driven by investment and commitment from industry, government and the educational institutions that deliver the curriculum. The object of this blueprint is to provide the outline of such an integrated plan for Ontario where the greatest part of Canada's food processing occurs.

Detailed worker age data by occupational classification published in *Workforce Ahead*[1], based on the 2001 census, shows that there were approximately 3,430 workers in the food processing sector in skilled labour positions (mechanics, industrial electricians, machine operators, stationery engineers, refrigeration mechanics, etc.) that were 45 years of age or older in 2001, a much higher proportion of older workers than the manufacturing industry generally in Ontario. Allowing that at least 10% of this workforce will be retiring in 2008 and each year thereafter for the next ten years, there will be a need for at least 343 new

[1] *Workforce Ahead*, Appendix K, Tables K.1 to K.11 for NOC occupational classifications including H212, H221, H413, C143, J171, and J172 for NAIC codes 3111 to 3119 and 3121.

skilled workers each year to replace those leaving the workforce. This minimum estimate of new skilled workers that will be required does not include the retraining needs of current workers to enable them to handle more sophisticated, automated machinery and processes.

While the authors have not attempted to estimate the cost of implementing the recommendations of this report, including the recommendation related to a new Institute of Food Technology, it is helpful to keep any investment in training for the food and beverage processing sector in perspective. Relative to the 101,500 workers in this industrial sector, on a per worker basis, for example, an investment of $50 per worker for each year over three years would represent a total outlay of $15.3 million. The return on a public sector investment in this order of magnitude is expected to be very attractive. If each newly trained skilled worker draws wages for a thirty year period, and the minimum number of new skilled workers trained is 343 per year, the cumulative direct economic payback in personal income and retail sales taxes from this investment to the Province is expected to be in the range of $4.1 million per year at an individual level of $12,000 per worker per year. The indirect economic impact that training these skilled workers will bring is many multiples of their direct impact because they will anchor the food and beverage processing industry in Ontario and the tens of thousands of lesser skilled jobs it represents and jobs outside of the factory.

The urgency with which the situation is addressed will depend, to a large extent, on one's assessment of the severity of the critical skills shortage. In this report, the authors show why they believe that the skills shortage in the food and beverage processing sector is real and needs to be taken very seriously. There are no quick fixes. Any solution requires years to plan and implement and perseverance to remain committed to the program until the graduates are placed. Five years from now, the authors expect that the graduates of the institute proposed in this Blueprint, together with their food and beverage industry employers, will validate the wisdom of having moved ahead at this time.

1.2 Deliverables

With the vision that action needed to be taken to secure the supply of skilled workers that Ontario's food processing sector will need in future, the Alliance of Ontario Food Processors commissioned a team of consultants to undertake this study.

In the original terms of reference, there were four components laid out with separate objectives and deliverables. These components covered surveying high school students and those with current careers in the industry; updating research on labour shortages including interviews with food industry executives and assessing their commitment to hire apprentices, co-ops or graduates; identifying programs that need to be designed and customized, how and where they will be delivered and identifying target groups; and securing a commitment from industry, government and academia for the sustainability of programs developed as a result of this project. The fifth component was the development of a blueprint "to tie all of the foregoing components together to provide a clear plan of how industry, academia and government will execute the creation and delivery of skilled trades education for the food processing sector."

1.3 Purpose and Function of the Blueprint

This report, known as "The Blueprint," is the integration of the research and discovery phases of this project to set forward options and recommendations for a tripartite solution to providing the supply of skilled workers that Ontario's food and beverage processing industry will need in the years to come.

Ontario's food and beverage processing industry is under intense competitive pressure at the present time. The rapid and unexpected escalation in the value of the Canadian dollar, vis-à-vis the US dollar, has increased our cost structure, for such major inputs as labour, relative to the US. Certain sectors, such as meat processing, face added uncertainties at the border as a result of non-tariff barriers imposed by the USDA to address food safety concerns. Many managers responsible for the operation of Ontario's food processing plants have a short-term focus on survival. Longer term strategic planning issues, such as where workers for the future will be found, tend to be overtaken by immediate challenges related to managing costs and markets and staffing the plant for next week's production. In such circumstances as this, the vision and leadership of the Alliance of Ontario Food Processors, in consort with its government and educational partners, is essential to moving forward with a plan that will contribute to the industry's future prosperity.

Nevertheless, Ontario's food processing industry has been resilient in the past, having fared well during the implementation of the Canada-US free trade agreement during the 1990s. Unlike other sectors of manufacturing, such as automotive, which are particularly vulnerable to competition from low cost labour jurisdictions in the Far East, Ontario's food processing sector has a number of competitive advantages. These advantages include the short supply lines for many essential inputs from highly productive farms and the proximity of major markets in central Canada and the major population centres of the eastern seaboard and Midwest US. The escalation in the value of the Canadian dollar has lowered the cost of importing highly automated machinery from the US and Europe and, because many commodity inputs are priced by reference to the US dollar, it has also lowered the cost of many materials. Although the authors foresee a period of adjustment ahead for Ontario's food processing industry, which may lead to some branch plants closing and some companies failing, the majority of companies that are able to make the adjustment to the high Canadian dollar will most likely be those that are able to achieve gains in productivity by investment in labour-saving automation. Thus, the issue of having sufficient skilled workers remains urgent and relevant to the future of Ontario's food and beverage processing industry.

The opportunity for productivity gains will not be able to be optimized without highly skilled technical and supervisory employees. The authors foresee fewer jobs in Ontario's food processing industry as a result of real gains in productivity, with job reductions occurring in the low skilled, low pay manual labour positions. Both the relative proportion and absolute number of skilled workers will need to increase at a time when skilled workers of Baby Boom age are retiring and leaving the workforce.

Thus, the collective challenge of the industry, government and educational institutions is to supply the skilled workers that Ontario's food and beverage manufacturing industry require in order to be competitive in a global economy.

While the consultants refer to food and beverage manufacturing as one industrial sector, as a sector it has a great deal of diversity in the type of operation. This diversity needs to be taken into consideration when considering the options and recommendations because "one size" does not necessarily fit all employers' needs. In addition to a range of company sizes, ownership structures and dispersion across different regions of Ontario, there is a wide range in the types of processing operation actually carried out. The range includes high volume food processing plants that are similar to petrochemical refineries and pharmaceutical production laboratories, running on 24/7 schedules, as well as small bakeries and abattoirs that run small batch processes with significant manual labour. Many companies share a common core of skilled worker needed to operate boilers, refrigeration plants and automated machinery but individual sub-sectors, such as meat packing, have specialized needs for workers with knife skills that are not common to other sub-sectors. In this report, the emphasis is on those skills that are broadly needed across all sub-sectors.

Section 2

LABOUR SHORTAGES IN THE FOOD & BEVERAGE PROCESSING SECTOR

2.1 How Ontario's Food & Beverage Processing Sector Differs From Other Industrial Sectors

The *Alliance of Ontario Food Processors*, with support from the Ontario Ministry of Agriculture, Food and Rural Affairs and Human Resources & Skills Development Canada, commissioned a labour study of Ontario's Food Processing Industry in 2005. This comprehensive study, published as *Workforce Ahead*[2], analyzed the 2001 Statistics Canada census data for workers in the food and beverage processing sector by a number of criteria including the specific sub-sector of the industry, according to the classification system in use by Statistics Canada; in which of eight regions in Ontario the workers were employed; the age, gender, education level and immigrant status of the workers; and the specific occupational classification of the workers. In addition to the census data, much of which was from custom runs and not otherwise published or available, firms were extensively surveyed and interviews were conducted with executives in the industry to validate the findings.

Workforce Ahead predicted that worker shortages will become more acute as Baby Boomers increasingly leave the workforce for retirement. The Baby Boomer generation represents a significant bulge in the demographic age patterns of Ontario's population and there are not as many younger workers in development in the pipeline behind them to fill all the jobs they will be vacating. Thus, Ontario will continue to rely heavily on immigration to supply the workers which it requires. Immigration is not necessarily an inexhaustible supply of new workers because many other developed countries have a similar demographic pattern to Ontario's, with a growing need for workers, and therefore competition for immigrants, especially those with a high level of skills, will become more intense on a global scale. Although some of the data analysis for *Workforce Ahead* was based on the 2001 census, demographic data is long-term in nature and does not change dramatically over a five year period. As a result, the detailed results noted in that report remain valid indicators of the Ontario food and beverage processing industry workforce.

In developing public policy, it is important to recognize the ways in which Ontario's food and beverage sector differs from other industrial sectors. The food and beverage sector in Ontario is more at risk sooner in time for worker shortages than other industrial sectors in Ontario's economy for a number of reasons, based on data drawn from the *Workforce Ahead* study:

- The age of workers in the food and beverage processing sector in Ontario is greater, on average, than other industrial sectors, and this age weighting towards older workers is most marked in the highly skilled trades – this fact leads to the prediction that skilled worker shortages will begin to show up sooner in food and beverage processing than other industrial sectors[3]

[2] An executive summary of the study, as well as the full study, are available for free downloading from the Alliance of Ontario Food Processors' website, www.aofp.ca. One of the co-authors of the study, James Farrar of Jayeff Partners, had the lead responsibility for this section of this blueprint development project. Since co-authoring the *Workforce Ahead* report, James Farrar has also written nine case studies for the Alliance of Ontario Food Processors in 2007 on best human resource practices in Ontario's food and beverage industry. These case studies will be used in the curriculum under development by the Guelph Food Technology Centre for course modules for supervisors. The case study research reinforced many of the conclusions in *Workforce Ahead*.

[3] *Workforce Ahead*, Chart 3.21, p. 49 and Table 3.7, p. 33

- The compensation paid to workers in the food and beverage processing sector in Ontario is less, on average, than other industrial sectors – this fact leads to the prediction that as wages begin to rise in a tight labour market, the economic capacity of the food and beverage sector to compete for skilled workers will be less than for other industrial sectors. Increases in the Ontario minimum wage, taken together with an effective real increase in wage rates vis-à-vis neighbouring US states as a result of the rising value of the Canadian dollar, represent an immediate increase in the real cost of labour[4]
- The educational attainment of workers in the food and beverage processing sector in Ontario is less, on average, than other industrial sectors – this fact leads to the prediction that, as more capital is invested to replace labour and automate processes, the Ontario food and beverage processing sector will not be in an advantageous position to support adopting higher levels of technology[5]

There are two primary supply sources for future workers for Ontario's food processing industry. The first source is young people who have gone through the Ontario education system, from "K to 12." The second source is new adult immigrants to Canada. The blueprint strategy needs to consider both potential pools of future workers and how they relate to Ontario's college system. The authors recognize that there are other pools including mature workers, aboriginal youth, and disabled workers for which a goal could be to achieve higher participation rates in this sector. It is not the focus of this report, however, to look at these pools specifically and the policies necessary to increase their engagement in this industrial sector.

As part of the research undertaken for this report, the authors took the updated macro data for workers across Ontario generally (as assessed in the Conference Board of Canada study discussed in s. 2.1 of this report) and for the food and beverage manufacturing industry in Ontario specifically (as assessed by the Canadian Council on Learning research discussed in s. 2.2 of this report) and compared it with the findings from their interviews with food and beverage manufacturing industry executives. The macro data conclusively shows that there is a serious looming skilled worker shortage in Ontario for the food and beverage manufacturing study. The interviews confirm that firms are experiencing difficulty in filling certain skilled positions and are increasingly concerned about finding skilled workers in future.

The question that the authors sought to probe in their interactions with company executives was the extent to which concerns over skilled worker shortages translate into commitment to take action. The actions specifically tested to assess the degree of company commitment in the interviews were:

- developing a closer working relationship with the Ontario college system by developing customized curriculum, through apprenticeships, internships and co-op education experiences;
- forming a nucleus or pivot for the food processing sector in an Institute of Food Technology at an Ontario college.

[4] *Workforce Ahead*, Chart 3.23, p. 52
[5] *Workforce Ahead*, p. Charts 3.17 to 3.19, p. 40 & 41

The authors found that because the food and beverage manufacturing industry does not have a history of working together to address worker shortages, there is not yet the cultural foundation for the industry to overwhelmingly endorse any specific collective action. The industry is at the stage of development where awareness of the problem is becoming critical, together with the corresponding recognition that action needs to be taken. While relatively few industry executives have engaged at this point in time in inter-firm cooperation, working with the college system and government, there is growing recognition that now is the time to initiate joint action. Both from the recent on-line survey conducted by the *Alliance of Ontario Food Processors* and from executives that attended the industry consultation session on October 3, the need for skilled workers has been identified as a high priority and serious sector issue.

The *Alliance of Ontario Food Processors* can serve in a leadership and coordination role, drawing on the experience of its Board members, who have a thorough grasp of the severity of the problem and have articulated a vision by which it can be addressed. They will inspire their colleagues in the industry to embrace the same passion and sense of urgency to take definitive, meaningful action. Because both the macro statistical data and the information gained through industry interviews confirm the looming skilled worker shortage in the food and beverage manufacturing sector, and because the lead-time to implement a solution is measured in years, the authors recommend that no time be lost in proceeding forward to take action. Concurrent with that initiative, ongoing communication needs to be maintained with industry executives to increase their understanding of the challenge.

2.2 What Does Recent Data Indicate About Ontario's Future Food and Beverage Labour Market?

2.2.1 Conference Board of Canada Study

In the literature review undertaken for this project, to assess the current outlook for workers in the food and beverage processing industry in Ontario, the most relevant recent study was released by The Conference Board of Canada in September, 2007 entitled *Ontario's Looming Labour Shortage Challenges: Projections of Labour Shortages in Ontario, and Possible Strategies to Engage Unused and Underutilized Human Resources.* This report was undertaken with financial support from Colleges Ontario. The relevance of this study is both its currency and the fact it looks at Ontario data specifically. While the study does not, however, segregate sectors and therefore contains no information that is specific to the food and beverage processing industry in Ontario; it serves to validate that labour shortages are looming broadly across Ontario's economy. The more specific information in *Workforce Ahead* indicates, as noted in the Introduction, that the food and beverage industry's skilled workers will be among the first and hardest hit by labour shortages. In the balance of this section, where reference is made to the findings of this study, it will be abbreviated as the *TCBC Labour Shortage* study.

The *TCBC Labour Shortage* study identified as 2014 – now only six years away – as the tipping point in which the demand for workers will begin to exceed the supply across the economy as a whole. As this trend increases in severity, the study authors projected that by 2025, the worker shortfall will be in the range of 364,000. Their projections confirm that a worker shortage in Ontario is a real threat to the Province's economic growth in the coming decade. The *TCBC*

Labour Shortage study notes that recent declines in the manufacturing sector in Ontario are currently masking the full extent of the labour shortage. While the shedding of jobs by other manufacturing sectors may create a supply of workers in the short-term, many of these workers will need retraining in order to be optimally employed in the food and beverage processing sector.

The analysis suggests that although labour market pressure currently remains muted, Ontario will soon be entering a period where pressures begin to mount significantly. Although labour supply currently exceeds labour demand that situation is expected to reverse itself by 2014 with the projected gap between labour demand and supply continuing to grow thereafter. [p. 5]

In considering how the economy might be expected to adjust to a labour shortage, the *TCBC Labour Shortage* study notes that wage rates will be bid up, leading to more capitalization.

An important question that arises from this analysis is whether this labour shortage will significantly constrain Ontario's output growth. A gap as large as 364,000 or 564,000 is not sustainable over the long-term. Before reaching this point, markets would adjust to bring labour supply and demand into balance. One of the main adjustments would be a rapid increase in the nominal and real wages, which in turn would drive a substitution of capital for labour – and therefore produce much higher rates of labour productivity. [p. 13]

This anticipated outcome is particularly relevant to the Blueprint project. From interviews the authors have conducted, they have learned that many Ontario food processing firms, even in the GTA, begin their entry level workers at wage rates below $10 per hour. As the Ontario minimum wage is scheduled to rise in three increments to $10.25 per hour by January 1, 2010, there will be considerable upward pressure on wages in the most labour intensive sectors of the food and beverage processing industry. Thus, the drive to substitute capital for labour will occur in the food and beverage sector earlier than in other industrial sectors where starting wages are typically higher.

As the *TCBC Labour Shortage* study does not assess the impact that the substitution of capital for labour will have on the demand for specific worker skills, the authors probed this issue in their interviews. Most company executives anticipate that, as they introduce more process automation, their workforces will require a higher level of skill, both in technical matters relating to process control and machine operation, and in supervisory matters, relating to optimization of the technology to ensure the quality, safety and productivity of the output. Thus, in the case of the food and beverage industry in Ontario, the demand for skilled workers might reasonably be expected to grow faster than the overall rate of industry growth, further exacerbating supply shortages. The broad implications of the emergence of demand for relatively more skilled positions, as a percentage of the total workforce, and positions requiring different skills than the workforce currently possesses, are identified in the *TCBC Labour Shortage* study:

As new occupations emerge and old ways of doing work change or disappear, skills play an increasingly pivotal role in the province's socio-economic success. For these reasons, Ontario requires more investment, public and private, in human capital strategies to enhance skills and knowledge. If investment in human capital is not maintained through training and learning initiatives, the skills and knowledge that support the economy will decline, leading to skills gaps that will limit economic growth. [p. 18]

In this context, The *TCBC Labour Shortage* study outlines mitigation strategies which government policy makers can use to alleviate the severity of the looming shortage. While many of these mitigation strategies are relevant to the food and beverage processing industry, they do not consider the specific needs of this sector.

With respect to immigrant workers, the *TCBC Labour Shortage* authors recognize that the flow of immigrants, on which Ontario depends for much its workforce growth, cannot be taken for granted indefinitely:

Immigration has become the main driver of population growth for many jurisdictions today. Immigrants are, on average, younger than our native-born people, and they tend to have more children because they come from cultures with higher fertility rates. However, in the coming years it will become increasingly difficult for Ontario (and Canada) to find sources of immigrants – as fertility rates in countries such as Brazil, Iran, Turkey and China are about to fall below replacement levels; their economies are growing which encourages potential emigrants to stay home; and other developed countries are increasingly competing with us to seek them out. [p. 23]

Thus, any strategy for addressing the needs for skilled workers for the food and beverage processing industry should not rely overmuch on immigrants and needs to also urgently address streaming students in the K-12 education system into food and beverage processing industry careers.

Not all users of the *TCBC Labour Shortage* report will agree with the projections it contains. Forecasting the demand for and supply of labour in any given market into the future is at best an art and not a science, since there are many variables that need to be estimated that impact on the projections. These variables include such estimates as the number, age and skill of immigrants, migration in and migration out of any given geographical area, indigenous population birth rates, and participation rates, especially of older workers. Regardless of whether one views the estimates as reasonable, or more optimistic or more pessimistic than need be, information obtained from direct interviews with food and beverage processing industry executives has confirmed the reality of labour shortages in this sector in Ontario.

2.2.2 *Ontario Food and Beverage Industry Workforce Update*

The Canadian Council on Learning (CCL) was contracted to review workforce data that was more current than the 2001 census and to update the trends noted in the *Workforce Ahead* study to the extent that data was available. At the time of preparing this report, the data from the 2006 census, in comparative detail to that analyzed for the *Workforce Ahead* study, had not been released by Statistics Canada. Thus, most of the update information which follows relates to the Ontario industrial economy as a whole.

2.2.2.A Productivity

Ontario's productivity in the manufacturing sector appears to have fallen relative to the rest of Canada: while Ontario's share of Canada's manufacturing employees increased by 1.6 percentage points and its share of manufacturing wages & salaries increased by .3 percentage points between 2001 and 2005, Ontario's share of annual shipments fell by 1.6 percentage points over the same period. This is also true, though to a lesser extent, in the food processing industry. Across the food manufacturing sector, Ontario's share of annual shipments increased by only .7

percentage points, while its share of wages & salaries and employees increased by 1.5 and 2.2 percentage points, respectively. The grain, oilseed and cereal sub-sector has seen the greatest decline in relative productivity, while the dairy and sugar & confectionary sub-sectors have seen a relative increase in productivity. (See Table 2.2.1)

The decline in productivity is of particular concern because it indicates that the anticipated substitution of capital for labour in the food and beverage processing sector is not occurring as rapidly as in other industrial sectors, placing the food and beverage industry at even greater risk as worker shortages occur. It is not possible to form a definitive conclusion from the data about the cause and effect relationship. The possibility must be allowed, however, that a cause of this productivity lag is correlated to the lack of supply of skilled technicians to operate the automation technology needed and therefore the deferral of such capital investment.

Table 2.2.1 Food and Beverage Manufacturing Activity for 2005

Food and Beverage Manufacturing Activity for Ontario and Canada – 2005									
NAIC Codes	Wages & Salaries			Number of Employees			Annual Shipments		
	Canada	Ontario	Ontario as % of Canada	Canada	Ontario	Ontario as % of Canada	Canada	Ontario	Ontario as % of Canada
	Billions of $s						Billions of $s		
31-33	82.3	42.2	51.3	1,743,064	817,312	46.9	589.8	299.5	50.8
311+3121	8.9	-	-	246,060	-	-	75.6	-	-
311	7.9	3.3	42.0	223,951	80,990	36.2	65.6	26.5	40.5
3111	0.4	0.2	40.3	8,641	2,836	32.8	4.9	1.6	32.8
3112	0.3	0.2	58.8	6,908	3,673	53.2	5.1	2.6	50.6
3113	0.6	0.4	67.6	13,051	8,049	61.7	4.2	2.6	62.7
3114	0.8	0.4	43.8	23,874	9,049	37.9	5.8	2.7	47.2
3115	0.9	0.3	35.0	21,096	7,342	34.8	12.0	4.7	39.0
3116	2.4	0.9	36.9	67,279	24,160	35.9	18.6	6.0	32.4
3117	0.5	0.0	3.8	29,342	368	1.3	3.5	0.1	2.6
3118	1.1	0.6	56.5	33,315	17,220	51.7	6.1	3.6	59.1
3119	0.8	0.3	42.6	20,445	8,293	40.6	5.4	2.6	48.6
3121	1.0	-	-	22,109	-	-	10.0	-	-

Source: Statistics Canada - Annual Survey of Manufactures and Logging; Monthly Survey of Manufacturing CCL analysis and calculations of data from Statistics Canada Census

2.2.2.B Food and Beverage Firm Size

Compared to the rest of Canada, Ontario is trending toward larger and larger food and beverage manufacturing firms. To the extent that large firm size is a proxy for multinational ownership, the increasing concentration of large firms has implications for Ontario's future skilled worker labour supply. Multinational firms are more mobile, in terms of where they will make investment decisions, and will invest in jurisdictions where skilled labour is relatively more available. Thus, having a skilled labour supply is essential to retaining the current investment levels of multi-national firms operating in Ontario's food and beverage processing sector. Multi-nationals also have ability to move workers among their global plants, to address specific skill shortages, and therefore may be less vulnerable to the looming labour shortage than firms that are indigenous to Ontario.

