

Garven & Associates

Management Consultants

Western Economic Partnership Agreements:

Final Program Evaluation

–Final Report –

Prepared For:

Western Economic Diversification

Prepared By:

Garven & Associates

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Final Program Evaluation
–Final Report –

Table of Contents

	<u>Page</u>
Executive Summary	i
Recommendations for Consideration	ix
1.0 Introduction	1
2.0 Objectives of the Evaluation	2
3.0 Evaluation Methodology	3
4.0 Response to Evaluation Questions	7
4.1 Relevance	8
4.2 Success.....	18
4.3 Cost Effectiveness	26
5.0 Comparative Program Analysis	35
5.1 Relevant Economic Development Programs	35
5.2 Comparison of Program Outputs	40
6.0 Sector/Third-Party Interviews	44
7.0 Case Studies	47
7.1 Fuel Cells Canada - British Columbia.....	50
7.2 Bison Meat Quality Research - Alberta.....	61
7.3 George W. Govier Centre (Fluid and Slurry Transport Centre) - Alberta	71
7.4 National Nuclear Magnetic Resonance Centre - NANUC (U of A NMR Project)	77
7.5 Centre for Social Entrepreneurship - Alberta.....	84
7.6 University of Regina/Regina Research Park Project Cluster - Saskatchewan.....	92
7.7 St. Boniface Research Centre: Filmless Radiology - Manitoba.....	110
7.8 Gimli Harbourfront Expansion.....	116
7.9 North End Renewal Project: SEED Winnipeg Inc - Manitoba.....	122
7.10 St. Boniface General Hospital Centre for Health Research on Aging - Manitoba	130
8.0 Conclusions and Recommendations	137
8.1 Conclusions.....	137
8.2 Recommendations for Consideration	139
Appendix 1 - WEPA Project Feedback Form	
Appendix 2 – Interviews with Management and Administration – Response Summary	

List of Tables and Figures

	<u>Page</u>
Figure 4.1	Relative Importance of WEPA Funding to Project Proponents 13
Figure 4.2	WD Program Priorities..... 15
Table 4.3	Direct Impacts and Forecasted Impacts of WEPA Funding 19
Figure 4.5	Proponent Satisfaction with WEPA Administrative Functions 28
Table 5.1	Federal-Provincial Subsidiary Agreements (1978-82)..... 37
Figure 5.2	Government Program Benefit Continuum..... 41
Table 5.3	Factors Influencing