During the interviews conducted during this project and assessing the response to the meeting of October 3rd, 2007 with food industry executives, the authors have formed that conclusion that, while all firms have labour needs, the primary group of firms that are most acutely at risk from worker shortages are those in the midsize range. They lack the global image and resources of the large multinationals to draw workers but have attained a size where they need the specialization of skilled trades in their permanent workforce.

Table 2.2.2 Distribution of Firms by Employee Size In The 100 Worker And Up Category

Distribution of Firms by Employee Size Category by NAIC Sub-Sector for Ontario - June 2006

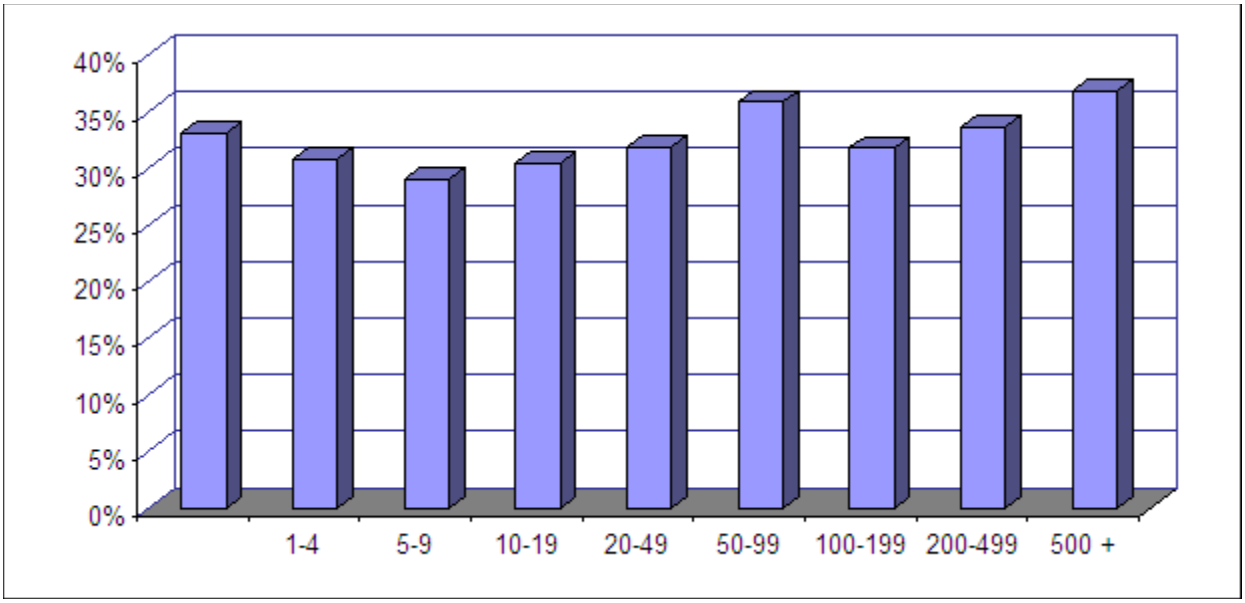
NAIC Code	NAIC Category	% Share of Total Firms	100-199		200-499		500+	
			Number	% Share of NAIC Sub-Sector	Number	% Share of NAIC Sub-Sector	Number	% Share of NAIC Sub-Sector
311+3121	All Food & Beverage Manufacturing	100	118	5.3	84	3.8	28	1.3
3111	Animal Food Manufacturing	7.2	6	3.8	2	1.3	0	0.0
3112	Grain and Oilseed Milling	3.0	9	13.4	4	6.0	2	3.0
3113	Sugar and Confectionery Product Manufacturing	5.1	5	4.5	8	7.1	2	1.8
3114	Fruit and Vegetable Preserving and Specialty Food Mfg.	7.5	12	7.2	7	4.2	3	1.8
3115	Dairy Product Manufacturing	7.2	10	6.3	11	6.9	0	0.0
3116	Meat Product Manufacturing	13.5	28	9.3	14	4.7	9	3.0
3117	Seafood Product Preparation and Packaging	2.0	1	2.2	0	0.0	0	0.0
3118	Bakeries and Tortilla Manufacturing	30.9	27	3.9	20	2.9	5	0.7
3119	Other Food Manufacturing	11.0	13	5.3	10	4.1	2	0.8
3121	Beverage Manufacturing	12.7	7	2.5	8	2.8	5	1.8

Source: Statistics Canada - Canadian Business Patterns (June 2006) - CCL analysis and calculations of data from Statistics Canada Census

This table shows that sectors 3118 (Bakeries and Tortilla Manufacturing) and 3116 (Meat Product Manufacturing), together account for 44.4% of all firms in the food and beverage processing industry in Ontario. The table also shows that there are over 200 firms in the mid-size range, between 100 and 499 employees, where the authors infer that the greatest need for the Blueprint project lies.

Chart 2.2.1 **Ontario's Percentage Share of Canada's Food and Beverage Manufacturing Firms**

Ontario's % Share of Food and Beverage Manufacturing Firms in Canada by Firm Size (Based on Number of Employees in Firm) - June, 2006



Source: Statistics Canada - Canadian Business Patterns (June 2006)
CCL analysis and calculations of data from Statistics Canada Census

2.2.2.C Average age of workers

Across all manufacturing industries in Ontario, the average age of workers is increasing. This is particularly true for male workers: between 2001 and 2006, the average age of male workers increased by 2.59 years, while for women there was a much more modest increase of .04 years. In contrast, the average age of workers decreased by .52 years in Ontario's Food Manufacturing industry and by 2.22 years in Ontario's Beverage Manufacturing industry. In both cases, the age decrease was largely driven by female workers.

Table 2.2.3 Average Age of Ontario Workers

Average Age of Ontario Workers

NAIC	Average Age		
	Male	Female	Both
11 – 91	36.8	38.4	37.6
311	39.4	40.8	40.0
3111	42.9	37.3	40.7
3112	42.7	38.5	40.7
3114	40.3	43.2	41.5
3115	41.8	40.2	41.3
3116	37.6	40.0	38.7
3117	X	X	X
3118	40.7	39.5	40.1
3119	38.4	43.3	40.1
3121	39.8	43.8	40.7

Source: Statistics Canada - Labour Force Survey 2006 - CCL analysis and calculations of data from Statistics Canada Census

While the decline in the average age of workers in the food and beverage manufacturing sector since 2001 indicates that younger workers are being hired, the aggregation of the data masks the reality that skilled workers are getting older. The largest proportions of workers aged 45 years or above are found within the mechanics (71.4%) (including construction millwrights and industrial mechanics – 69.3%). This occupation also saw the highest increase in the proportion of workers aged 45 years or more between 2001 and 2006 (21.1% for mechanics and 18.0% for construction millwrights and industrial mechanics in particular). Other sectors that saw large increases in their proportion of older workers include trades helpers, construction and transportation labourers and related occupations (12.1% increase), labourers in processing, manufacturing and utilities (11.0% increase), and bakers (10.6% increase).The authors hypothesize that the average age reduction was almost entirely due to younger workers taking unskilled entry level jobs, masking the fact that skilled workers are older, on average, than in 2001. This data indicates that the looming labour shortage for skilled trades in food and beverage manufacturing is coming closer in time and will be more acute when it comes, since there is not renewal occurring in many skilled classifications by hiring younger workers.

2.2.3 Summary

The most recent data confirms the findings of the *Workforce Ahead* study: real and serious shortages of skilled workers for the food and beverage manufacturing industry in Ontario lie ahead. These shortages are already beginning to affect certain firms in specific skilled trades and, given the average age of workers in this industrial sector and in these trades, they will continue to increase in severity.

The severity of the shortages may be mitigated if the manufacturing sector in Ontario generally goes into sharp decline over the next five years, as a result of the high value of the Canadian dollar and competition from low-wage countries like China, as workers may become available to work in food and beverage manufacturing from other industrial sectors that are down-sizing and shedding jobs. This relief, if it comes, will be temporary and only lead to a postponement of the full impact of the skilled worker shortage.

2.3 Assessment of Industry Commitment To Developing the Future Supply of Skilled Workers

There are different ways for industry to express its commitment to the Blueprint project.

At the baseline level, commitment involves firm engagement by providing input, opening up and sharing the company's own experience with the search for skilled workers and identifying those positions causing the greatest difficulty in hiring. A more sustained form of commitment involves agreeing to serve on an industry working group on an ongoing basis, committing the time necessary to assist in implementing the Blueprint and participate in curriculum development / customization.

The most tangible forms of commitment involve:

(a) *working with the college system to hire apprentices or other graduates and thereby assuring the demand to drive any enhanced program offerings*
Few firms have sufficiently sophisticated planning systems that they are willing to make commitments for workers with the kind of lead-time (two to three years) that would be required to assure that graduates will have jobs for which they were trained.

(b) *Stepping up to the plate with industry dollars for such things as state-of-the-art equipment for student training at the college site*
In discussions with the wine sector, industry executives pointed out that the success of sector-specific programming at Niagara College was related in part to financial support from individual firms. During our interviews, executives from the meat processing industry indicated a willingness to invest in training that would lead to qualified meat cutters through such means as donating the meat to be used for students to gain experience.

On – Line Survey
It is the opinion of the consultants that an understanding of the severity of the labour shortage by industry executives coupled with a willingness to commit to being part of the solution is essential. To ensure accurate and current information was available, a facilitated session with CEOs of industry was held and an on-line survey was disseminated. Several questions were posed. 1. Is your company having difficulty finding skilled trades and/or supervisory workers? Over 80% or 4 out of every 5 companies indicated they were having significant difficulty finding these employees. Refrigeration engineers, industrial millwrights, maintenance mechanics, electricians, plumbers and meat cutters were some of the specific trades in high demand. A second question asked, do you think that the food and beverage industry needs to do more to profile itself collectively as a viable employment opportunity to high school students? Ninety-eight percent of the respondents replied in the affirmative. A third question asked, if a community college program was developed for the food and beverage sector, would your company be willing to recruit or hire apprentices, co-op students or college graduates from these programs? 93% of the respondents indicated they would hire apprentices, 85% indicated they would hire co-op students and 90% indicated they would hire college graduates.
Without exception it is the opinion of the consultants that industry clearly substantiates the issues and is ready willing and able to work with government and academia to address this critical labour shortage.

2.3.1 Barriers to Industry Engagement For Workforce Development

2.3.1.A How Firm Size Impacts the Level of Engagement

There are certain food industry employers, generally those with strong global brands and multi-national operations that strive to be "employers of choice" and that experience little difficulty in attracting and retaining workers. These employers view their workforce as a proprietary advantage and they may be reluctant, therefore, to cooperate with other companies to whom they may have lost workers through "poaching" in the past. The consultants use the term "poaching" to describe the process by which a skilled worker is hired away by another employer, typically with the promise of better income and more responsibility. Some of these larger national or global employers have developed their own "academies" for worker training. Other multi-national firms are heavily engaged with the college system, with positions on curriculum development advisory committees. In the interviews and consultations, the consultants found that many multi-national consumer branded firms were difficult to engage on this topic. If the first reason why multinational firms may be difficult to engage is directly related to a deliberate policy decision to utilize their workforce strategies as a point of proprietary advantage, a second reason relates to the structure of multi-nationals themselves. Typically in Ontario, the branch plants where most of the workers are employed report into a manufacturing and operations centre in the US or Europe, and the Canadian head office has very little direct engagement with the workforce. As a result of this structural disconnect, the decisions related to workforce training matters are frequently made by executives outside Ontario. This distance makes it more difficult to gain the support of these firms for Ontario-specific initiatives.

Adding to this challenge is the fact that most large firms are publicly traded enterprises and are constantly striving to meet budget targets to increase the satisfaction of shareholders with their results. The rapid increase in the value of the Canadian dollar, over 18% in the past six months, was not foreseen by firms in their budget projections. Thus, their Canadian operations are under stress to "make the numbers" in their budget forecasts. At such a time of crisis as this, it is difficult to obtain the focus of executives on longer term strategic initiatives. The extent to which firms' results are impacted by the appreciation of the Canadian dollar will vary from firm to firm depending on what inputs they use and to what extent their Ontario plants are integrated in their North American supply chain with plants in the US but few firms have been completely insulated from the impact.

At the other end of the firm size continuum, there are nearly one thousand small employers in food and beverage manufacturing in Ontario, with four employees or less, typically owned and managed by an entrepreneur or entrepreneurial family. As the data cited in the previous section shows, the number of these firms operating in Ontario is increasing. These employers lack the sophistication in their management structure to actively engage in workforce development and have not reached a size where significant specialization of skilled positions has become necessary. Many of these firms, if they require an electrician, for example, would purchase that service from an electrical contractor when needed. While the needs of these firms are not specifically considered in this project, the project offers important benefits to them. Their capacity to grow will depend, in part, on their ability to attract skilled workers in future. Without a skills development initiative, many of these firms will fail to reach their full potential.

In between these two ends of the size spectrum, there are over 1,000 firms with more than four and less than one hundred workers. While it is not true of every firm in this category, many firms under 100 workers in size do not have a professional on staff solely dedicated to the HR function of the company. As a result, obtaining the participation of these firms in industry discussions is challenging as there is often no position in the company with accountability for skills development. Many of these firms have identified their greatest ongoing HR operational challenge as attracting and retaining unskilled workers for entry level positions, as they typically experience very high turnover rates among new hires. One of the ways of reducing turnover is by increasing the skills of supervisors and technicians so that they can be more effective in their worker engagement methods. Thus, even though this size category of firms will not be the primary focus of this project going forward, these firms stand to benefit from the initiative in enabling them to address one of their current root HR problems and to continue to grow.

The consultants' conclusion is that the primary target group of firms for this project are those that are headquartered here in Ontario and which have between 100 and 500 workers. As there are over 200 firms in this category, there is a strong portfolio of companies with which to work on carrying this project forward. In the interviews and industry sessions, it was generally firms in this size category that showed the greatest interest and expressed the greatest willingness to become involved. Firms under 100 workers will form the secondary target group.

2.3.1.B Why More Firms Have Not Used Apprenticeships

One of the common reasons given during our interviews as to why some firms have not been actively engaged with apprenticeships is the difficulty in retaining the tradesperson on completion of the program. Companies that have taken apprentices in the past and lost them on graduation have a negative view of the value of apprenticeships. There is a perception that apprentices will find the automotive sector more attractive and that it will offer better pay as well as better working conditions. In the future design of apprenticeships for food and beverage processing firms in Ontario, consideration needs to be given to working with employers on developing more incentives for the worker to stay with them on completion of the program and stopping the "brain drain" to other sectors.

As a result of the low take-up of apprentices by food and beverage manufacturing firms in Ontario, many skilled trades-people with "tickets" are hired from other sectors, such as automotive. A challenge in hiring talent from other sectors is the lack of familiarity with the unique needs of food processing in such areas as HACCP and food safety and the longer learning curve that results before such skilled workers find their stride in the food and beverage manufacturing industry.

The food processing operator apprenticeship program, first introduced in 2007, is too new to offer sufficient employer history to determine how widely it will be used. The consultants' perception from their interviews is that awareness of this newly introduced program is not high. Therefore, its inclusion in the industry marketing efforts will be important in increasing awareness, leading to active participation. Because this apprenticeship is food industry specific, it should reduce employers' concerns over loss of skilled trades people to other industrial sectors – the main risk being to other companies in the food and beverage processing sector.

2.3.1.C Finding the Instructors

Some firms expressed concern over finding qualified individuals to deliver an expanded college program for the food and beverage industry. In the wine sector, for example, two businesses lost talented individuals to the faculty of Niagara College, their being attracted by the more desirable hours of work. Firms expressed concern that they do not want to lose their best people to serving on the faculty of colleges while, at the same time, they recognize the desirability of instructors with broad industry experience.

In the *TCBC Labour Shortage* study, considerable emphasis is placed on the retention of mature workers and the need to recognize that the demands of their work may need to be less than for younger workers. Building on that potential source of workers, it would seem possible to develop a system to cycle retiring skilled personnel with an aptitude for instructing others into the college system to meet the need for qualified instructors with industry experience.

2.3.2 Changing the Culture Towards Collective Engagement

Firms in the food and beverage processing sector have not historically had much reason to cooperate on issues concerning workforce development. Their workforce may have been viewed by management as a source of competitive advantage and therefore the idea of working with other firms on common initiatives may have been viewed as competitively disadvantageous.

In order to work with the college system as an industry, rather than simply on a firm-specific basis, there needs to be a cultural shift in which the cooperative spirit is embraced rather than each firm seeking to "go it alone" to get the workers it requires. The "go it alone" philosophy leads to raiding other firms for skilled workers but does not, in the end, increase the total supply of workers available. Therefore, continuing with an independent approach in which each firm looks out for itself will be damaging for the food and beverage industry in Ontario. Many more firms will lose than win. The interest of food industry executives in working on the blueprint project, as noted earlier, indicates that this is the right time to embrace a new culture of collective engagement to find solutions to the industry's needs together.

2.3.3 Sector Urgency

Both the meat and baking sectors appear to be the most vulnerable segments of the food and beverage processing industry in the short term. Both sectors share a labour intensive production process in common and both require working under conditions that some workers would not find attractive. These two sectors tend to be among the most engaged in discussions of this project. It is logical, therefore, that any preliminary or pilot work might focus on the needs of these sectors.

It is also important to identify the common denominator of skills shortages across all sectors. The skilled trades such as industrial electrician, millwright and the newly designated food processing operator are among the skills that virtually all firms require. Most food and beverage processing operations require the application or withdrawal of energy in the production process and thus most operations have large natural gas-fired boilers and/or chilling systems to remove heat and enable refrigeration or freezing. Managing the application and withdrawal of energy requires technicians with recognized credentials under the Technical Standards & Safety Authority of Ontario. These technicians are absolutely vital to the operation as it is against regulations to operate plants in their absence. In their interviews, the consultants found that finding stationery engineers and refrigeration mechanics to enable multiple shift operations is an increasing concern for many firms in Ontario's food and beverage industry.

2.4 Summary of Industry Input

- Many food industry executives identify the need for raising the skill level of supervisors as their highest priority. Supervisors are often promoted from line jobs without any formal training in worker relations skills and are overwhelmed when conflicts arise. Some firms report that internal postings for supervisory positions do not attract any interest. Others report that some immigrant workers come from cultures where being in a supervisory role is not viewed favourably, for example, a female supervising male workers.

The Guelph Food Technology Centre, under contract to the Alliance of Ontario Food Processors, is developing a series of food industry specific supervisor training course modules for which there is a recognized need.

- Companies are seeking operators with "smarts" to do their own diagnosis and trouble-shooting to keep the line running at optimal performance. The set of skills needed to succeed in the food and beverage manufacturing environment is increasing and higher thresholds of educational attainment are being set for many positions.

- Many companies face a serious challenge in finding sufficient workers for unskilled positions and experience very high turnover rates for workers under one year's service. Many companies have turned to brokers to find workers to keep their Ontario plants operating. High turnover rates among new hires increase the demands placed on supervisors.

- Companies anticipate requiring more sophisticated technical skills as they invest in automation to reduce manual labour tasks and address their challenge in finding sufficient unskilled workers and the rising relative labour costs associated with unskilled workers. Companies rely on the equipment manufacturers to undertake the training on new technology and find that younger workers tend to have a high degree of computer literacy and catch on fast.

- Employers are experiencing shortages with certain skilled trades though their experience varies widely among sectors and regions of Ontario. One of the skills most cited as being in short supply are workers with knife skills for meat-cutting.

- Employers have varying degrees of engagement with the college system. While there are exceptions, many firms have little current involvement.

- Seven industry executives volunteered at the industry consultation meeting on October 3 to become personally involved with the blueprint project. This level of commitment is a strong sign of industry's willingness to support the project going forward.

Section 3

OVERCOMING THE DISCONNECT: WHY ONTARIO'S FOOD AND BEVERAGE PROCESSING SECTOR IS NOT ATTRACTING MORE YOUNG PEOPLE INTO THE SKILLED TRADES

Overcoming the Disconnect: Why Ontario's Food and Beverage Processing Sector Is Not Attracting More Young People into Skilled Trades

Because both the anecdotal evidence obtained during interviews with food and beverage processing industry executives and the data in *Workforce Ahead*, as updated and confirmed by more recent data provided by the *Canadian Council on Learning*, shows that the average age of workers holding skilled trades and technical positions in the food and beverage processing industry is growing older, it is necessary to conclude that this sector is not very successful in attracting younger workers into skilled positions.

To better understand this apparent 'disconnect' between the needs of the food and beverage processing sector and the career choices of Ontario young people graduating from our school system, the consultants undertook both original research with focus groups of young people and a literature search to understand what factors influence decisions on post-secondary choices for education and jobs.

This section of the Blueprint reports on the findings from that research. The purpose of understanding the way things are now is to develop strategies that will enable this sector to change young people's perceptions in a positive way to enable more streaming into skilled trades in Ontario's food and beverage processing sector in future years.

Another important pool of future workers is immigrants. In this section of the report, the authors also report on their focus group with new Canadians to understand how their participation in skilled trades in the food and beverage processing industry might be increased. As noted in the introduction, while the focus of this report has not included other pools of future workers, including aboriginal youth, the authors cite data to show that aboriginal youth has great potential for the sector that needs further consideration and development.

3.1 Influences on College Selection

As part of the *Colleges Ontario 2007 Environmental Scan* [6], applicants were asked to rate the impact of various influences on their choice of college. They were then asked to choose the single most important factor in each of the following categories: college characteristics, marketing/recruitment influences, and influence of individuals.

- *College characteristics: the one characteristic that had the most influence on college selection was that the college offered the desired program (32.5 per cent), followed by being close to home (15.1 per cent) and program reputation (11.3 per cent).*
- *Marketing / recruitment influences: when asked specifically to choose a single marketing and recruiting activity which influenced their college selection the most, the college website at 28 per cent scored the highest, followed by interactions with past or current students (25.9 percent) and on-campus visits (18.3 per cent)*
- *Overall influences: College characteristics are by far the most influential on college selection. The top ones in order of importance were: offered designed program, reputation of program, reputation of college and parents.*

The choice of a college depends on a combination of factors and varies depending on the applicant's background. It is, therefore, informative to analyze the degree to which various influences impacted college selection in relation to whether the applicant is applying directly from high school, had attended postsecondary education (PSE) previously, or has not gone directly from high school to PSE (delayed entry)

The influence of the college website, interactions with students, friends, and other family members was similar across the three groups. As expected, parents, guidance counselors, and high school teachers had a stronger influence on those applying directly from high school. However, college-related influences such as on-campus visits, college liaison presentations, emails and college representatives also had more influence on high school students than others, indicating an opportunity for colleges to broaden their recruitment focus. (table 3.1.1)

Table 3.1.2 demonstrated how critical a college's program offerings; the reputation of the college and its specific programs is in college selection. Those with previous PSE exposure indicated that program reputation, the quality of teachers/professors, and the length of program had more of an impact than for other applicants. Admission standards, a safe environment, lower tuition fees, university transfer agreements were all of greater influence for those applying directly from high school.

3.2 Concerns about College

The most important concern that applicants had about college was finding employment upon graduation (60 per cent were very concerned). Other concerns included knowing what future careers will be (55 per cent), ability to do well in college (54 per cent), and finances (50 per cent), and completing their programs (50 per cent). Females, applicants with lower family income, members of visible minorities, and immigrants had higher degrees of concern than others for most factors.

6. Colleges Ontario 2007 Environmental Scan: An Analysis of Issues Affecting Ontario. Pg 42 pg 43

Table 3.1.1
Individuals of activities having "very much influence on college selection"

	Direct from HS	"Delayed" Entry	Previous PSE
Parents	52%	40%	39%
College Website	36%	37%	36%
Interactions with students	34%	33%	29%
On-campus	34%	27%	25%
Friends	26%	28%	23%
Other family members	23%	23%	20%
Guidance counselor	24%	15%	11%
High School teacher	19%	13%	12%
College Liaison presentation	21%	11%	8%
College email contact	17%	12%	11%
College representative	17%	12%	9%

Source College Applicant Survey, 2006, Acumen Research Group Inc
Canadian Millennium Scholarship Foundation [7]

Table 3.1.2
College characteristics having "very much influence on college selection"

	Direct from HS	"Delayed" Entry	Previous PSE
Offer desired program	83%	82%	84%
Program reputation	57%	55%	62%
College reputation	52%	50%	53%
Close to home	45%	44%	41%
Quality teachers/profs	37%	36%	41%
Length of program	34%	33%	41%
Admission standards	35%	28%	31%
Safe environment	36%	30%	27%
Lower tuition fees	35%	30%	28%
Paid co-op program	30%	27%	26%
University transfer agreement	33%	25%	21%

Source College Applicant Survey, 2006, Acumen Research Group Inc
Canadian Millennium Scholarship Foundation[7]

7. Colleges Ontario 2007 Environmental Scan: An analysis of trends and issues affecting Ontario pg 43

3.1 Focus Group: Students / Teachers / Administrators

Process:

Focus group interviews were held with students, teachers, consultants and administrators in six secondary schools across the province. Grade eleven and twelve, as well as guidance instructors and in-school administrators were interviewed in a mix of rural and urban settings as well as a continuing education centre. A focus group session was also held in a college in Southwestern Ontario.

Question:

In a focus group setting the following areas were explored:

- Knowledge of the food processing sector;
- Current strategies used to promote this sector with students;
- Factors that influence / attract students to a potential job / career;
- Obstacles that prevent students from looking at food processing as a career;
- Strategies / activities the industry could do to change the students' perception of the food processing sector;
- Students perception of what elements are essential in a course designed specifically for this sector;
- Key messages that would assist the industry in attracting students to this sector;
- Best practices related to getting these messages in front of students;
- Extent to which parents influence a student's career path.

Summary of findings:

Most staff and students have a limited understanding of the food processing sector. Much of their perception is negative: they identify slaughter-houses, and boring, repetitive factory work as characteristics of this sector.

Students and staff indicated that traditionally they are exposed to potential career/work place opportunities through job fairs, co-op placements, career days, open guidance credits and other students. They further suggested that representatives from the food processing sector have not been visible at many of the above referenced venues; in fact, they claimed they were completely unaware of the sector's mandate and job opportunities.

When we asked students what factors influenced or attracted them to a particular career, they identified (1) wages (2) sustainable jobs (3) working conditions and (4) promotional opportunities. Students and staff further noted that a negative impression of the industry, coupled with their perception that it is repetitive and boring work or a "dead end job" with a lot of shift work, are obstacles preventing students from looking at this industry.

The consultants asked students and staff what it would take to change their perceptions of the industry and how we might best disseminate this information. They clearly stated that electronic messaging was the key. Dan Tapscott in his book Wikinomics – How mass collaboration changes everything, talks about how young adults look for work, learn, read newspapers, study, socialize, listen to music and play on-line. He further states they are demanding customized and interactive applications from their schools, employers, providers of media etc. Pod casting, web sites, virtual tours, DVDs, streaming, advertising in "Face book" and promotional information through computer programs such as Career Cruising are practices that would help to profile the industry. Students also indicated that industry spokespersons visiting schools, career days and regional guidance meetings across the province would be the best way to profile this sector amongst staff and students.

The consultants also asked students what key messages, if developed into a theme or marketing plan would resonate with them. They suggested promoting the concept of sustainable jobs, good wages, clean environments, flexible hours and investing in our country by helping to feed our people.

Students indicated that parents play a key role in influencing their career paths. To that end, they thought a "social message" would be helpful to them in convincing parents that careers, in the trades and in the food processing sector, are in society's best interest. They also indicated that an "up beat commercial", plus the production and dissemination of DVDs or streaming of information in a variety of languages would be helpful.

Overall they definitely saw a lot of potential opportunities in this sector and that if profiled correctly, their perceptions could be favourably modified to embrace a positive image of this industry.

Analysis:

High school and college-aged students are influenced by family, peers and advertising/awareness campaigns in choosing an area of study and/or career path. On-line research plays a large role in their understanding of available options. High school students and college-aged students are very computer savvy and use the internet regularly to research, browse media and interact with one another. Guidance counselors were of little influence, being unaware of sector opportunities.

High school and college-aged students perceive the food processing sector to have unpleasant working conditions with boring and repetitive work and little opportunity for advancement. This opinion is based on insufficient information / knowledge and a lack of exposure to the industry.

High school and college-aged students consider co-operative educational opportunities, job security, substantial wages/earning potential, working conditions, and opportunities for advancement as influential factors when considering career paths. Following are some of the themes and key messages the industry should consider in profiling the sector:

3.4 Emerging Themes:

Brand Identity – consideration should be given to creating an appealing, innovative and exciting brand identity for the food processing sector.

Enhancing Public Awareness – industry needs to consider immediately developing and disseminating information to secondary, college and university students in an exciting and innovative electronic format

Establishing a Positive Reputation – begin to look for ways to ensure the industry is perceived as a " Career of Choice"

Attracting and Retaining Workers – consider identifying and participating in a variety of opportunities to attract and retain skilled workers to this sector

Customizing Curriculum – consideration needs to be given to developing curriculum unique to the food processing sector

Building a "Centre of Excellence"- consideration should be given to the need for a centre of excellence that can be profiled by the industry and be an institution where sector specific curriculum is taught

Key Messages:

The development of key messages is an essential prerequisite to a marketing plan. Listed below are some of the suggested key messages that could form the theme of a marketing plan.

1. Grow with us
2. Help nourish the world
3. Make a smart choice – choose a career in food processing
4. Food for thought
5. From field to table
6. Want a career you can really sink your teeth into? With on the job training in a safe, clean environment, it's like a smorgasbord of career options – dig in!
7. The food processing industry supports Ontario, it generates over $32 billion dollars a year – this is no small potatoes
8. In the food processing industry, I do something different everyday: I love the challenge and feel good knowing my work helps nourish my fellow-citizens

Conclusion:

Students do not have the food processing industry on their radar screen. It is the consultants' opinion that we need to begin to profile the industry NOW to change and build their perceptions!

3.5 Immigrant Status – Provincial Perspective

Eighteen percent of surveyed college applicants in 2006 were not born in Canada, and a further 13 percent were first-generation Canadians. This mirrors the 2001 census in which 18 percent of 15 to 24 year old Ontarians were not born in Canada.

- 49% percent came to Canada in the past five years (over 8% of total applicant pool).
- Immigrant applicants were more likely than Canadian born applicants to have a university degree (14 % vs. 8%), have dependent children (18% vs. 6% for non-immigrants), be older (17% are over 30 years of age vs. 4% for non-immigrants) and report lower family incomes (51% report incomes under $50,000 vs. 30% for non-immigrants) and are less likely to have saved for PSE (61% had no money saved for college compared to 42% of non-immigrants).
- 48 % of immigrants applying to college consider themselves visible minorities.
- Reasons for applying are very different. Immigrants are more likely to cite wanting to upgrade skills (13% vs. 9%) and prepare for university (9% vs. 6%) as reasons for going to college and less likely to cite future occupation (71% compared to 60%).

In addition to data obtained from the *College Applicant Survey*, the Ontario *College Application Services (OCAS)* [8] also collects data on the "status in Canada" of applicants and registrants.

- In the fall semester, 2005, there were 12,817 applicants and 6,946 first year registrants in Ontario Colleges who had either "permanent resident landed" or "refugee" status, totaling 8.6% of college registrants.
- Of this group, 31% of registrants were 30 years of age and older and 58% reported a mother tongue that was neither French nor English.

"Over 80,000 internationally trained immigrants (ITIs) come to Ontario each year with post secondary education and other training. There are significant barriers that limit ITIs ability to enter the workforce at a level appropriate to their training and education and they are becoming vocal about their concerns. Key among these barriers is the following: the fact that internationally trained immigrants need their training need from their home country to be recognized against Ontario standards. They often have language proficiency gaps and many need to fill training gaps to work in the Canadian environment. As the province's need for highly skilled workers increases, this challenge must be addressed if the economy is to remain competitive. Ontario also has a lack of comprehensive, accessible information and advice on how to access and navigate the system and find available service and supports coupled with credible, timely evaluation of international academic credentials. These barriers must be overcome if new Canadians expect to participate in re-training opportunities. Consistent tools to assess immigrant's reading, writing, speaking and listening skills often hamper the ability to provide appropriate training to increase proficiency where needed. According to Colleges Ontario bridging programs will be required to provide specific training to fill gaps in knowledge, skills and Canadian work experience as well as job placement opportunities, mentoring programs and transition-to workplace supports to familiarize ITIs with Canadian workplace culture and expectations. The consultants agree that Ontario's colleges are well positioned to lead changes that will eliminate these barriers. Colleges have substantial experience in providing outreach, academic support and student services to address the needs of specific groups and colleges also have the staff resources to develop and deliver a wide range of academic, evaluation, advisory and outreach services."[9]

8. Colleges Ontario 2007 Environmental Scan: An analysis of trends and issues affecting Ontario Pg 15
9. From *Removing barriers for foreign trained individuals to contribute to Ontario's economy*: A presentation by Colleges Ontario on behalf of Colleges Integrating Immigrants to Employment (CIITE)

3.6 Focus Group: New Canadians

Process:

Focus group interviews were held with settlement / placement workers and community leaders, as well as a number of new Canadians from a variety of immigrant groups

Question:

In a focus group setting the following areas were explored:

- knowledge of the food processing sector;
- interest in career opportunities related to this sector;
- interest in re-training;
- program requirements;
- unique needs.

Summary of Findings:

The interaction with these groups was both interesting and supportive. Following is a summary of the comments that emerged from these discussions.

- They are generally interested in finding careers more commensurate with their qualifications and experiences;
- They are particularly interested in a sector where there are sustainable jobs;
- They would be quite interested in receiving re-training in-service particularly if a "short course" (modules) could be developed to reflect their previous education and if the course was customized specific to the food sector;
- They would hope that any course would also have a complementary ESL component where they would practice their "English" on the job using phrases and terminology that would be required in any given position;
- They indicated that traditionally Canadian supervisory positions have inherent expectations/protocols that are different from their initial training. Hence, they hoped this could be addressed in any customized supervisory course;
- They strongly advocated for a course with a significant paid co-operative education component as most individuals have to pay living expenses while they are being certified;
- They also expressed a need for the courses and job placement to be in close proximity to one another.

Analysis:

New Canadians could play a vital role in addressing the shortage of skilled labour in the food processing sector, if authentic short courses can be developed, commensurate with their ESL needs, in a location that is in close proximity to the work locale. The consultants believe we can gain the full potential of immigrant workers by validating their skill level obtained in their home country and enhancing it in Canada to enable them to be employed in a meaningful work experience.

Conclusion:

New Canadians have significant potential related to addressing the labour shortage when provided with appropriate and authentic learning opportunities.

3.7 Aboriginal Status – Provincial Perspective

While specific focus groups with aboriginal students were not conducted, it was the opinion of the consultants that the data in the *Colleges Ontario 2007 Environmental Scan: An analysis of trends and issues affecting Ontario*, was significant, particularly the reference that suggested the aboriginal population is more likely to have a trade or college certificate.

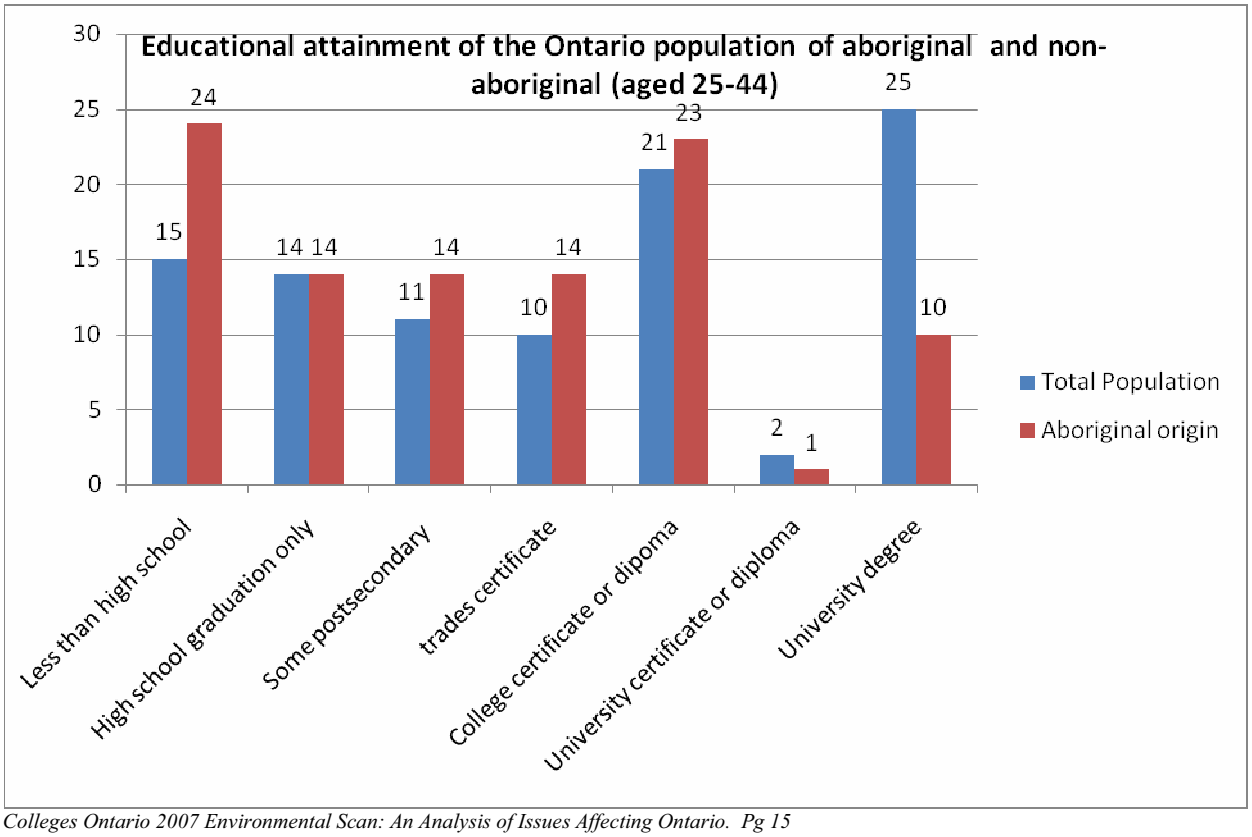
"Both at a provincial and national level, aboriginal students are more likely to drop out of high school, and far less likely to attend university than the non-aboriginal population. However, rates of college attendance and attainment are similar or higher that the population of non-aboriginal origin.

- The 2001 census showed that 24% of the aboriginal population aged 25 to 44 had not completed high school, compared to the population average of 15%. The aboriginal population is more likely to have a trade or college certificate.
- Data from the 2006 Ontario College Applicant Survey and the 2004 Ontario University Applicant Survey shows that the proportion of aboriginal college applicants with aboriginal origin is higher than the Ontario population, and far higher than the proportion applying to university. The 2001 census showed that 2.4 % of the Ontario population 15 and over self-identified as aboriginal and 3.4% of the population 15 to 24 years of age.
- On a national basis, 9% of surveyed Canadian College students self-identified as aboriginal compared with just 3% of surveyed undergraduate university students." [10]

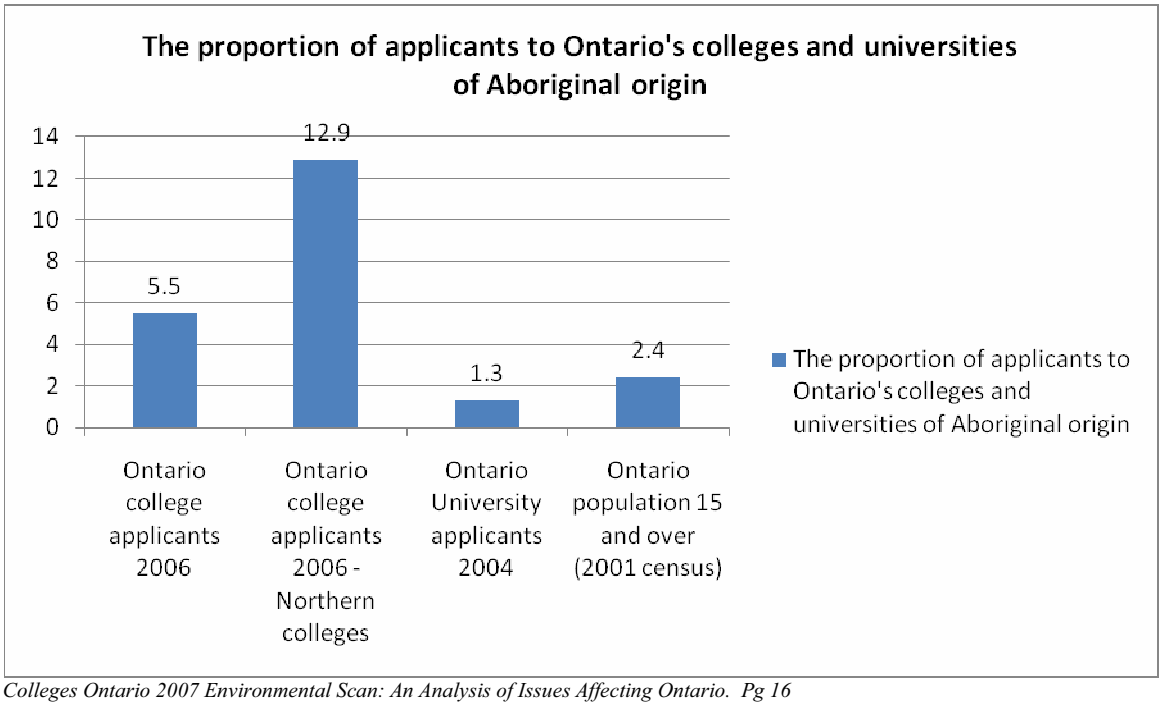
3.8 Analysis

Given the above referenced statistics it is the opinion of the consultants that consultation in the form of focus groups / interviews be held with aboriginal representatives to determine if First Nations individuals have an interest in pursuing a career in this sector and how the industry might best meet the unique needs of aboriginal students.

10. Colleges Ontario 2007 Environmental Scan: An analysis of trends and issues affecting Ontario. Pg 16



Colleges Ontario 2007 Environmental Scan: An Analysis of Issues Affecting Ontario. Pg 15



Colleges Ontario 2007 Environmental Scan: An Analysis of Issues Affecting Ontario. Pg 16

Section 4

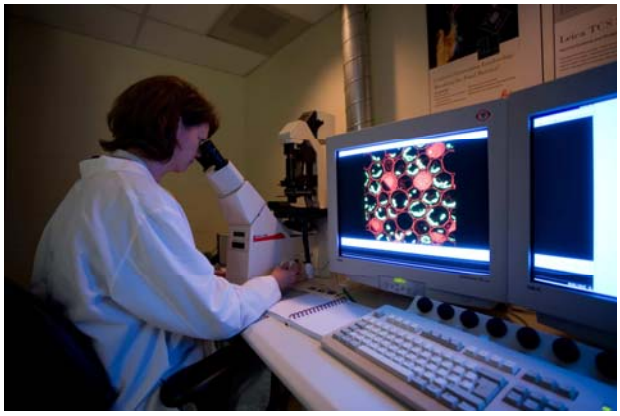
THE ROLE OF CURRICULUM

The Role of Curriculum

In order to attract more students into the skilled trade positions that will be needed by the food and beverage processing sector, it is important to understand the role of curriculum and how it can be developed to best meet the needs of employers and, at the same time, attract interest from students.

One major issue is determining how sector-specific programming needs to be. For example, is an apprenticeship program for a millwright sufficient? Does it require specialization for an apprentice to best develop in the food processing sector and, if so, why and in what areas? Is that specialization needed throughout all years of the apprenticeship program or could it be reserved for specialization in the last year?

To probe these questions, the consultants met with a number of executives, both in senior administration at colleges and in companies. The results of those discussions, coupled with a review of relevant course offerings for the food and beverage processing industry, are the subject of this chapter.



4.1 Program

Process

Prior to considering appropriate programs that could be delivered and/or customized at the college level, several meetings were held with six College Presidents and several Vice- Presidents in areas such as Business, Health Services, Career and Academic Success, Applied Research and External Relations. Meetings with the following college Presidents and Vice-presidents were held: Cambrian, Conestoga, Fanshawe, Loyalist, Mohawk and Niagara.

*See **Appendix 1.** for a brief overview of these six colleges*

Without exception each of these meetings was highly successful. Staff were accommodating, engaging, flexible and highly supportive of the need for an Institute of Food Processing Technology. Each college confirmed the need for additional / customized programs unique to food processing and validated the shortage of skilled workers in this sector.

4.2 Customization

The consultants believe there is a need to continue to work with colleges to design and / or customize programs that:

- are based on traditional proven courses currently being offered;
- are recognized by the Ontario Association of Certificate Engineering Technicians and Technologists;
- can be readily customized to meet the unique needs of the food processing sector;
- are flexible in terms of time (modular approach).

4.3 Educational Programming

Possible answer to why the food processing industry is unique in its training needs: What makes the food and beverage processing sector sufficiently unique that a skilled tradesperson, such as a millwright, would benefit from curriculum specifically designed and delivered with food and beverage processing as the end result rather than a position in any industrial sector?

The food and beverage industry has unique requirements because the products are consumed by members of society of every age and can profoundly affect their health and well-being. As a result, there are many regulations in respect of food safety that apply in food and beverage processing operations that are unique to this sector. The Canadian Food Inspection Agency (CFIA) is the main federal regulatory body with jurisdiction over the operation of food and beverage processing plants. For Ontario to be positioned as a leading global player, it is important that its food safety track record and training be outstanding, to give domestic and international buyers the highest assurance of quality

and safety. Increasingly, many food and beverage processing firms are also subject to audit by third party firms, such as the American Institute of Baking (AIB), arranged by their customers, to give their customers satisfaction that HAACP principles are being followed throughout the process. One of the factors that such third party audit firms consider is the skill and qualifications of the workforce. Having a millwright that has no background in HACCP and the unique risks to which a food and beverage processing plant is subject will not be acceptable to the auditor and, hence, to the customer purchasing products packed in that facility. In the end, having a workforce that cannot meet increasingly demanding standards of the marketplace will be a barrier to market access. The best way of ensuring that the entire workforce embraces the culture of HACCP, in the context of an outstanding commitment to food safety, is to have that training delivered as a core part of the apprenticeship or internship and attaining a passing grade, when formally examined in such subject material, as a necessary condition for completing the program.

The introduction of new technology can profoundly change the food safety risks to which a food and beverage processing plant may be exposed, as a result of such things as new composite packaging materials and new less energy-intensive processes to provide sterility. Training in food safety risk analysis and prevention must increasingly form an essential core of the curriculum for any technical position to be employed in a food processing plant.

Currently the consultants are working with several colleges related to customizing curriculum and are currently examining a cluster of programs via industry advisory meetings, to determine the extent to which they could and should be customized to the meet the unique needs of the sector. (a sample of those programs are listed on the next several pages). Industry representatives within the food processing sector are working collaboratively with various Vice-Presidents at the college level to ensure the curriculum is unique and relevant to the food processing industry.

A cluster of programs could be created to prepare students at several levels to work successfully in the mechanical aspects of the Food Processing Industry. While these programs would be based on the MTCU program standards for Manufacturing at the 3 levels (Techniques, Technician, and Technologist), with feedback and advice from industry experts the program outcomes could be tailored to the Food Processing industry. The programs could be created in such a way as to be sequential, Techniques would be year one of Technician, Technician would be years one & two of Technologist. This would create enhanced efficiencies for program delivery, and a system that students could 'ladder' through to the appropriate level.

4.4 Options – Skilled Workers

Option A

Type (Example)	Industrial Millwrights – Food Processing Certificate – Techniques
Length (Example)	1 year – 30 week module – (Sept. – Apr.)
Location	Conestoga
Target Audience	Grade 12 graduate students, Existing first year College/University Students, Adult Education Centres, World of Work

Option B

Type (Example)	Food Processing – Technician Diploma – Technician
Length (Example)	2 year – Diploma
Location	Conestoga
Target Audience	Grade 12 graduate students , Existing first year College/University Students, Adult Education Centres, World of Work

Option C

Type (Example)	Food Processing – Technology Diploma – Technology
Length (Example)	3 year Diploma
Location	Conestoga
Target Audience	Grade 12 graduate students , Existing first year College/University Students, Adult Education Centres/,World of Work

Option D

Type (Example)	Basic Machine Operator Base Certificate
Length (Example)	15 week module
Location	Conestoga
Target Audience	New Canadians, Grade 12 graduates, Adult Education Centres

*See **Appendix 2** for learning outcomes related to the above referenced options*
*See **Appendix 3** for additional sample program offerings in the skilled trades*

4.5 Ontario Apprenticeship System

Apprenticeship is controlled by two different acts, The Apprenticeship and Certification Act (1998) and the Trades Qualification and Apprenticeship Act; the latter for construction trades such as plumber, electrician and construction millwright and the former for all other trades including maintenance mechanic millwright, process operator – food manufacturing and industrial electrician. The terminology used under each act is somewhat different but mean essentially the same things. Trades that require a certificate to work are called *restricted* under ACA and *compulsory* under TQAA. Also TQAA trades have Provincial Advisory Committees, employers and apprenticeship contracts and generally require a minimum of grade 10 for apprentices while ACA trades have Industry Committees, sponsors and apprenticeship training agreements and require a minimum of grade 12 for apprentices. Both set the minimum age of apprentices at sixteen years.

The TQAA trades have specific regulatory requirements for apprentice wages, ratio of trainers to apprentices, regular hours of work and overtime and the training on the job requires a minimum number of hours while the ACA trades have only a recommended number of hours and training on the job requires sign off of specific competencies.

The apprentices under TQAA finish their apprenticeship by successfully completing in school training and completing all the on-the-job hours required. When they pass the final examination, they will receive both a Certificate of Apprenticeship and a Certificate of Qualification. The apprentices under ACA complete apprenticeship by successfully completing in school training and demonstrating all the trade competencies on-the-job. They then receive a Certificate of Apprenticeship. If there is a final examination for the trade and they pass it, they will receive their Certificate of Qualification. Some final examinations are standardized across the country through a process managed by HRSDC to encourage interprovincial labour mobility and successful candidates on these examinations receive a Red Seal endorsement on the provincial Certificate of Qualification.

In terms of industrial apprentice training, the system is administered by the provincial government. Employees and workers develop trade content through industry committees while on-the-job learning is supplemented by a college or private in-school training. The training component takes from two to five years and constitutes eighty to ninety percent of the training while the in-school component is up to twenty four weeks, is delivered in three phases and constitutes ten to twenty percent of the training.

Twenty-five colleges of Applied Arts and Technology and some private schools are designated as training schools and are located in all areas of the province. Staff is comprised of experienced trades people and they train approximately 35,000 apprentices per year in 45 different trades. All in school training includes:

- Safety training – introductory personal safety, worksite hazards
- Trade tools – hand tools, power tools, equipment
- General theory in blueprint reading and work documents
- Skills training
- Trade regulations

Sponsor incentives are provided in the form of apprenticeship training tax credits (ATTC). It applies to all motive power, construction, industrial and some service sector trades and there is a refundable tax credit. This is a $95 million refundable tax credit annually in anticipated

employer up-take. In terms of sponsor incentives, there are also tax credit allowable amounts. The maximum tax credit amount per apprentice is $5,000 per year, and $15,000 over the first 36 months of an apprenticeship. If total salaries and wages are paid in the previous taxation year these are: $600,000 or more, the rate of the tax credit is 25% of eligible expenditures; $400,000 or less, the rate is 30% and between $400,000 and $600,000 the percentage is prorated. Tax credit is available to businesses that have permanent establishments, are subject to Ontario income tax and incur eligible expenditures in respect of qualifying apprentices. Eligible expenditures are salaries and wages including taxable benefits. Expenditures must have been paid after May 18, 2004 and before January 1, 2011 for services provided by apprentices during the first 36 months of their training.

See **Appendix 4, 5, 6, & 7** *for additional information about Apprenticeship and Co-op programs*

4.6 Supervisors Program Description

4.6.1 Manufacturing Leadership Certificate Program (MLCP)

The Manufacturing Leadership Certificate Program is an introductory leadership skills development program designed for employees working within the manufacturing sector. MLCP was initially developed in response to the challenging economic conditions and technological changes in cooperation with the Canadian Manufacturers & Exporters Association (CME), manufacturers located in Ontario's Golden Horseshoe.

Over its 14-year history the MLCP has experienced tremendous growth; growing from an initial base of 64 registrations in 1993, to today's 11,800 registrations and 3,048 participants. It has also established itself as a niche product and developed a positive reputation in the marketplace.

The Manufacturing Leadership Certificate Program (MLCP) is designed *by* manufacturers *for* manufacturers, in collaboration with the Canadian Manufacturers and Exporters (CME). This program was designed to help manufacturers meet the challenge of competing globally while adapting to rapidly changing technology. The MLCP's success is based on flexible scheduling and delivery of courses using continuing input from the manufacturing sector.

See ***Appendix 8*** *for a sample course summary as developed by five colleges*
See ***Appendix 9*** *for a detailed explanation of the 3 A's of Leadership*
See ***Appendix 10*** *for an Introduction to Maintenance Management*

4.6.2 Loyalist College of Applied Arts and Technology

Loyalist College in Belleville has also developed a curriculum that will result in a Diploma in Food Safety that offers a three-year curriculum that integrates scientific principles, applied skills and management practices in a framework that prepares graduates for a career in food safety along the path from farm gate to consumer. The combination of in innovative curriculum, access to exceptional resources, and work placement with an industry partner will provide graduates with the expertise to perform food safety services in private and public sector organizations and to meet new challenges for ensuring a safe food supply in the face of changing global trends in food practices.

See ***Appendix 11*** *for a detailed program description*

The Guelph Food Technology Centre was contracted by the Alliance of Ontario Food Processors in 2006 to develop a curriculum for training supervisors in Ontario's food processing industry. To differentiate the training modules under development from other industry training for supervisors available, a number of case studies on best practices in Ontario's food processing industry were developed as learning tools.

Enhanced training for supervisors was recognized as an important initiative to reduce the high turnover rates among unskilled workers in the early months of their probation. Supervisors need better skills in assessing workers prior to hire and in motivating and managing workers after hire. Improvement in recruitment practices and enhanced retention rates are directly correlated to the level of skills of supervisors.

For further information see ***Appendix 12***

4.7 Facilities

The colleges that were visited certainly indicated that they had the space initially to incorporate additional program sections customized to meet the needs of the food processing sectors. This enables the sector to begin working collaboratively with colleges to customize programs while a decision is being determined related to a bricks and mortar institute of food technology. Obviously, space requirements are dependent on the number of students who express an interest in registering for programs for this sector and these numbers are dependent upon how quickly we can develop and implement a comprehension marketing program. The industry has developed a communications plan (see ***Appendix 15***) and intends to use this as a catalyst for the development of a detailed marketing plan. It is anticipated that the Alliance will begin to profile this sector in an organized and comprehensive manner during 2008. Obviously, if governmental support is obtained for a dedicated Institute of Technology then a new facility would be constructed on land currently owned by the college.

4.8 Equipment

Regarding equipment, there is no question that additional equipment will be required to correspond with sector specific curriculum. However, existing equipment will enable the colleges to initially support this industry initiative until more students become aware of the sector as attracts more students and an institute of food technology is built to address the long term needs. It is also anticipated that business and industry would be interested in becoming a strategic partner with the college sector regarding securing equipment so that students will learn and practice on state of the art equipment. Siemens Canada Limited for example has offered to make a "significant long term investment with a college that would take the form of *in-kind* donations including process automation equipment used in the sector as well as software refreshed over an initial five years of operation of the equipment training of graduate students and professors in the use of the equipment and assistance in the development of course curriculum." (*see* ***Appendix 13***)

The consultants believe that both additional independent and private companies will step forward and signify their intention to financially support any institute constructed in their local community. This investment by industry will ensure that today's students will be trained on tomorrow's equipment.

4.9 Corporate Training

Corporate training is an integral part of any joint college / industry program venture, particularly as it relates to current employees. Employees at all levels throughout the food processing sector have clearly stated that they have ongoing needs and there is an expectation that these requirements will be dealt with through ongoing corporate training programs. For example, individuals within the meat sector stated that a course in "knife skills" is essential and if implemented would significantly enhance production and reduce work related injuries. Supervisors told the consultants in a variety of settings that training in "soft skills" (conflict resolution, dealing with difficult people, safety issues) were areas that needed immediate and ongoing assistance.

While there is no question that there are challenges related to providing the training while keeping the lines up and running, it is the opinion of the consultants that support from both government and industry is essential if these training needs are to be addressed.

In some of the plants visited in related sectors the consultants observed that a combination of facilitated instruction in a college environment, training sessions within the plants and on-line sessions were the most appropriate ways to deliver these programs. Listed below are examples from three colleges where corporate training is an integral part of their program and where the clients are benefiting from the experience particularly where customization has been completed

Conestoga is a major player in corporate training. Some of their major clients are Toyota and Linamar. They train approximately 5,000 employees annually. This training is customized to meet employer needs. They have the capability to do training needs assessments and skills testing, including numeracy and literacy. Training can be on-line, on-site at the college or some combination of the above. Employer satisfaction surveys conducted through a professional third party are more than 90%. The Assistant General Manager, Human Resources and HR Specialist of Toyota Canada, were highly complimentary of Conestoga and used words like engaging, flexible, supportive and responsive to describe their ongoing positive relationship with them. They indicated that the staffs regularly customized and implemented courses for both skilled workers and supervisors unique to the needs of Toyota and that any concerns or issues were expeditiously dealt with in an exemplary manner.

The Vice-President of Human Resources of Linamar indicated that he has been working collaboratively with the President and his staff at Conestoga for the past sixteen years. He views them as innovative and responsive. He indicated that courses like the Machine Operator Program and the Project Management Courses for Supervisors were developed collaboratively and delivered by Conestoga staff at Linamar in a timely and exemplary manner. Other featured corporate clients who work with Conestoga are as follows: Schneider Foods, Coats Bell, Sutherland – Schultz Inc., Guelph Chamber of Commerce, Gerdau Courtice Steel Inc., Barrday Advanced Textile Solutions, Johnsonite Toyota, Crompton Co., City of Kitchener, Linamar, Research in Motion – RIM, J2X Technologies, and Javelin Technologies. In the consultants' opinion a corporate learning program could be easily developed with Conestoga to meet the specific needs of the food processing industry.

The process operator – food manufacturing apprenticeship program is currently being delivered in Belleville by Loyalist College in partnership with The Guelph Food Technology Centre for the very first time in Ontario. This course has several modules including Computer Skills, Electrical and Instrumentation, Safety Management, Mechanical skills, Continuous Quality Improvement and Environmental Concerns. Module one entitled Food Safety and Security (an 80 hour module) has been finalized and will be the standard core curriculum for the food industry. Kelloggs' new plant in Belleville signed on as an apprenticeship group. The Loyalist Training and Development Centre assisted Kelloggs by conducting pre-employment testing all of their applicants and collaborating and co-designing the Food Safety Module to ensure it was unique to the needs of their employees and to the sector.
*(See **Appendix 14** for program description of module 1)*

Mohawk College (Brantford Campus) is also working collaboratively with several food processing companies such as Ferrero Group, Maidstone Bakeries and Piller Sausages & Delicatessens Ltd. Mohawk College is looking to expand these programs as part of their revitalization program.

It is the opinion of the consultants that exemplary corporate training programs for current employees at all levels is one of the keys to retaining existing employees.

Section 5

BENEFITS OF EARLY-STAGE TARGETING

The Benefits of Early-Stage Targeting

Experience gained from other sectors has shown that reaching students while still in elementary or high school is important, to get careers in the food and beverage processing sector on their radar screen, and to get them engaged in hands-on work experience. The consultants believe that the Specialist High Skills Major, a recently introduced high school program option, would be an excellent tool for the food and beverage processing sector to use.

In this section, the consultants provide an overview of the history and design of this program to support the recommendation made later in the report for the food and beverage processing sector industry to give priority to become engaged with this initiative.

5.1 Specialist High Skills Major

Addressing the labour shortage in the food processing sector, in part, relates to connections with students early in their secondary school experience. [1] The Ministry of Education's Student Success Strategy is based on the belief that every student should be provided with the knowledge, skills and attitudes to graduate and to achieve a good outcome from his or her education. With the government's commitment to "reach every student", more young people will have the opportunity to participate in learning opportunities that build on their interests and strengths, prepare them for postsecondary success, and enable them to contribute to the economic health of the province.

The Specialist High Skills Major (SHSM) is one component of phase III of the Student Success Strategy, announced in December 2005 by the Ministry of Education. Other components of phase III include the introduction of legislation requiring all students to keep learning to age 18 or until graduation, the expansion of cooperative education programs, and ministry-approved dual-credit programs.

A student's secondary school program may include a *specialized program* – that is, a combination of 6 or more courses and experiences that relate to a subject area of special interest or to a particular destination. Specialized programs assist students in meeting the requirements for their OSSD and provide a smooth transition to apprenticeship, college, university or work. The Specialist High Skills Major is a specialized program. [Specialist High Skills Major; DRAFT Implementation Handbook, M.O.E. 2007]

5.1.1 What is a Specialist High Skills Major? (SHSM)

A Specialist High Skills Major is a type of ministry-approved specialized program. The SHSM allows students to focus on knowledge and skills that are of particular importance in certain economic sectors, and to obtain certifications recognized in those sectors, as they work towards meeting the requirements for an Ontario Secondary School Diploma (OSSD). Students who graduate with a SHSM designation on their diploma are prepared for success in a particular sector in the postsecondary destination of their choice, whether it be apprenticeship training, a college or university program or the workplace.

Every SHSM must include the following five components, which are outlined in detail in ministry-approved frameworks developed for each area of specialization:

1. A package of 9-11 required credits (the majority earned in Grade 11 and 12 courses) that constitute a pathway to one of four possible destinations: apprenticeship training, college, university program or the workplace.

The package must include:

- four credits – called major credits – for courses that provide knowledge and skills closely related to the particular sector of specialization;
- three or four additional required credits for courses in English and other relevant disciplines, as specified in each of the frameworks, which include units of study that are customized to the particular sector. These credits may be used to meet compulsory credit requirements for the OSSD;
- two cooperative education credits which may be used to meet two of the 18 compulsory credit requirements for the OSSD;
- one half credit for the Grade 10 Career Studies Course

2. Each SHSM framework identifies the compulsory certification;
3. Experiential learning through job shadowing, work experience, and a minimum of 2 credits earned through cooperatives education work placements;
4. Use of the Ontario Skills Passport (OSP) to document demonstration of essential skills;
5. "Reach ahead" opportunities, which allow students to experience learning in their intended postsecondary destination and which can range from a day of attendance at college, a university, or a workplace to the completion of a dual credit.

5.1.2 How Will the Specialist High Skills Major Benefit Students?

- A SHSM allows students to experience a range of customized, career-focused learning opportunities. It enables a student to take a course in an area of interest to a particular sector while working toward an OSSD.
- The focused learning experiences of a SHSM program give students the opportunity to explore, identify and refine career goals and make informed decisions related to postsecondary education, training and career next steps.
- The experiential learning opportunities provided in a SHSM enable students to refine their skills and improve their work habits, gain confidence in their ability to succeed, and see the connections between their studies, the real world, and their future careers. Students are also able to begin to establish relationships in their chosen field.
- Students who graduate with a SHSM can look forward to improved prospects after secondary school because of the recognition of the SHSM framework content by a variety of representatives from the economic sector, apprenticeship training programs, colleges, and universities.

5.1.3 How Will the Specialist High Skills Major Benefit Students?

- In 2006-07, 27 school boards have been approved by the Ministry to launch SHSMs related to five different economic sectors. The "majors" being offered are in arts and culture, construction, hospitality and tourism, manufacturing, and primary industries (agriculture, mining, forestry and landscaping).
- Starting in September 2007, phased implementation of the SHSM will expand to additional boards approved by the Ministry. It is anticipated that by September 2008. SHSMs will be available in all school boards across the province. [Specialist High Skills Major; Fact Sheet, Ontario Ministry of Education, 2006]
- Five sectors were initiated in 06/07, with four more sectors coming on line in 07/08, and two more are contemplated for 08/09. Conversations with Ministry of Education staff confirmed that a formal request from the Alliance related to adding food processing as a sector would be well received.

Section 6

SPECIALIZED SECTOR INFRASTRUCTURE TO ENHANCE LEARNING OPPORTUNITIES

Specialized Sector Infrastructure to Enhance Learning Opportunities

One of the options which the consultants were directed to probe, as part of the terms of reference of the Blueprint, was the interest of and need for the food and beverage industry to have an Institute of Food Technology created at one specific college. The concept behind having such an Institute is to give Ontario's food and beverage industry dedicated infrastructure where its unique technology needs can be addressed for employers and to appeal to students as a learning opportunity with great employment potential. Without such a specific food and beverage industry focus at one college, there is a real risk that the food industry will never receive the attention its economic importance to Ontario warrants and that students will never view the sector as a unique destination for a career.

In this section, the consultants identify the criteria that make Conestoga College particularly well suited for developing specialized sector infrastructure to enhance learning opportunities and to attract students for Ontario's food and beverage processing industry.

6.1 Best Practices:

If a single site was the preferred option for hosting an Institute for Food Technology, Conestoga College in the consultants' opinion, definitely fits the criteria. When visiting and/or interacting with various colleges throughout the province, the following criteria were used as a benchmark to assess each college's capabilities.

General Criteria

Location

- location in relationship to major centres
- location in relationship to a major airport
- location in relationship to economic base
- location in relationship to the food processing employer base
- growth area

Program

- job placement rates of the college
- employer satisfaction
- graduate satisfaction
- full range of academic programs
- apprentice opportunities
- continuing education program opportunities
- preparatory and upgrading program opportunities
- international English Language opportunities
- availability of testing service opportunities
- prior learning assessment capabilities
- range of technology and trades programs
- ability to offer programming opportunities in an applied degree format
- experience in working with industry/program advisory committees

Corporate Training

- experienced in delivering courses and customized solutions to industry
- flexibility in providing training
- industry corporate partners perception of the college
- experienced in designing / customizing curriculum specific to a sector

International Students

- ability to assess the language ability of candidates
- ability to incorporate ESL programs into customized programs

General

- commitment to the concept of a centre of excellence
- credibility with industry partners
- willing to provide financial assistance
- experience / success in marketing their college to public schools and teachers
- success in working with employers related to cooperative education placements

Other Unique Factors

- are there any unique factors that distinguish one particular college over another

Conestoga is an Institute of Technology and Advanced Learning. Conestoga has a full range of academic programming from preparatory to apprenticeship to one-year certificate, two- and three-year diploma, four-year degree programs, as well as post-degree and post-diploma programming.

Conestoga is one of the largest apprenticeship colleges in Ontario. They have successfully piloted and established programming that links one-year certificate or two-year diploma programming to apprenticeship programming.

Conestoga has a full range of engineering technology and trades programs (robotics, welding, machining, advanced manufacturing, construction, electrical design, maintenance mechanic, millwright) that would serve as a good foundation for the food processing industry. Existing programs could be modified to better meet the needs of the Alliance for Food Processors. As well, in partnership with the industry, new programming could be developed at the apprenticeship, certificate, diploma, degree and post-degree levels. Conestoga has had significant experience in developing new programming at all levels to meet industry needs.

Conestoga has been designated as an Institute of Technology and Advanced Learning (ITAL). They are one of three colleges in Ontario (Humber and Sheridan) with this designation. ITALS are permitted to offer a higher percentage of their academic programming in a degree format than the other 19 colleges (15% as opposed to 5%). In fact, 10 of 19 of the colleges that are not Institutes of Technology do not offer degree programs. (three have permission to offer applied degrees but have not done so). In addition, the ITALS have a mandate to do applied research.

In September of 2004, Conestoga offered a unique program called Mechanical Technician Diploma/Apprenticeship Co-op at the Doon Campus in Kitchener.
Successful completion of the program resulted in the granting of a Conestoga Diploma plus a College Certificate of Apprenticeship in one of three specializations: Tool and Die Maker/Toolmaker, Machine Tool Builder Integrator or General Machinist. Graduates are eligible to write an exam to earn a Certificate of Qualification in the appropriate trade when they have completed necessary on-the-job training requirements.

The program has three main sections. The first is a three 15-week semester of study at Conestoga. The second is a 56-week period for completion of a paid co-op apprenticeship on the job in industry. The third is a 20-week semester at Conestoga. The expectation is that students will complete the entire program in two and one-half years, although there will be supplemental instructional requirements in the Machine Tool Builder Integrator trade. Students in this program are registered as apprentices to the consortium as of their very first day of participation.

6.2 Continuing Education

Conestoga is a major provider of continuing education programs. They have approximately 37,000 students annually who take courses or programs at the College, at their work site or on-line. More than 90% of these students are involved in skills programs to upgrade their credentials. They have designed numerous courses as well as diplomas to meet industry needs. Conestoga has always been ranked first on provincial surveys (conducted every two years) of their Continuing Education programming and services.

The following is a sample of programs/courses available through Continuing Education. Most of these courses can be taken through evening and/or weekend deliveries with many of them being available through an online mode. These programs or specific courses can be tailored to meet the specific needs of corporate clients:

- Applied Organizational Leadership and Development
- General Business
- Human Resources
- Management Skills
- Occupational Health and Safety
- Ontario Management Development – Business Management Skills/ Leadership Skills
- Project Management
- Communication
- Management and Supervision - Seminars
- Manufacturing Leadership Certificate Program (MLCP)
- Seminars – Manufacturing
- Seminars - Safety

Conestoga is a major provider of preparatory and upgrading programming. They are assisting approximately 5,000 clients annually who are unemployed or underemployed.

6.2.1 Retraining of Skilled Workers - Given the current stated of the economy, particularly as it applies to the manufacturing sector, consideration should be given to the development of a modular/bridging course(s) for skilled workers transitioning from other sectors.

6.3 IELTS

Conestoga holds the license for most of Canada for the International English Language Testing Service (IELTS) which is sponsored by the British Council. They test more than 6,000 people across Canada annually. IELTS Testing Centre (located at the Doon Campus)

IELTS is designed to assess the language ability of candidates who need to study or work where English is the language of communication.

6.4 E.S.L.

Conestoga is a significant provider of English as a Second Language training and are actively involved with the integration of immigrants into their community. They are on the Steering Committee of the Waterloo Region Immigration and Employment Network (WRIEN). They do language testing, credential assessments and develop pathways to Canadian credentials. They offer the services of Prior Learning Assessment Review (PLAR) to ensure that immigrants, as well as mature adults, get appropriate credit for their academic and work experience.

6.5 Prior Learning and Assessment

Individuals can earn college credits through the Prior Learning Assessment and Recognition Process. Adults with significant work experience and like experience can now have their skills knowledge assessed for course credits toward a college certificate or diploma. The learning may have been achieved through activities such as work experience, volunteer activities, military experience, travel, or any self-directed activities such as hobbies, films reviewed, books read or attendance at workshops and conferences. The assessment process could include any of a variety of evaluation methods such as challenge tests, demonstrations, or portfolio development.

6.6 TOWES (Test of Workplace Essential Skills)

Conestoga College also offers a new service to students and the public. It is one of 21 Colleges with exclusive rights to use and distribute TOWES in Ontario. This assessment tool is supported by Human Resources and Skills Development Canada (HRSDC)

- TOWES is a valid and reliable testing tool that can benefit employers, employees and those seeking employment.
- Each level tests three workplace Essential Skills: reading text, document use and numeracy. These skills are the most commonly required in the 200 occupations that have been profiles to date by HRSDC.www.towes.com
- TOWES uses a variety of authentic trade-specific workplace documents in its test materials (schedules, order forms, labels, schematics catalogue entries etc.)
- Successful completion of TOWES at any of the three levels provides a credential for use in seeking employment.
- Employers can use TOWES as a screening tool
- Employees can use TOWES as a means of assessing their current level of proficiency
- Unemployed individual can use TOWES to assess their level of proficiency fro a particular job category.
- Graduating students can take a TOWES credential to their employment interviews.

6.7 Rationale for Locating the Food Processing Institute at Conestoga

The following points in the consultants' opinion highlight the rationale for selecting Conestoga as the College to host the Institute of Food Technology:

- Visibility from Highway 401 on the new Cambridge Campus
- Campus is approximately one hour from Pearson International Airport
- Students and training clients can easily commute from Waterloo, Toronto, Hamilton and London and campus is central in southwestern Ontario
- Regions of Waterloo and Wellington are among the fastest growing areas in Canada
- Region is a magnet for immigration to Canada
- Highly skilled workforce
- Strong manufacturing base
- Diverse and comprehensive economic base – insurance, automotive, high tech, agriculture, advanced manufacturing, aerospace
- Export-driven economy that is globally competitive. Region is one of the economic engines of Canada
- Proximity to existing food processing employer base

6.8 Unique Factor - Proposed School of Engineering Technology and Trades

Conestoga has also applied to the Province for funding for a School of Engineering Technology and Trades on a new Cambridge Campus. The location of the Institute for Food Processing on the new Cambridge Campus with the School of Engineering Technology and Trades would present these opportunities:

- Greater cost-effectiveness vis-à-vis equipment, space, bricks and mortar and land. The location of Conestoga School of Engineering Technology and Trades would significantly reduce the cost of equipment. Conestoga possesses equipment for welding, machining, CNC machining, industrial maintenance mechanic, robotics, etc., which could be used by students in the Food Processing Institute programs.
- Conestoga would provide the land
- The space required by the Food Processing Institute would be less than in a stand alone facility because existing College equipment could be utilized
- The size of the Institute in a shared facility with Conestoga would be reduced
- Fuller range of student services to support student learning: disability services, counseling, remediation learning centre, library, peer tutoring, recreation, student life events, etc.
- Fuller range of administrative services as well as greater cost effectiveness as a result of economies of scale: student admissions, marketing, registration, student information systems, records keeping, cleaning, security, health and safety, etc.
- Nationally recognized credentialing as well as a full range of academic programming (preparatory, pre-apprenticeship, certificate, diploma, degree and post-diploma)
- Enhanced quality via experienced and recognized curriculum development experts
- Critical mass of College programming will make Food Processing Institute courses and programs more attractive to potential applicants
- Larger number of faculty who could be linked to Food Processing Institute through the multiple engineering technology programs offered at Conestoga

Section 7

DELIVERING THE MESSAGE

7.1 Communications Plan

Needs Analysis

There is no question that Ontario is facing progressive and deepening labour shortages, as a result of an aging workforce, skills shortage and technological diversification. The literature suggests that strategies are needed:

- to assist the food processing industry in adapting to technological change;
- to enhance the succession planning and process infrastructure in order to assist in skills updating / training;
- to increase public awareness of the industry as a stable, safe and viable "career of choice".

Related to enhancing public awareness the literature reveals that the food industry is not understood by most Ontarians and in fact it is misunderstood, especially by younger workers and individuals seeking new careers.

Objectives

The proposed objectives of a Communication Plan for this sector are as follows:

- To create an appealing, innovative and exciting brand identity for the industry;
- To inform high school and college students of Food Processing Industry career opportunities;
- To establish a positive reputation for the Food Processing Industry;
- To participate in opportunities to attract and retain skilled workers to the Food Processing Industry.

Target Audiences

The targeted audiences for this plan are separated into: primary audiences, secondary audiences and tertiary audiences.

Primary Audience

- Students primarily in grades 11 and 12 as well as Students in grades 7 through 10 plus college and university students.

Secondary Audience

- Educators (including Guidance Councilors, Instructors and Administration);
- Ontario General Public (including parents, industry workers).

Tertiary Audience - New Canadians

Key Messages

Key messages are words or phrases that are intended to be a "catch phrase" or rallying cry for the industry. They should provoke individuals to consider looking at the career opportunities in this sector.

Below are some contemplated messages that should serve as a starting point for an in-depth discussion by industry representatives:

- Help feed the world
- Grow with us – Choose a career in Food Processing
- Food for Thought – Have you considered the Food Processing Industry as a Career?
- Make a Smart Choice – Choose a Career in Food Processing

7.2 Communications Tactics

1. Brand Identity

A brand identity needs to be a call-to-action that all communications tactics can support and build on. Potential suggested themes are:

Hungry for a great career?
Enjoy a career for life
Eat up our opportunities
Smart Move. Help create our food.
Nourish your life.
Nourish your career.
Eat up our opportunities.

2. Website

Integral for reaching primary audience and appealing to media preference

3. Brochure

Different versions modified according to the target audience

4. Media Relations

Targeted press releases in support of AOFP announcements, industry trends, and campaign successes

5. Out-of-home Advertising

Outdoor, Transit, Campus etc.

6. Promotional DVD Production – Virtual Tour

Video interviews with a cross-section of workers in exciting careers to feature on CD in media kits, at job fairs, on televisions (if there is budget) and on web site

7. Profile

Directly profile the industry with secondary students and guidance teachers across the Province. An educator would organize the visit and take a regional industry representative with them to local career days, regional guidance meetings and targeted schools. This road show will enable the industry to gain exposure, showcase industry success stories, and provide students, teachers and job searchers the opportunity to interact with members of the sector.

8. Trade-Show Booth

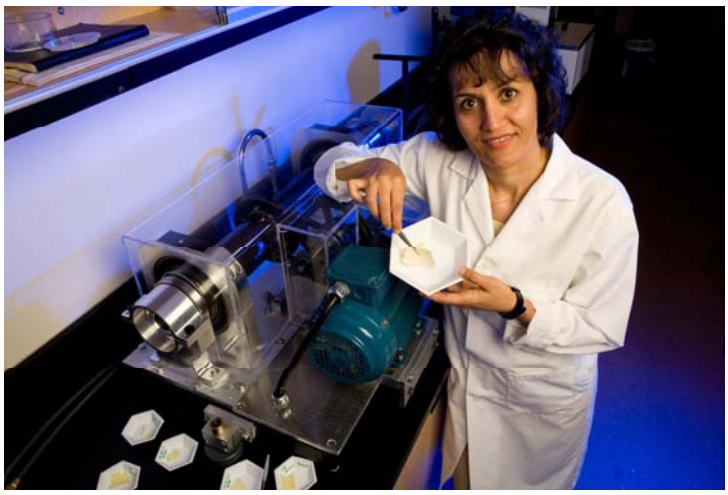
9. Branded Promotional Item

Food-related …. Cookies/mugs/water bottle/ etc.

Note: A detailed communications plan developed by Honey Design Marketing can be found in ***Appendix 15***

Section 8

OPTIONS FOR ACTION



8.1 Options for Action

This section entitled "Option for Action" outlines areas the consultants believe should be considered as implementation plans are formulated. Each option leads to either a single or a series of recommendations outlined in the following section. They are as follows:

8.1.1 Marketing Related Option

A comprehensive marketing plan is required if the industry hopes to both change the image of this sector and profile food processing for potential workers. It is the opinion of the consultants that this plan should be developed and phase one of the implementation process started in time to positively impact college enrolments for the 2008/09 school year.

8.1.2 Immigrant Related Option

With support and training methods designed to reflect the needs of new Canadians, immigrants could play a significant role in addressing the labour shortage. It is the consultants' view that customized, modular short courses are appropriate ways of beginning the re-training process.

8.1.3 Program Related Option

Curriculum that is customized to meet the unique needs of prospective college students as well as current employees is essential if colleges and industry are to recruit and retain individuals in this sector. Ongoing participation through industry advisory committee must continue and in fact escalate if industry hopes to make a difference in this area.

Governmental support for the development and implementation of corporate training programs in the opinion of the consultants, is essential to the retention of current employees. Support for both the industry and the worker is also required to enable individuals to avail themselves of these opportunities during the work day.

8.1.4 Equipment Related Option

Current equipment is required if industry hopes to shorten the learning curve between the school experience and the work experience. It is the consultants' opinion that industry and individual corporate citizens would be prepared to financially support colleges related to this endeavour.

8.1.5 Education Related Option

The concept of a Specialist High Skills Major should significantly enhance the profile of this sector with secondary students. Participation in this credit opportunity coupled with industry input to the grade 10 open guidance credit should enable students to better understand and appreciate the food processing industry. A program in this sector similar to the "Ontario's Rangers Program" under the Ontario Summer Jobs Program would also assist in profiling the sector.

8.1.6 Apprenticeships Related Option

Apprenticeship opportunities provide another path for individuals. While this is certainly a desired method for individuals seeking an authentic learning experience, industry must be prepared to take these apprentices and provide them with the practical experience they require.

8.1.7 Incentives

The consultants believe that governmental initiatives such as an incentive policy be used in tandem to raise productivity on the one hand, by encouraging greater capital investment in automation technology, and by obtaining more skilled workers for the sector on the other hand. Tax breaks for retraining existing workers are also an important part of a well-balanced incentive approach.

8.1.8 A - Centre of Excellence Related Option

If a dedicated Institute of Technology is selected as the preferred option, in the consultants' opinion Conestoga College should be the location for that institute. Conestoga is an Institute of Technology and Advanced Learning with the mandate to offer 15% of its programming in an applied degree format and conduct applied research. It has a full range of academic programming from preparatory to apprenticeship to one-year certificate, two- and three-year diploma, four-year degree programs, as well as post-degree and post-diploma programming.

Conestoga is one of the largest apprenticeship colleges in Ontario. They have successfully piloted and established programming that links one-year certificate or two-year diploma programming to apprenticeship programming. These programs permit students to obtain both post-secondary credentials as well as a trades certificate.

Conestoga has a full range of engineering technology and trades programs (robotics, welding, machining, advanced manufacturing, construction, electrical design, maintenance mechanic, millwright) that would serve as a good foundation for the food processing industry. Existing programs could be easily modified to better meet the needs of the Alliance for Food Processors. Conestoga is also a major provider of continuing education programs. They have approximately 37,000 students annually who take courses or programs at the College, at their work site or on-line.

Conestoga is a major provider of preparatory and upgrading programming. They are assisting approximately 5,000 clients annually who are unemployed or underemployed. Conestoga also holds the license for most of Canada for the International English Language Testing Service (IELTS). Conestoga is a significant provider of English as a Second Language training and are actively involved with the integration of immigrants into their community. They offer a full range of services such as counseling, aptitude testing, skills assessment, language testing, to facilitate their transition to the workplace.

Advantages of Locating the Institute of Food Technology at Conestoga College

- Conestoga is an Institute of Learning with the mandate to offer 15% of its programming in an applied degree form and conduct applied research.
- Conestoga has the highest job placement of all Ontario Colleges.
- If Conestoga secures funding for a School of Technology and Trades Centre, obviously greater cost effectiveness vis-à-vis equipment, space and land would be achieved and the Food Processing Centre would be an integral part of this technology centre.
- Conestoga has had significant experience and success in developing new programs at all levels to meet industry needs.
- Conestoga has successfully piloted and established programs that link one year certificate and two year diploma programs to apprenticeship programs.
- It is easier to profile and recruit for a single world class facility.

Disadvantages of Locating the Institute of Food Technology at Conestoga College

- Given the reluctance of potential students to leave their home jurisdiction, it may be difficult to attract sufficient numbers of student required to address the pending shortage.
- Other Colleges with established relationships with local industry may not perceive this option to be in their best interest.

8.1.9 A Federated Related Option

This is a relatively new concept that was established in 2006 by a number of northern colleges and the mining sector. The objectives of this program would be to:

- strengthen communities through access to education and training;
- encourage learners to stay in southern Ontario and explore career opportunities in one of its colleges;
- assist the food processing industry in meeting the unique educational needs for all students;
- work collaboratively with industry representatives to ensure the availability and access to sector related programs in local communities;
- ensure industry has a single point of contact with the college community.

Within this option essentially colleges like Conestoga, Mohawk, Niagara, Fanshawe, Loyalist and others if they express an interest, would form a "Federated School of Food Technology". Within this arrangement the Presidents would come together and develop the terms and conditions of a consortium. Learners would have access to a variety of educational opportunities, including training modules, apprenticeships and certificate diploma and undergraduate and graduate degree programs at their *home* college. Employers could enter the food processing industry as apprentices, technicians, technologists in a number of food related careers. Programs would obviously be customized to meet the unique needs of the industry.

The advantages of this option from the consultants' perspective are as follows:

- Given that students entering the college system from secondary schools often opt to remain within a hundred mile radius of their home community, a consortium of colleges may be in their best interest.
- Several colleges would potentially graduate more students in any given year than a single site and would assist in addressing the labour shortage in a shorter time period.

The disadvantages of this option from the consultants' perspective are as follows:

- It is often more difficult to profile several sites rather than focusing on a single entity with a "world class facility."
- It is often more difficult to secure a commitment from the private sector to make an "in kind" donation to multiple sites.
- Students often identify with a particular college that has an established bias or expertise.
- If industry sees this initiative evolving into a holistic solution for the food processing sector, it may be prudent to look at a single site as opposed to multiple locations.

8.1.10 - Coordinator Related Option College

Essentially this option utilizes features of the previous two options. An institute for Food Technology would be recommended for the Cambridge site. Conestoga would act as a coordinating body with other colleges cooperating related to the development of:

- terms and conditions;
- course offerings;
- customization of curriculum;
- recruitment practices;
- corporate training;
- ensuring there is a single point of contact for industry;
- working with industry to profile the sector.

Each college would develop/customize programs unique to their area in response to the needs of their jurisdiction.

Advantages of a Coordinating College

- a state of the art institute with all its advantages would be available to students while individual unique programs would be available in local jurisdictions;
- previously established relationships between a particular college and local industry would be respected and maintained;
- the potential for a larger graduating class is significantly enhanced;
- recruitment practices are coordinated but also shared by several colleges.

Disadvantages of a Coordinating College

- there is a potential for confusion among students related to which is the best/more appropriate institute for a certification in food processing;
- this is a relatively new concept for colleges and there may be some early challenges associated with implementation.

8.1.11 – Regional Related Option

This option essentially involves establishing a minimum of six centres of excellence across the province related to where industry has traditionally established a working relationship with a local college (e.g. Niagara College with the wine sector, Conestoga with the meat processing sector, George Brown with the bakery sector, Mohawk with the packaging sector and Loyalist with the cereal sector). It also builds on the current successes a local college has had with particular sectors of the food processing industry with the region served.

Advantages of a Regional Education Concept

- respects the existing relationships and traditions,
- unique or specific customization related to a specific area is easier.

Disadvantages of a Regional Education Concept

- it is more difficult for industry to profile several sites;
- students often identify with a single "centre of excellence";
- extensive diversification is often problematic.

8.2 Incremental Beginnings

The consultants believe that all of the options and recommendations are integral to the continued success of this sector. However regardless of which option is supported, it is imperative that the Alliance of Ontario Food Processors continue to work collaboratively with colleges government and industry to:

- Develop comprehensive marketing strategies;
- Help profile this industry as a "Career of Choice";
- Customize curriculum unique to the sector;
- Continue to encourage and support joint corporate training ventures;
- Continue to work with the GFTC on the development of short modular courses;
- Continue to secure "in kind" donations from private industry and individual corporate citizens;
- Begin to formally work with the Ministry of Education related to the Specialist High Skills Major initiative;
- Continue to work with the government related to profiling and expanding the process operator course in food manufacturing
- Continue to work with government related to the creation of an Institute for Food Technology.

8.2.1 Incremental Beginnings – Program Requirements

It is virtually impossible to outline the program options, facilities and equipment that would be required for the food and beverage processing sector until a decision has been made related to the previously referenced options. The type and nature of the programs could vary significantly dependent on the college(s) selected. However, the consultants recommend that consideration be given to immediately look at offering some of the following programs:

- preparatory to apprenticeship programs;
- variety of one year certificate program (linked to apprenticeship program)
- two year diploma program (linked to apprenticeship program)
- three year diploma program
- four year diploma program
- post degree and post diploma programs
- variety of continuing education programs (eg organizational leadership and development, MLCP, project management, etc.)
- ESL programs (included in this would be international English language testing service and prior learning and assessment service)
- Variety of customized corporate training programs

Note: Obviously all of the above would need to be customized to meet the unique needs of the sector

Regarding existing facilities and equipment, the consultants contend that existing facilities and equipment could be used until a centre of excellence is built and it is anticipated that local industry and individual corporate citizens would work with government and academia to ensure state of the art equipment is available in this anticipated world class facility.

Section 9

REVIEW / DEVELOPMENT / IMPLEMENTATION TIME-LINES FOR THE BLUEPRINT

9.1 Review / Development / Implementation Time-lines for the Blueprint

Stages	Dates	Component	Deliverables / Tasks
Review Stage	July 2, 2007 to Aug. 1 /07	Components 1 & 2	Conduct focus groups (students / new Canadians), literature review, research up-date, industry interviews / analysis, review exemplary programs in other sectors
Development Stage	Aug. 2 /07 to Nov. 27 /07	Components 3 & 4	Develop key messages, outline common themes and trends, create a communications plan, discuss current and proposed programs with senior staff at colleges, engage senior officials in all three sectors, secure a commitment from all sectors for a centre of excellence, develop a blueprint and an executive summary.
Pre-Implementation Stage	Nov. 8 2007 Nov. 28 /07 Nov. 29 /07 Dec. 3-14 Week of Dec. 17 March – April 2008	Blueprint Component 5	Present first draft of the blueprint to the steering committee for input/suggestions Present second draft of the blueprint to the steering committee for final review Make final revisions to the blueprint and have a final document printed Arrange meetings with the three Deputy Ministers to present / discuss the blueprint Present the final document to the Minister(s) Anticipated government response to our blueprint

Stages	Dates	Component	Deliverables / Tasks
Proposed Next Steps	2008/09	Champion	AOFP designate someone to champion the implementation of the blueprint
	2008/09	Marketing Plan	AOFP to develop elements of a marketing plan
	2008/09	Marketing Plan	AOFP to begin to develop a marketing plan that includes a regional industry / education *road show*
	2008/09	Curriculum	Continue to work with colleges through industry advisory committees to customize curriculum unique to the food processing sector
	2008/09	Profiling the Food Sector	In cooperation with regional education and industry representatives implement a marketing plan in designated parts of Ontario. (2 year project)
	2008/09	Industry Training for current workers	Work with designated colleges / GFTC to develop and implement modular training in the "soft skills area" to address the needs of current industry workers
	2008/09	New Canadians	Work with the Ministry of Citizenship and designated colleges / GFTC to develop a "short course" to assist in re-training of new Canadians to help to address the shortage of skilled workers
	2008/09	College Programs	Ensure that customized programs unique to the food processing sector are available for new students registering in the fall semester of 2008.
	2008/09	Equipment/ Facilities/ Program	Continue working with college(s) regarding equipment, facilities, program in anticipation of a positive response to our request for an institute of food technology (Note: new time lines/tasks will need to be developed subsequent to a decision on the institute of technology)

Section 10

SUMMARY

List of recommendations

10.1 List of recommendations – The consultants recommend that:

10.1.1 Marketing Plan Recommendations

a. With the support of the Agricultural Adaptation Council, (AAC), Ontario Ministry of Agriculture, Food and Rural Affairs (OAFRA), Ministry of Training, Colleges and Universities, (MTCU), Ministry of Education (MEDU), the Alliance of Food Processors (AOFP) should immediately develop a comprehensive marketing plan with the objective of favourably changing the perception of the food processing sector to one that will enable students to embrace the industry as a "Career of Choice"

- Test and launch an appealing, innovative, exciting brand identity for the food processing sector;
- Develop electronically-delivered visual materials to enhance the public awareness of the sector by directly interacting with secondary, college and university students in an innovative format;

b. That the Alliance immediately consider contracting a firm to develop and implement a regional education / industry campaign with secondary students and guidance teachers as well as grade 7 and 8, college and university students to enable:

- the industry to gain positive exposure
- the industry to showcase specific worker success stories
- student and teachers to have the opportunity to see educators and members of the food processing sector working as a team

10.1.2 Recommendation related to Addressing the Needs of the Immigrant Workers

The Alliance of Ontario Food Processors work collaboratively with colleges, the Guelph Food Institute of Technology, the Ministry of Citizenship and Immigration and Citizenship and Immigration -Canada to develop a series of "short courses" (modules) for New Canadians that:

- has a complementary ESL component;
- has a paid cooperative education component;
- would be offered in a variety of college settings that are in close proximity to the immigrant population;
- enable new Canadians to be retrained or to have validation of the credentials they bring to Canada and hence employed commensurate with their skills and experiences.

10.1.3 Program Recommendations

Colleges continue to collaboratively work together with Local Industry Advisory Committees to customize existing programs at both the skilled trades and supervisory level to meet the unique needs of the food processing sector. These courses should be:

- flexible in terms of time;
- embrace a modular approach;
- based on traditional proven courses currently being offered;
- sequential in nature so that students "ladder" through to the appropriate level.

10.1.4 Corporate Training Recommendation

That all Colleges throughout the province continue to customize programs related to this sector and respond to industry's needs for corporate training in a positive and supportive manner.

That the Ontario government support the food processing sector by funding both the development and implementation of customized training programs for skilled workers and supervisors and by supporting both the industry and the workers by ensuring they have both the time and opportunity within the work day to avail themselves of these opportunities.

10.1.5 Equipment Recommendation

That the college(s) selected to house the Institute of Food Technology approach private industry and individual corporate citizens related to the value of making a significant "in kind" investment of automation equipment and software unique to their sector so that :

- students can learn on equipment currently being used in the industry;
- the learning curve between school and the place of work be significantly reduced.

10.1.6 Education Recommendations

That the Alliance immediately forward a copy of this blueprint to the Director of the Student Success Branch, with an accompanying formal letter requesting that the food processing sector be added as a sector in 2008 to the phasing in of the High Skills Major concept so that:

- students, as early as grades 11 and 12, can be exposed to units of study that are customized to reflect the unique needs of the industry;
- students are able to begin to establish meaningful relationships with industry representatives;
- students are allowed to participate in experiential learning opportunities that will enable them to refine their skills and see the connection between the real world and their future careers.

That the Alliance of Ontario Food Processors contact both the Ministry of Education representatives and provincial Guidance Coordinators related to strategies they should consider in making input to the grade 10 open guidance course and securing a profile in Career Cruising.

That the Ontario Government consider program options for youth employment in the food and beverage processing industry that links to the Ontario Summer Jobs Program.

10.1.7 Apprentice Recommendation

That industry commit to hiring more apprentices in their factories and commit to working with them to complete their training. This commitment will be invaluable to the development and implementation of a marketing/recruitment plan.

10.1.8 Taxation Recommendation

That public policy in other government initiatives, such as taxation policy, be aligned with the objective of obtaining more skilled workers for the sector through joint cooperation of industry, government and educational institutions utilizing such possible measures as:

- Faster income tax write-offs for productivity-enhancing machinery and equipment where there is a correspondingly commensurate investment by the company in worker skills development i.e. link the tax incentive on purchasing equipment to being able to demonstrate how workers received the skills training necessary to maintain and operate it through a recognized program in order to qualify the faster tax write-off

To be competitive in a high dollar economy, food processing firms will need to obtain major gains in productivity and need investment incentives to accelerate the pace of such activity. The investment will not be optimized unless there is a corresponding focus on skills development.

- Tax incentives to support worker retraining that would lower the cost to the employer of providing such training and provide an economic incentive for the worker to enrol in a retraining program outside of regular working hours.

The objective of using tax policy in this manner is to encourage greater cooperation between food processing firms and colleges. To be most effective, such tax policy needs to be aligned at both the federal and provincial level.

10.1.9 Recommendation related to an Institute of Food technology

The Ontario Government support the Alliance of Food Processors by committing the financial resources required to build a "State of the Art" Institute of Food Technology at Conestoga College. If the government supports Conestoga's request for a 200,000 square foot Centre of Excellence – A Centre of Engineering Technology and Trades, the consultants envision the Institute of Food Technology being an integral part of this centre along with Welding, Robotics and Automation, Electronics / Telecommunications and Information Technology, and Civil, Constructions, and Architectural Engineering Technologies, Centre for Theatre Arts Technologies, and Sustainable Green Energy and Applied Research.

10.1.10 Implementation Recommendation

That AOFP act as the coordinator, to harness the willingness and commitment of food industry executives, as expressed on October 3 and at other times, to collaboratively develop, "own" and champion the implementation plan and support its execution to ensure that it delivers high value for the expected public investment to be made.

APPENDICES

Appendix 1. Overview of Colleges Visited

Cambrian College in Sudbury, has over 4,400 full-time students enrolled in business, applied arts, human services, health sciences, technology, communication and creative arts, hospitality and tourism, apprenticeship, skills, and trades, with an additional 8,000 registrations taken annually in part-time personal, professional and human resources development courses and seminars.

Conestoga offers advanced applied education, and research leading to the commercialization of innovation in southwestern Ontario. For the last nine straight years independent research has named Conestoga as the number one publicly funded college in Ontario!

Fanshawe is one of the largest colleges in Ontario with campuses located in London, Simcoe, St. Thomas and Woodstock and smaller centres in Tillsonburg and Strathroy. They offer a wide variety of undergraduate and post-graduate programs and courses that lead to employment opportunities in the areas of health care, human services, electronics, business administration, information technology, music production, art, design, manufacturing, hospitality, transportation, broadcasting, environmental science and civil engineering.

Loyalist College officially opened its doors in 1967 and by 1968 had a permanent home along Wallbridge-Loyalist road. Two years later, the demand for more space, led to the construction of the Lennox and Addington Wing to house the School of Technology and Retraining. By 1985, further additions to both the building and college curriculum included programs such as Photojournalism, Television Broadcasting, and Health Sciences and also witnessed a vital linking of the First Nations Technical Institute of Tyendinaga

Mohawk College serves the Golden Horseshoe, with campuses in Brantford, Stoney Creek, and Hamilton. By the mid-1970's, Mohawk had emerged as a college with a focus in engineering, applied arts and business, and health technology, with more than 18,000 full- and part-time students and a staff of 600.

Niagara College has 6,000 full time students and more than 15,000 Continuing Education registrants. The College offers 70 post-secondary diploma and graduate certificate programs, two bachelor degree programs, and skills and apprenticeship training programs.

Appendix 2. Sample Program Offerings – Skilled Trades

Vocational Learning Outcomes – Techniques

The graduate can demonstrate the ability to:

1. Solve routine technical problems related to shop environments using a variety of systematic approaches.
2. Interpret and produce basic graphics and other standard technical documents necessary for the routine installation, maintenance, repair, and manufacture of components.
3. Complete all work in compliance with health and safety legislation and prescribed organizational practices and procedures to ensure safety of self and others.
4. Perform basic technical measurements using appropriate tools.
5. Use shop tools and equipment for basic installation, manufacture, and repair of components to required specifications.
6. Work responsibly and effectively within a shop environment in accordance with appropriate practices and procedures.

Learning Outcomes (Technician) *The graduate can demonstrate the ability to:*

1. Analyze and solve routine technical problems related to manufacturing environments through the application of engineering principles.
2. Conduct routine analysis of components, processes, and systems through the application of engineering principles and practices.
3. Interpret and prepare graphics to appropriate engineering standards.
4. Use computer hardware and software to support the engineering environment.
5. Apply knowledge of manufacturing materials, operations, and processes to support the production of components.
6. Apply knowledge of machinery, tools and other equipment to manufacture and assemble components.
7. Conduct quality control and quality assurance procedures as required.
8. Recognize the environmental, economic, legal, safety, and ethical implications of manufacturing projects.
9. Use and maintain documentation, inventory, and records systems.
10. Contribute to the implementation of a manufacturing project.
11. Develop strategies and plans to improve job performance and work relationships.

Learning Outcomes – Technologist

The graduate can demonstrate the ability to:

1. Analyze and solve complex technical problems related to manufacturing environments through the application of engineering principles.
2. Design and analyze components, processes and systems through the application of engineering principles and practices.
3. Analyze and prepare graphics to appropriate engineering standards.
4. Use computer hardware and software to support the engineering environment.
5. Assist in the specification of manufacturing operations and processes.
6. Apply knowledge of machinery, tools, and other equipment used in manufacturing and assembling components.
7. Specify, coordinate, and conduct quality control and quality assurance procedures.
8. Recognize the environmental, economic, legal, safety and ethical implications.
9. Use and maintain documentation, inventory, and records systems.
10. Participate in the management of a manufacturing project.
11. Develop strategies and plans to improve job performance and work relationships

Appendix 3. Sample Program Offerings

Mohawk College Programs:

Mohawk College provides training for the food industry at the Brantford, Stoney Creek and Hamilton locations. Manufacturing techniques programs at the technician diploma level as well as apprenticeship are currently in place. Mohawk also has a number of unique programs that allow students to move from the technician to apprenticeship programs. New companies located in the food processing / food packaging sector in the Brantford area are: Ferrero Group, Maidstone Bakeries and Pillers Fine Foods. Recognizing the food industry as a growth area, Mohawk College has identified food techniques, processing and packaging as potential growth areas.

The Brantford campus is home to the Graphics and Packaging cluster of programs. There are three streams of the program, Graphic Design -Creative, Graphic Design – Digital and Graphic Design Production – Packaging. Mohawk College has also introduced an Industrial Millwright – Packaging program which is a 30 week certificate that allows graduates to work in the field of packaging maintenance and techniques. Students learn the fundamentals of packaging equipment service, maintenance and implementation of preventative maintenance programs. At the completion of this program, graduates will have completed the basic level apprenticeship curriculum in Industry Mechanic and are eligible to move into the next level of the apprenticeship training after gaining employment. In the consultants' opinion this program is very applicable to the food industry and could be modified in order to meet specific training needs of different companies in the food industry.

Two programs that are currently offered at the STARRT Institute in Stoney Creek that support manufacturing in the food industry and could be modified to meet specific training needs are the Manufacturing Techniques one year certificate program and the Manufacturing Engineering Technician – Automation two year diploma program. At the completion of the Manufacturing Engineering Technician program students will have met all the in-school requirements of the Industrial Mechanic Millwright apprenticeship program.

Manufacturing Techniques:

Program of Studies			
Semester 1			
CADM	10010	CAD Concepts 1	3.00
COMM	LL041	Communications(Langs)	3.00
MANU	10003	Mechanical Maintenance	3.00
MANU	10004	Manufacturing Processes	2.00
MANU	10005	Workshop Technology	4.50
STEN	MF202	Introductory Pneumatics	3.00
Options - Select 1:			
MATH	MA008	Mathematics 1	3.00
MATH	MS150	Mathematics	3.00
Semester 2			
COMP	CO001	Generic Computer Training	2.00
OPEL	XXXXX	General Education 1 (Elective)	2.00
Options - Select 1:			
MATH	MA009	Mathematics 2	3.00
MATH	MA250	Mathematics	3.00
Options - Select 2:			
CADM	10011	CAD Concepts 2	6.00
MANU	ME216	Manufacturing Processes 2	6.00
MANU	ME225	Industrial Maintenance 1	6.00
STEN	MF201	Introductory Hydraulics	4.00
STEN	MF352	Pneumatics 2	3.50

Industrial Millwright - Packaging

Program of Studies			
Level 1			
ELEC	10023	Electr & Electro Controls 1-IMM	2.00
MACH	10011	Machine Techy 1-IMM	4.00
MACH	10003	Workshop Practice 1-IMM	6.00
MACH	10005	Workshop Techy 1-IMM	7.00
MACH	10006	Rigging & Hoisting-IMM	3.00
TDRW	10008	Drawings & Schematics 1-IMM	4.00
WELD	10008	Welding & Fabric 1-IMM	4.00
Level 2			
ELEC	10024	Electr & Electro Controls 2-IMM	2.00
MACH	10012	Machine Techy 2-IMM	5.00
MACH	10007	Workshop Practice 2-IMM	6.50
MACH	10008	Power Transmission-IMM	7.00
TDRW	10009	Drawings & Schematics 2-IMM	4.00
WELD	10009	Welding & Fabric 2-IMM	5.50
Level 3			
ELEC	10025	Electr & Electro Controls 3-IMM	3.00
MACH	10013	Machine Techy 3-IMM	6.00
MACH	10009	Workshop Practice 3-IMM	7.00
MACH	10010	Fluid Power-IMM	10.00
WELD	10010	Welding & Fabric 3-IMM	4.00

Graphic Design Production - Packaging

Semester 1			
COMM	LL041	Communications (Langs)	3.00
CRED	10005	Career Education (G&P)	1.00
GRAP	10003	Principles of Design (G&S)	4.00
GRAP	10004	Intro to Design Applications	4.00
GRAP	10007	Image Editing Fundamentals	2.00
GRAP	10008	Digital Drawing Fundamentals	2.00
PCKG	10001	Intro to Packaging Design	3.00
Semester 2			
CADM	10002	ArtiosCAD Computer Concepts	4.00
PCKG	10002	Packaging Specs & Applications	4.00
PCKG	10004	Corrugated Packaging Design	3.00
PCKG	10006	Introduction to Plastic Packaging	3.00
PCKG	10009	Rigid Packaging Design	4.00
Semester 3			
CADM	10003	ArtiosCAD Creative Design	3.00
COMM	LL122	Researching & Reporting - Lgs	3.00
OPEL	XXXXX	General Education (Elective)	2.00
PCKG	10003	Paperboard Packaging Design	3.00
PCKG	10007	Flexible Packaging Design	3.00
PCKG	PN440	Food Preservation Packaging	3.00
Semester 4			
CHEM	PE106	Preparatory Chemistry (Gas)	4.00
COMM	10034	Active Citizenship	2.00
PCKG	10005	Protective Packaging Design	3.00
PCKG	10008	Packaging Machinery Applications	3.00
PCKG	10010	Packaging Costing	3.00
PCKG	PN401	Packaging Development	3.00
PCKG	PN560	Packaging Regulations & Issues	2.00
Three four month Work Experience are required			35.00

Manufacturing Engineering Technician – Automation

Program of Studies			
Semester 1			
CADM	10010	CAD Concepts 1	3.00
COMM	LL041	Communications (Langs)	3.00
MANU	10003	Mechanical Maintenance	3.00
MANU	10004	Manufacturing Processes	2.00
MANU	10005	Workshop Technology	4.50
MATH	MS150	Mathematics	3.00
STEN	MF202	Introduction to Pneumatics	3.00
Semester 2			
COMP	CO001	Generic Computer Training	2.00
CRED	10014	Career Advancement	2.00
MATH	MA250	Mathematics	3.00
STEN	MF201	Introduction to Hydraulics	4.00
STEN	MF352	Pneumatics 2	3.50
OPEL	XXXXXX	General Education Elective	2.00
Options - Select 1:			
CADM	10011	CAD Concepts 2	6.00
MANU	ME225	Industrial Maintenance 1	6.00
Semester 3			
ASYS	10008	Machine Control	5.00
STEN	10006	Industrial Control	2.00
STEN	MF254	Hydraulics 1	5.00
STEN	MF312	Fluid Power Design	4.00
Semester 4			
ASYS	10007	PLC Application & Control	4.00
COMM	10034	Active Citizenship	2.00
QUAL	10006	Continuous Improvement	2.00

Other programs that curriculum can be pulled from to support specialized training in the food industry include Chemical Engineering Technology, Biotechnology Technician and Health Biotechnology Technician. The Health Biotechnology already contains some course work related to the food industry. The courses in the Health Biotechnology program are listed below.

Mohawk College Continuing Education Health Sciences offers two certificate programs, on a part time basis, related to food preparation and handling. The Food Services Certificate is a 7 course certificate program that focuses on the role of the Food Service Worker and the importance of safety, sanitation and nutrition. The Food Handlers Certificate program provides managers and supervisors of food establishments with the basic food safety information to reduce the potential for food borne illness in the workplace. Upon successful completion of the student will receive a Food Handler Certificate endorsed by the Ministry of Health.

Health Biotechnology Technician:

Program of Studies			
Semester 1			
CHEM	CH116	Chemistry	7.50
COMM	LL041	Communications (Langs)	3.00
COMP	10034	Essential Computer Skills	2.00
CRED	CE106	Intro To Career Education	0.50
MATH	10012	Mathematics 1	3.00
PHYS	PH123	Physical Measurements	5.00
Semester 2			
BIOL	10000	Biotechnology 1	5.00
BIOL	10001	Cell Biology	4.00
CHEM	10002	Organic Chemistry - Introduction	3.00
CHEM	PH108	Analytical Chemistry 1	6.00
MATH	10020	Mathematics	3.00
Semester 3			
BIOL	10006	Human Biology	4.00
HSCI	10021	Microbiology	5.00
BIOL	10007	Food Microbiology	4.50
MATH	MS372	Statistics 1	3.00
OPEL	XXXXX	General Education (Elective)	2.00
BIOL	10008	Forensic Microbiology	2.50
Semester 4			
CHEM	10000	Biochemistry	3.00
COMM	10034	Active Citizenship	2.00
BIOL	10009	Bio Medical	4.00
BIOL	10003	Biotechnology 2	5.00
BIOL	10010	Bio Pharmaceuticals	2.50
HSCI	10022	Genetics	2.50
HSCI	10023	Pharmacology	3.00

Upgrading Programs:

Mohawk College delivers upgrading programs for both domestic and immigrant populations. Mohawk offers comprehensive English as a second language training and assessment. Mohawk also offers, at both Hamilton and Brantford locations, College and Career preparation training in which the mathematics and communications skills of individuals who have not completed high school are assessed and then individual learning programs are implemented with an end goal of meeting eligibility requirements for post secondary programs. Mohawk College also offers programs in Pre-Technology and Pre-Health General Arts and Science. The General Arts and Science Pre Health program prepares graduates to be eligible for university admission in the Bachelors of Nursing degree programs.

In Brantford, a group of community organizations led by the City of Brantford and including Mohawk College are working towards the I-STEP Immigrant Settlement training and employment partnerships. Research completed for the Alliance of Ontario Food Processors indicates that outside of the GTA, Brant, Haldimand and Norfolk have the highest percentage of immigrant workers in the food industry. This I-STEP program could be very valuable in providing the training required to support the immigrant worker population in the food industry. A grant proposal is being developed and this initiative could fit well with an overall Food Techniques Training Centre of Excellence at the Brantford campus of Mohawk College.

Appendix 4.
Pre-Apprenticeship/Apprenticeship: An Overview – Conestoga Version

Apprenticeship training is a combination of about 90% on-the-job and 10% classroom training. It involves a contract between a person who wants to learn trade-related skills and an employer who needs a skilled tradesperson. The person must be employed to begin an apprenticeship and the employer must agree to apprentice the person in a trade. One exception is the Co-op Diploma Apprenticeship Program where the student/apprentice is signed as an apprentice to a Consortium representing the industry

A person interested in becoming an apprentice can usually apply directly to an employer, union or local apprenticing committee. Apprenticeship programs can range from two to five years and during that time the apprentice receives wages based on a proportion of the typical hourly wage received by a fully skilled worker. The wages of an apprentice increase as s/he acquires skills and gains competency.

Upon completion of the apprenticeship program, the apprentice may receive a Certificate of Apprenticeship (under ACA) but is required to write a government exam in order to receive a certificate of Qualification (C of Q). Once the apprentice receives a certificate, s/he is known as a journeyperson.

The Ontario apprenticeship system is the largest in Canada with 72,200 registered apprentices in March 2005. This number includes 19,600 new apprentices. Approximately 24,800 employers were involved in apprenticeship training with more than 10,770 apprenticeship Certifications of Qualifications issued in that year.

There are two different pieces of legislation in Ontario, the Apprenticeship and Certification Act, which is viewed as a competency based model, and the Trades Qualification Act, which is viewed as a time based model. [see chart below]

Competency-Based Model	Time-Based Model
• governed by the Apprenticeship and Certification Act (ACA) since January 2000 • applies to all industrial, service and motive power trades • apprenticeship contract is called a Training Agreement • sponsor refers to the trainer, who may or may not be the apprentice's employer • completion of academic and training standards as prescribed by affiliated Industry Committees • an Ontario Secondary School Diploma (OSSD) at or above the general or college level, or a recognized equivalent	• governed by the Trades Qualification and Apprenticeship Act (TQAA) • applies to all construction trades • apprenticeship contract is called Contract of Apprenticeship • employer refers to the company which has entered into a contract of apprenticeship and has agreed to provide wages and training by a qualified trainer • grade 10 (some trades may require grade 8) Ontario Secondary School or recognized equivalency at or above the general level

Entry into Apprentice Training

Direct Entry

Most apprenticeships require an Ontario Secondary School Diploma (OSSD) or Grade 12 equivalent such as GED or ACE. Individuals find a job with a qualified employer/ sponsor willing to take them on as an apprentice. The employer/ sponsor and the apprentice sign a training agreement/ contract prepared by a training consultant. Apprenticeship can take from two to five years to complete. It includes a classroom component generally delivered by collegess. Apprentices spend about 90% of their time on the job and the rest at school.

Ontario Youth Apprenticeship Program

High school students can begin an apprenticeship while still attending high school. It involves registering for cooperative education and the Ontario Youth Apprenticeship Program (OYAP).

OYAP is a "school to career" program specifically developed to help high school students make a smooth transition from high school directly into their post secondary apprenticeship program. Participation in this program gives high school students a head start on their desired apprenticeship while completing their Ontario Secondary School Diploma.

This two year program can begin in grade 11 or 12. The Articulated program targets skilled trades that are in high demand. Students wishing to take advantage of OYAP in other skilled trades can apply to a Non-Articulated program.

How does OYAP work?

- OYAP is usually a two year program during years 3 to 5 of high school.
- Successful applicants must take the related technology courses, co-op and other recommended subjects.
- The first on-the-job experience is a co-operative education placement for half a day (approximately 3 hours) in the second semester of year 3 or 4.
- The second on-the-job experience is a co-operative education placement for half a day (approximately 3 hours) in the second semester of year 4 or 5.
- Hours towards apprenticeship accumulate, and practical skills or competencies are mastered and "signed off" in students' Training Standards Apprenticeship Booklet.
- Upon graduation, students can begin full time employment without interruption to their apprenticeship training.
- Students attend a college or other training provider to fulfill the in-school portion of their apprenticeship training at specific times scheduled by the MTCU Training Consultant.

Pre-apprenticeship Programs

Colleges and other training deliverers provide hands-on training for individuals interested in exploring a particular trade or moving into an apprenticeship program. Pre-apprenticeship programs provide a solid grounding of the basic skills and knowledge required by the trade. This improves participants' chances of finding an employer who will hire them as an apprentice. Placement opportunities for pre-apprenticeship participants may lead to apprenticeships. Hours spent in pre-apprenticeship training can be credited (under TQAA) towards the overall apprenticeship training, if the individual decides to sign on as an apprentice.

Individuals do not need to be registered as apprentices to participate in pre-apprenticeship programs.

Many LBS/OBS college programs have strong linkages with pre-apprenticeship programs, providing targeted remediation for those students lacking the credentials for entry to apprenticeship. For students who have the required academic prerequisite for apprenticeship, LBS programs offer upgrading in the skills that support student success. Learning and assessment materials are tailored to specific trades.

Apprenticeship Initiatives

Canada is facing a critical shortage of skilled labour. According to sources, there could be as many as 50,000 unfilled jobs by 2010. Many trades and businesses are already claiming a shortage of skilled tradespersons and report that the shortage is a pressing issue.

The Ontario government has implemented a number of initiatives to increase the supply of skilled tradespersons. MTCU is completing a four-year plan to boost apprenticeship training in Ontario. It is investing over $11 million annually to provide opportunities for 26,000 people to train as apprentices for careers in the skilled trades. Youth, in particular, are being encouraged to pursue a career in the skilled trades.

Co-op (College) Diploma Apprenticeship Programs

These programs offer a unique experience for individuals to concurrently complete

- an apprenticeship in-school curriculum
- an apprenticeship co-op experience
- an Ontario College Diploma

One example is the Mechanical Technician -General Machinist Co-Op Diploma Apprenticeship Program offered at Conestoga College. This program is two years long. Students work as signed apprentices in a co-op format between academic semesters. Graduates receive their postsecondary diplomas and credit for completing all required in-school apprenticeship training. When students have acquired sufficient work experience, they are eligible to write the Certificate of Qualification examination. Conestoga has these programs in Tool and Die, General Machinist, Industrial Electrician, Cook-Culinary, Industrial Maintenance Mechanic and is rapidly expanding into other areas.

Apprenticeship Scholarship

Administered by Job Connect, this initiative is intended to support apprenticeship training and employment for youth who have left school early and require academic upgrading to meet the minimum academic entry requirements to register as apprentices in an apprenticeship program. These youth are eligible to receive a $1,000 scholarship if they:

- have completed their academic upgrading within one year to meet the minimum academic requirement for qualifying
- are registered as apprentices

Appendix 5

Mechanical Technician – Machine Tool Builder Integrator

(Co-op Diploma Apprenticeship)

This post-secondary program begins with 3 semesters, followed by a 56 week Co-op placement and finishes with a 20 week semester. The students are registered at the beginning of the program as an apprentice to a Consortium representing the industry. During the 56 week Co-op component the company they are with is eligible for the $5000.00 tax credits offered by the Federal and Provincial governments.

Program Description

This program offers a unique experience to concurrently complete an in-depth academic curriculum supplanted by a number of labs, shops and hands on experiences to support the design and production of components in a typical machining environment. The program will provide students with a Mechanical Technician Diploma – Machine Tool Builder Integrator the latest technological training, while offering the versatility of multiple entry and exit points. The program presents an individual with opportunities to pursue highly skilled occupations in demand by the precision machining and tool industries. The learning experience will be significantly enhanced by the opportunities to gain and reflect on as much practical experience as is feasible during the time in the program. While certain positions may require discrete knowledge at a higher level, the cluster of common skills, knowledge and attitudes essential to all employees in the mechanical technician field have been identified, and will be taught, tested, and reinforced

Machine-Tool Builders and Integrators build, assemble, and integrate parts and components on both stand-alone and multi-station automated processing and manufacturing systems. These automated systems are used in all sectors of manufacturing including assembly, processing, and packaging. A graduate of this technician program will be able to analyze job requirements and design the appropriate systems to build systems to ensure a quality product. Graduates will also gain knowledge in supporting technologies that influence machine building, and will have the additional skills allowing them to adapt to evolving technology.

This program will appeal to those who are attracted to modern manufacturing technologies and enjoy working with machines. The graduate of this program will have received comprehensive training which can result in an excellent opportunity to obtain a rewarding career in Ontario's manufacturing/processing industry. Specifically trained as a Mechanical Technician - Machine Tool Builder Integrator, the graduate will also be qualified for a number of areas in manufacturing and process machine building and repair from the design office, technical sales, production control, and quality control and assurance areas.

Appendix 6 **Basic Machine Operator**
(Co-op Program)

This existing Basic Machine Operator course could be modified to teach specific to the needs of the food processing industry and meet their needs for entry level operator, inspection, quality control and general labour positions. During the 16 week Co-op component the company they are with is eligible for the Co-op tax credits offered by Provincial governments.

About the Program
Students will gain a solid foundation in basic mechanical skills and will demonstrate achievement of vocational learning outcomes which relate to both mechanical engineering and manufacturing.

Program Facts
Length: 16-weeks inschool/16 weeks co-op.
Credential: Ontario College Certificate

- Ontario Secondary School Diploma (OSSD), OR equivalent, OR 19 years of age or older.
- Grade 11 Mathematics, C or U, or equivalent or Conestoga Preparatory Mathematics for Trades (MATH1420).
- Grade 11 Compulsory English, C or U, or equivalent or Conestoga Preparatory Communications for Trades (COMM1280).

Note:

- Students must be able to receive instruction, respond and research in the English language.
- Recommended courses include: Grade 11 or Grade 12 Technological Design or Manufacturing.

Admission Procedures

- Academic strength is calculated by averaging all submitted senior level secondary school marks or test results (or equivalent) **of the required subjects**.
- Ten (10) additional marks are added to each Advanced level, OAC, U or U/C course used in the calculation of academic strength.
- Twenty (20) additional marks are added to each post-secondary course used in the calculation of academic strength.

Courses	Hours
Mechanical Engineering Drawings/Layout	44
Preparatory Machines and Techniques	54
Machine Practice	240
Precision Measuring Instruments	15
Jigs and Fixtures Technical Data	15
Occupational Calculations	32

These courses could be modified to suit specific employer needs.

Graduate Opportunities
Upon successful completion of this concentrated 16-week program, graduates are prepared for entry level positions as machine operators, inspectors, expediters and general laborers familiar with an industrial machine shop environment.

Appendix 7. Industrial Electrical Technician Apprenticeship – Co-op Diploma

This post-secondary program begins with 2 semesters, followed by a 71 week Co-op placement and finishes with 2 semesters. The students are registered at the beginning of the program as an apprentice to a Consortium representing the industry. During the 71 week Co-op component the company they are with is eligible for the $5000.00 tax credits offered by the Federal and Provincial governments.

This standardized Ontario program offers a unique experience to concurrently complete an apprenticeship in-school curriculum, an apprenticeship co-op experience and an Electrical Technician Diploma, while offering the versatility of multiple entry and exit points. The program prepares an individual for the industry at a recognized technician and an advanced electrical apprentice level. There are two in-school sessions and one paid co-op work term session.
This program will give the student theoretical and practical experience on heavy electrical motors, controls, generators and transformers, along with their industrial applications. Power systems, industrial solid state controls, instrumentation, and programmable logic controllers will be studied, as well as safety standards and practices. The student will gain advanced knowledge of electrical theory and its application to a variety of practical situations, and will be well versed in a variety of skills such as troubleshooting electrical systems, and performing engineering tests on heavy electrical equipment and controls.

Program Courses

Level One
Electrical Code 1
Computer Applications
Electrical Prints 1 - Residential
Electronics 1
DC Fundamentals
Residential Installations
DC Motor Lab

Level Two
Electrical Code 2
Electrical Prints - Commercial
AC Fundamentals
Signal Shop
AC Motor Lab
Workplace Preparation
Instrumentation I

Level Three, Four, Five & Six – Work Term
72 Weeks
Entrepreneurship*
Elective: Liberal Studies*
(*Classes may be completed by distance through Continuing Education)

Level Seven
Electrical Code 3
Electrical Prints - Commercial/Industrial
Electronics 2
Digital Fundamentals
AC Power
Commercial Circuits
PLC 1

Level Eight
Electrical Code Electrical Prints – Industrial 4
3 Phase Power
Transformers
PLC 2
Fluid Power
Instrumentation 2

Work Term Capabilities

- Produce at rate comparable with a year 1 Apprentice utilizing testing and troubleshooting skills in areas such as motor winding and repair, quality control and electrical construction/maintenance
- Demonstrate computer skills in Windows, Microsoft Office and AutoCAD
- Conduct simple troubleshooting and repairs of electrical equipment
- Apply circuit measurement and analysis using both digital and analog meters
- Use standard test equipment to make accurate circuit measurements
- Assist with preventative maintenance
- Read and interpret drawings, plans and specifications for residential, commercial and industrial projects ensuring adherence to applicable codes and regulations
- Interpret and apply fundamentals of AC and DC circuits using meters, other diagnostic instruments and protective devices
- Apply principles of mathematics to solve problems in electrical and electronic theory
- Apply electronic theory to assist in generation, utilization and control of electrical power
- Apply essential safety procedures, regulations and safety standards related to electrical machinery and apparatus
- Dismantle, clean, lubricate, inspect, test and reassemble a wide variety of DC and AC electrical machinery and apparatus
- Use basic shop skills to assist in the repair of electrical machinery and apparatus
- Connect, test and regulate a variety of electrical machinery and apparatus
- Assist installing common fire alarm, communication and building automation systems
- Interpret and use instrumentation symbols and drawing
- Certified in Emergency First Aid and certified in CPR
- Familiar with generic WHMIS, lock-out and tag-out, shop hazards and fire emergency procedures

Appendix 8.

Manufacturing Leadership Certificate Program (MLCP) - course description

Supervisory Skills for Business and Industry

The successful supervisor needs a solid knowledge base, a wide range of specialized skills and the capacity to keep current. The various roles students are called upon to play require clear understanding of the organization and clear thinking about the tasks. Students must communicate effectively, handle customer relations, measure and report work appropriately and ensure compliance with complex government legislation. This course will help develop these skills and give an awareness of the multi-faceted approach to leadership demanded in the modern business environment. The following ten 3-hour modules in this course are:

1. Roles of the Supervisor within Management
2. The Design of your Organization
3. Continuous Tasks of the Supervisor
4. Recruitment & Retention
5. Problem Solving
6. Working as a Productive Unit
7. The Lines of Communication #1 - Verbal
8. The Lines of Communication #2 - Written
9. Critical Legislation for the Supervisor
10. Finding the Facts

Coaching and Developing People

The coaching and developing of people, in order to encourage their highest performance and ongoing learning, is a crucial component in today's work world. The roles of a coach and a facilitator require new skills to enhance the capabilities of their employees and to bring the best possible environment to the workplace. The skills of communication, coaching, delegation, motivation and dealing with conflict will be developed, together with an understanding of adult learning.

The following ten 3-hour modules in this course are:

1. Coaching and Communication Skills
2. The Coaching Model: Tools and Techniques
3. Leadership – Two Views
4. Empowerment
5. Delegation
6. Motivation
7. Performance Management
8. Conflict Resolution
9. Learning in the Workplace
10. Applications and Skill Building

Developing Effective Teams

The coaching and developing of people, in order to encourage their highest performance and ongoing learning, is a crucial component in today's work world. The roles of a coach and a facilitator require new skills to enhance the capabilities of their employees and to bring the best possible environment to the workplace. The skills of communication, coaching, delegation, motivation and dealing with conflict will be developed, together with an understanding of adult learning.

The following ten 3-hour modules in this course are:

1. Introduction to Leading Teams
2. Building Teams: The Basic Model
3. The Dynamics within Teams
4. Your Style Preference
5. Contracting: Internal and External
6. Problem Solving and Facilitating Tools
7. The Group Climate: Handling the Storms
8. The Team within the Organization
9. Managing Time
10. Applications, Evaluations and Celebrations

Continuous Improvement Process

On completion of this course, participants will have available a wide range of tools and techniques for the practical application of Continuous Improvement in their workplace. The material will cover the standard approaches in the quality movement; (e.g. 6-sigma, TQM), plus the shift to Lean Manufacturing and the ramifications to cost, inventory and scheduling. Project management will be introduced and the participants will undertake their own work-related project.

The following ten 3-hour modules in this course are:

1. What is the Continuous Improvement Philosophy?
2. The Continuous Improvement Cycle and the Cost of Quality
3. What's Required for Success?
4. What tools Do You Have?
5. Project Management
6. The World of 'Lean'
7. More Concepts for a 'Lean' World
8. Standards and Benchmarks
9. Case Studies
10. Projects Reports and New Beginnings

The Business of Tomorrow

There are two great pressures on manufacturing today; both related to change. One is the geopolitical, or global economy, the other is the expectations placed on each of us, as individuals, to cope with a very different workforce and a very dynamic workplace. This material covers the information that will help the supervisor deal with these issues and answer the questions that arise daily in the workplace. The course includes: implementing change, the impacts from global competitors, understanding the 'mosaic' workforce, committing to continuously learning and helping others to do the same.

The following ten 3-hour modules in this course are:

1. Dealing with Change
2. Globalization
3. Resilience: Protection in Chaotic Times
4. Managing Innovation on the Shop Floor
5. Multicultural Management
6. A Look in the Mirror…Knowing Yourself
7. Training and Lifelong Learning
8. Values and Ethics
9. Future Pull
10. Skill Building and Application Planning

Appendix 9.

The 3 A's of Leadership & Authority:
"Putting Supervisory Skills into Practice" - Loyalist Training and Development Centre

Loyalist Training and Development Centre has developed a number of supervisor courses that could easily be modified to meet the unique needs of the food processing sector. This particular course focuses on how a supervisor or manager leads individuals, teams and departments towards higher involvement and higher quality. This question is raised by many who realize that theory cannot replace practical skills when it comes to leading people. The focus of this training is to go past theory and into practice. Participants will gain new insights on the use and misuse of authority and discover and apply practical ways to use organizational authority to lead individuals and teams to a new level of contribution.

In this two day course participants will learn:
- about the natural approach to supervision
- about different types of organizations and the challenges to supervision in those contexts
- three skill sets that lead individuals and teams to more ownership of their work
- to read situations and discern behaviours they need to apply in order to lead individuals and teams to greater ownership of their work
- to develop consistent coaching skills that apply to everyday work settings
- to establish strategies that will lead teams and individuals to greater autonomy

Who should attend?
- Experienced front line supervisors
- New managers and front line supervisors
- Plant and manufacturing managers
- Team leaders and lead hands
- Human Resources Managers and in-house trainers

Benefits to Supervisors/Managers
- Provides practical coaching skills to managers and supervisors and team leaders
- Improves communication
- Reduces conflicts and frustration
- Improves teamwork
- Increases self commitment from their people

Benefits to Organizations
- Increases organizational responsiveness to employees, market and clients
- Drives fundamental change in a very practical way
- Equips for self analysis and development of a consistent strategy towards building and sustaining effective self directed teams
- Maintains adaptability to changing needs

Appendix 10. **Module 1 -** Introduction To Maintenance Management

GENERAL OBJECTIVES:

To introduce the participants to the latest concepts in cost effective maintenance management and to assist the learner in moving from the traditional maintenance paradigms and maintenance technologies and embrace the new technologies required competing in the global marketplace. Most topics will be addressed in detail in future modules.

MODULE 1
INTRODUCTION TO MAINTENANCE MANAGEMENT
Learning Objectives of Module 1

- Definition of Value Added Maintenance Activities & typical Industry Benchmarks
- Direct & Indirect benefits derived from managing the maintenance activity
- Preventative Maintenance
- Predictive & Proactive Maintenance
- Reliability Centred Maintenance
- Typical Maintenance Paradigms
- The Evolution of Maintenance
- Key Challenges facing maintenance today
- The Maintenance Maturity Grid

Module 2 - Production and Operations Management

GENERAL OBJECTIVES:

To present the students with a study of operations and production management with a view to giving them an understanding of production and operation methods and show how they can be applied to maintenance management. This will allow the student currently employed in a maintenance capacity to communicate more effectively with their production counterparts in the organization.

MODULE 2
PRODUCTION AND OPERATIONS MANAGEMENT
Learning Objectives of Module 2

On completion of the module, learners will have an understanding of:

- Time management methods
- The purpose of methods, motion and time study and how they impact upon the operations and production environment
- Production Planning and Control
- Production management methods
- Quality management methods
- Inventory control / material management
- Quality control in a maintenance environment
- Effective maintenance environment
- Linking maintenance and operations strategies through performance measurement

Module 5 Planned Maintenance Management

GENERAL OBJECTIVES:

On completion of this module, the learners will have a thorough understanding of the concepts and best practices used within the framework of Planned Maintenance Management.

MODULE 5
Planned Maintenance Management

Module 5 Learning Objectives

Students will examine and learn the following areas within the domain of Planned Maintenance Management:

- Overall Introduction & Overview of Planned Maintenance
- The facets of Reliability Centered Maintenance philosophy
- Introduce Condition Based Methods (CBM) into the maintenance equation
- Determine the different Levels of Failure
- Asset & Functional Failures
- Failure Modes and Effects Analysis (FMEA)
- Failure Consequences
- Maintenance Tasks
- Use of reliability, efficiency & criticality to determine suitable preventive maintenance programs
- Implementation
- Preventative Maintenance (PM) Tasks
- Development of Maintenance Tactics

Module 6 Introduction to Predictive Maintenance

GENERAL OBJECTIVES:

On completion of this module, you will have a thorough understanding of how predictive maintenance dovetails into the maintenance efforts. Topics discussed will include various types of predictive maintenance and condition-based maintenance technologies such as fault code analysis, wear particles analysis, NDT and ultrasonic detection, infrared thermography, and analysis or process data.

MODULE 6
Introduction to Predictive Maintenance

Objectives of Module 6

Participants will be introduced to predictive maintenance and will review the processes used to effectively implement predictive maintenance technologies. The following key steps will be identified:

- Establish need
- Determine Criticality
- Determine Maintenance Tactic
- Select Technologies
- Create Measurement Task
- Measure, Analyze & Trend
- Plan and Schedule Corrective Requests
- Review Work History
- Evaluate Program

Module 7 Computerized Maintenance - Management Systems – CMMS

GENERAL OBJECTIVES:

Students will understand the features and benefits of CMMS and develop an expertise in the selection, implementation and support of a CMMS package.

MODULE 7

Computerized Maintenance Management Systems

Learning Objectives of Module 7

On completion of the module, learners will understand:

- Overview of CMMS software and hardware needs, history and its role in enabling the work order process and asset management
- Development of a supporting business case based on the analysis of a plant or facility – review of work management, asset reliability and related decision making
- Development of the CMMS Functional and Technical Requirements
- Demonstrated expertise in the selection, implementation and support of a CMMS
- Development of the Integrated Technology Solution with the CMMS at the core and how to use data for maintenance decision making
- How a CMMS can be used to enable Program Driven Work and Asset Management
- Demonstrate the understanding of the Request for Proposal (RFP) process for a CMMS including conducting a Post Implementation Review

Appendix 11.

Diploma Program Proposal: *Food Safety* -
Loyalist College of Applied Arts and Technology

The diploma in Food Safety offers a curriculum based on three main themes relating directly to food safety management: Foundations of Science, Health and Safety, and Environmental Management. Components within each theme ensure a strong core of fundamental, science-based principles, complemented by a breadth of applied knowledge and technical skills applicable to food safety management. The curriculum will draw on key academic and skills-based components within each of the partnered disciplines to provide graduates with a broad range of theoretical and technical expertise with immediate applicability and value to any food-related organization or related oversight body. Moreover, knowledge and skills will be applied in a holistic framework, such that design or implementation of a practice(s) in one domain of a food industry is preceded by appropriate analysis, planning and training to safeguard food quality and safety. The program culminates with an undertaking by each student, in which they must apply the full depth and breadth of their knowledge and expertise to the development of an industry-specific HACCP plan and master HACCP document as part of a "HACCP team". Graduates of the Food Safety program will have a complementary balance of general scientific knowledge and industry-specific skills, producing an outstanding set of transferable skills: robust technical expertise in the lab, traditional and cutting-edge methodologies (including those common to the biosciences and food sciences), technical knowledge about a variety of occupational settings, effective oral and written communication skills, and leadership and teamwork skills. Because of the changing nature of trends in the food industry, and threats to food safety, adaptability of a graduate is essential to success in the field. Graduates will therefore have experience in applying their knowledge to framing questions, executing appropriate analyses, generating solutions, and making decisions within novel or unpredictable contexts.

Career Opportunities for Graduates of the Diploma in Food Safety Management:

Graduates of their program will possess the knowledge and skills required to perform a variety of food safety practices and services in private and public sector organizations, along the continuum from farm gate to consumer. These include HACCP planning and auditing, quality control and/or quality assurance, testing and analysis, inspection, water management, waste management, plant sanitation, policy analysis and development, client education and training, etc. Graduates will be well-prepared to use their knowledge about food safety in the supply chain in the face of changing demands and developments in food production, processing and manufacturing, quality assurance, domestic and international trade practices.

Appendix 12

Current Guelph Food Technology Centre Courses

Halal Foods: Opportunities & Certification

Lipids: Formulating with Healthy Fats

HACCP I: Documenting Your HACCP Prerequisite (GMP) Program

Food Safety & Traceability Symposium

HACCP II: Development of Your HACCP Plan

Traceability in the Seafood Sector (A Related Workshop to the Traceability Symposium)

Canadian Ingredient Labelling

Canadian Nutrition Labelling

HACCP IV: Validation & Verification of Your HACCP Program

HACCP V: Effective Auditing of Your HACCP Plan

Diploma in Food Hygiene & Safety

Microbiology III: Foodborne Pathogens

HACCP III: Train the Trainer

Supervision Skills for the Food Industry, Part 2 of 2

Canadian Food Regulations: Option 1 (Day One Only)

Canadian Food Regulations: Option 2 (Days 1 and 2 Together)

Certified Manager of Quality /Organizational Excellence (ASQ), Part 1 of 2

Food Security/Defence III: The Qualified Food Security Coordinator

Sweet Success: Formulating with Artificial Sweeteners and Sugar Alcohols

Least-Cost Formulation

ISO 22000 Food Safety Management Systems

Formulating with Fibre

HACCP: A Management Summary

International Sourcing of Ingredients & Food: Import Policies, Responsibilities & Traceability Standards

HACCP for On-Line Supervisors

HACCP V: Reassessing & Auditing Your HACCP Plan

Capturing Retail Market Share Through Distributors & Brokers

Gums, Starches and Stabilizers I: Chemistry & Functionality

Gums, Starches and Stabilizers II: Applications & Practical Considerations

Improving Productivity & Quality: Cost-Benefit Analysis & Return-On-Investment

The Organic Market: Regulations, Opportunities, & Challenges

Effective Communication: Improving Productivity & Accomplishing Successful Outcomes

Microbiology V : Listeria Control

Microbiology VI: Salmonella Control

Food Security/Defence II: Development of your Food Defense Policies & Procedures

Foreign Materials I: Investigation & Detection

Low-Sodium Product Reformulation: Meeting the Demand for Low-Sodium Alternatives

Culinology® 101 Workshop I: Fundamentals of Food Science for Chefs

Microbiology I: Practical Food Micro & Troubleshooting

Product Shelf-Life Determination

Statistical Process Control (SPC) for the Food Industry, Part 1 of 2

Statistical Process Control (SPC) for the Food Industry, Part 2 of 2

Problem Solving: Using Root Cause Analysis & Other Tools to Solve Food Safety & Quality Problems

Leading & Managing Successful Teams

Science of Sensory Evaluation

Introduction to Auditing: Managing the Audit Process at your Facility

Meat Processing: Advanced

Sensory Data Analysis

Formulating Health & Wellness Foods: The Next Generation

Cheesemaking Technology

Pasteurization: Concepts & Theory of Safe Operation

Implementing SQF Systems

Simulation Workshop: Responding to Crises: Managing Recalls, Product Withdrawals, Tampering and Unexpected Events

Auditing SQF Systems

Baking for Bakers I: Bread & Yeast-Leavened Products

Baking for Bakers II: Cakes, Cookies, Pastry & Chemically-Leavened Products

Microbiology IV: Sampling & Interpreting Results

Improving Production Operations: Development of a Sustainable Production Process

Food Security/Defence I: Passing the Food Security Section of your Food Safety Audit

Culinology® 101 Workshop III: Basics of Food Processing & Food Systems

Project Management

Design of Statistically Valid Sampling Plans

Food Safety for Maintenance Personnel

Certified HACCP Auditor (ASQ)

Appendix 13

SIEMENS

RE: Institute for Food Processing Technology in Ontario

Siemens Canada Limited is pleased to submit this preliminary letter of support to any higher education college institution that would become the host for an "Institute for Food Processing Technology in Ontario" project. This response articulates our interest in becoming a strategic partner with the college, the Alliance of Ontario Food Processors (AOFP) and the Ontario Food and Beverage Processing Industry and any other provincial government partners to develop a post secondary curriculum blueprint for Ontario's Agri-Food Industry by providing state-of-the-art, world class Siemens teaching technology for its Institute for Food Processing Technology. We are very interested in being a part of a multi-disciplinary collaborative research consortium that will bring together key stakeholders and work to develop a blueprint that will clearly articulate a path to develop programs including relevant technologies at the College level to address the need for skilled labour in the food processing industry. More specifically, to create a blueprint "that will lead to the development of the skilled trades and floor supervision required for the food and beverage processing sector."

Siemens AG (headquartered in Munich) is a global powerhouse in electrical engineering and electronics. The company has over 475,000 employees working to develop and manufacture products, design and install complex systems and projects, and tailor a wide range of services for individual requirements. Siemens provides innovative technologies and comprehensive know-how to benefit customers in over 190 countries. Founded 160 years ago, the company is active in the areas of Information and Communications, Automation and Control, Energy and Power, Transportation, Medical Solutions, and Lighting. Core solutions and technologies have been applied in the following industry sectors: Automotive, Chemicals, Pharmaceuticals, Glass, Food & Beverage, Oil & Gas, and Semi-conductors. In fiscal 2006 (ended September 30), Siemens had sales of €87.3 billion.

Our innovations create the foundations for sustained business growth and as such in 2006 we invested over EUR 5.2 billion; or 6.0% of our sales to our own research and development. We recognize that leading edge technologies that improve the Food & Beverage industry are only a result of investments in R & D that would support what is being proposed in this project.

As a global company, we also believe that business success should be combined with sound principles of environmental stewardship and corporate citizenship which are all essential parts of an interlocking whole. "Our ideas, technologies and activities help create a better world. We are committed to universal values, good corporate citizenship and a healthy environment."

Siemens has been a strong global supporter of education over the past 160 years of our company's history. Siemens equipment can not only be found in over 190 countries, but our educational support can be found on every continent: from South Africa to China, Brazil to Indonesia, and from the Netherlands to Canada. Siemens Canada has strongly supported Canadian post secondary educational institutions as we recognize that well trained graduates are the 'life blood' of Canada's future in both Manufacturing and Scientific Research Technology. Even at the school level, students' initiatives in scientific research can spawn developments in technology that are potentially relevant for Siemens.

In 2005, one-third of all Siemens' new hires had a university-level qualification. Of these, more than 70 percent were graduates in engineering, information technology, and the sciences. Given the impact that government education policymaking can have on our company, we engage actively in the education debate to share what we have learned from experience and offer ideas

and suggestions regarding the development of training and education programs, as well as actively support and participate in research initiatives with higher education institutions both at the university and college level.

The project discussed compliments Siemens' mission and goals of being a leading edge innovator, supporting and nurturing our future "life blood" through our investments in educational institutions, where these students become our customers future employees as well as employees of our own. Furthermore, increasing skills and competencies in Food & Beverage applications which this project addresses reinforces our commitment to our corporate principle of good corporate citizenship. We would like to be a strategic partner with the identified college by providing Siemens technology for its new Institute for Food & Beverage Technology.

As a partner, Siemens has the desire and commitment to make this vision a reality. Siemens' technology combined with our commitment to work with college to assist in the use of automation equipment in your course curriculum will ensure that they meet and exceed the development plans of the Institute and its strategic partners. Although we have not seen the specific details, the core strategy is one that would benefit the community and one which we would be interested in being involved as plans are further developed.

We have collaborated with several colleges, universities and Research Institutes in Canada and worldwide. We have actively conducted research together with these institutes as well as third party partners in joint initiatives, particularly as they complemented our own strategic initiatives. We have provided in many instances the bridge between these parties and the research innovation.

Siemens' delivers world-class capabilities to meet the challenges faced by this industry sector. We would leverage this expertise and knowledge and our ability to address the full range of process instrumentation and analytics requirements. Our world-wide expertise and extensive product portfolio combined with our commitment to work with the college to assist in the use of this equipment in your research will ensure that you meet and exceed the training and educational needs of this program and its students. As a key industry partner, Siemens reinforces our commitment to contributing to educational excellence.

With our participation, Siemens is offering to make a significant ***long-term*** investment with the college through the provision of both world-class food & beverage products and services to be defined as plans are further developed. Our proposal would take the form of in-kind donations including process automation equipment used in the industry sector as well as software, refreshed over an initial five years of operation of the equipment, training of graduate students and professors in the use of the equipment, and assistance in the development of course curriculum. Siemens subject matter experts (SMEs) will be available as required from time to time for further input and clarification during the delivery of the program.

Our proposal would also include scholarships in support of these certificate or degreed programs as well as offer our SMEs as key note speakers in symposiums or panel discussions directed to the Food & Beverage industry.

It is our considered opinion, that this project is something that both the AOFP and Minister of Agriculture and the Province of Ontario should support.

We are pleased to have the opportunity to participate in this exciting project.

Sincerely,

Mary Krauel **Jeff Malpass**

Appendix 14

Process Operator Food Manufacturing		
Course Content	**Duration Hours/Days**	**Developmental Status**
Food Safety & Security	**80**	
GMP		
Food Safety – Documented Programs		
Sanitation/Pest Control/Chemical Control		
Traceability/Product Holds/Crisis Management		
Product Information and Consumer Awareness		
Process Control Program		
Incoming Material and Receiving Program		
Packaging Process Control		
Storage and Distribution		
Employee Training and Re-Training Requirements		
Facility/Equipment Design		
Record/Document Control		
Food Safety when performing maintenance functions		
Food Safety Auditing Skills		
Laboratory Skills		
Food Defense		
Roles and Responsibilities (Government, Customer, third party audit)		
Computer Skills	**7.0**	
Intro to Word		
Intro to Excel		
Electrical and Instrumentation	**94.0**	
Electrical Safe Work Practices		
Trouble Shooting		
Phase 1 - Basic Electrical Theory		
Phase 2 - Electrical Machines and Controls		
Phase 3 - Automatic System Control (AC and DC Drives		
Phase 4 – PLC Control Systems Application		
Phase 5 -Control Logix Basic Training		
Instrumentation Systems		
Instrumentation and Digital Control Systems		
Safety Management	**24.0**	
Safety Leadership		
Risk Assessment		
Investigation and Auditing Skills Safety – General Principals		

Course Content	Duration Hours/Days	Developmental Status
Mechanical Skills	**40.0**	
Tools and Equipment		
Fundamentals of Pneumatics		
Fundamentals of Hydraulics		
Work Order Management		
Lubrication Fundamentals		
Equipment Failure Analysis		
Steam Fundamentals in Food Processing		
Energy Management		
Mechanical Operator Preventative Maintenance		
Continuous Quality Improvement	**40.0**	
Problem Solving Techniques		
Statistical Process Control		
Intro. To Lean Concepts		
Environmental	**15.0**	
Emergency Response/Spill Management		
Regulated Waste Management & Disposal		
Total Hours	**300**	

Appendix 15.

honeydesign marketing & communications
Strategic. Creative. Results

Communications Plan: Feeding the Future of Ontario

Situation Analysis

The Ontario Food Processing Sector currently faces an industry-debilitating labour shortage. The need for skilled labour in the food processing industry has been identified in government studies and first-hand in processing facilities across the province. The industry generates over $32.5 billion in shipments annually, employs more than 110,000 people and is the second largest manufacturing sector in terms of its value to the provincial economy.

In general, the province of Ontario has experienced and identified a shortage of skilled trade workers due to cultural biases that favour university education over college and apprenticeships and the retirement of many current workers which will continue over the next several years. More recently, the economy boom in Alberta has attracted many out-of-province trades people who have migrated to the high-salaries and worker-centric environment in that province.

Canadian manufacturing sectors, including the Food Processing industry, have also been negatively impacted by the rise of the Canadian dollar. With the Canadian dollar rising in value, to almost par with the US dollar, Canadian producers are faced with stiffer foreign competition at home, as the cost of foreign imports becomes cheaper. Conversely, Canadian exports become more expensive for other countries to purchase, as foreign importers must exchange more of their currencies in order to buy Canadian products.

Specific issues that the Food Processing industry faces include a lack of public profile and limited awareness; negative associations with food processing practices; the adoption of modern technology; and limited available post-secondary training and/or apprenticeships for industry specific skills.

The Alliance of Ontario Food Processors intends to initiate an education and awareness campaign to address the impending labour shortages and attract new workers to skilled trades within the sector. The development and implementation of a comprehensive marketing campaign will support and prelude the creation of an Institute for Food Processing Technology in Ontario.

Research Methodology

Focus Groups

Focus Group: Secondary School and College Students, Counselors and Administration

- Students associate the industry with slaughter houses, food preparation, packaging food, food services, restaurants (chef), factory work and cheese processing"

Comments of note:

"Good wages offsets a boring job as long as there are chances to move up"
~ Student

"I want to work for a company that is willing to invest in me"
~ Student

"Kids need to sell the benefits of the industry to other kids."
~ Administration

"Is it seen as a job or a career opportunity?"
~ Administration

Focus Group: Skilled Workers and Supervisors

- Skilled Workers note job variety, clean environment, daily challenge, hours (frequency and flexibility), 1 to 1 contact with Management, steady job with steady pay, and competitive wages as positives

Comments of note:

"If I can be certified I'd do the training on my own time"
~ Skilled Worker

"The company should provide us with time and opportunity [for additional training]"
~ Supervisor

SWOT Analysis

Strengths

• the industry provides plenty of opportunities for employment
• it provides for a good standard of living
• it is a secure, stable industry with less redundancy than other sectors
• there are opportunities for advancement
• most of it is centred in Ontario where the highest population lies

Weaknesses

• lack of public perception of the industry
• when a perception exists it is of dirty, menial work
• internally the industry has not set up HR training to ensure retention and advancement?
• no established industry method of recruitment or retention
• no identified specific educational centre(s) of excellence for sector specific training

Opportunities

• delivering a cohesive message about job opportunities
• working with post-secondary institutions to create curriculum
• apprenticeship opportunities provide an introduction to attract and retain
• providing education to help advance and attract supervisor-quality employees
• new Canadians see the trades as attractive careers offering financial stability

Threats

• budget needs to be established to properly position the marketing message
• Institute needs to be established to provide a sustainable industry authority
• diversity within the industry provides a communications challenge

Target Audiences

Primary

1. Students primarily in grades 11 and 12 as well as Students in grades 7 through 10

Secondary

1. Educators (including Guidance Councilors, Instructors and Administration)
2. Ontario General Public (including parents, industry workers)

Tertiary

1. New Canadians

Primary Audience Characteristics (from Focus Groups previously conducted)

High school and College-aged students are influenced by family, peers and advertising/awareness campaigns in choosing an area of study and/or career path. On-line research plays a large role in their understanding of available options. High school and College-aged students are very computer savvy and use the Internet regularly to research, browse media and interact with one another. Guidance counselors were of little influence, being unaware of sector opportunities.

High school and College-aged students think of the Food Processing sector as dirty, boring and repetitive work, without opportunity for advancement. This opinion is based on lacking knowledge and exposure to the industry.

High school and College-aged students consider educational co-op opportunities, job security; good wages/earning potential; working conditions; and opportunities for advancement; influential factors when considering career paths.

Communications Objectives

Increase public awareness of the Food Processing Industry as a stable, safe and viable career choice in order to alleviate immediate and long-term labour-shortage concerns.

1. Create an appealing, innovative and exciting brand identity for the Food Processing Industry
2. Inform high school and college students of Food Processing Industry career opportunities
3. Establish a positive reputation for the Food Processing Industry
4. Participate in opportunities to attract and retain skilled workers to the Food Processing Industry

Positioning / Key Messages

"The food processing industry isn't dirty and boring. I do something different everyday; I love the challenge and it feels good knowing that my work helps feed people, like my next door neighbours."

"Did you know that Food Processing is Ontario's 2nd largest industry, and it's growing? There are all kinds of jobs that put food on tables all over the place."

"Sure, I work on a production line now, but I've got a plan. In the next few years I'll be moving up, from floor leader, to Plant manager. One day I hope to be the Director of Operations."

"The food processing industry supports Ontario. Not just by putting food on tables across the province, it generates over $32 billion dollars a year. That's no small potatoes."

"Want a career you can really sink your teeth into? The food processing industry has a wide variety of opportunities. With on the job training in a safe, clean environment, it's like a smorgasbord of career options - dig in!"

A career in the food processing industry means financial stability and opportunities for advancement. A shortage of skilled trades people means you will be a highly valued member of an important part of our economy that is sustainable.

Make a smart choice – choose a career in food processing

Food for Thought – Have you considered working in the Food Processing Industry?

Grow with us – choose a career in Food Processing

Help feed Ontarians

Recommendations / Communications Tactics

1. Brand Identity - $5,000 - $10,000
A brand identity needs to be a call-to-action that all communications tactics can support and build on. Suggested themes are:

Hungry for a great career?
Enjoy a career for life
Eat up our opportunities
Smart Move. Help create our food.
Feed your life.
Feed your career.
Eat up our opportunities.

A brand identity's tactics would include a logo, Guidelines for Use and placement and application to media according to targeted audience groups.

2. Website - $4,500 - $12,000
Integral for reaching primary audience and appealing to media preference

3. Brochure - $3,500 - $6,000
3 versions modified according to target audience

4. Media Relations - $3,000 - $7,500
Targeted press releases in support of AOFP announcements, industry trends, and campaign successes

5. Out-of-home Advertising - $1,500 - $6,500
Outdoor, Transit, Campus

6. Promotional DVD Production – Virtual Tour - $10,000 - $25,000
Video interviews with a cross-section of workers in exciting careers to feature on CD in media kits, at job fairs, on televisions (if there is budget) and on web site

Regional Education and Industry Campaign

Program - $125,000 - $ 195,000 (dependent on number of sites visited over the two years)
To directly profile the industry with secondary students and guidance teachers across the Province. An educator would organize the visit and take a regional industry representative with them to local career days, regional guidance meetings and targeted schools. This road show will enable the industry to gain exposure, showcase industry success stories, and provide students, teachers and job searchers the opportunity to interact with members of the sector.

1. TradeShow Booth - $3,500 - $10,000

2. Branded Promotional Item - $20,000 - $30,000 (based on 5,000 items)
Food-related…cookies/mugs/swiss army knife (knife and fork)/water bottle/etc.

3. Media Relations - $3,000 - $7,500
To support community appearances / event participation and facilitate interview opportunities

4. Spokespeople/Participant Identification

5. Event/Opportunities Identification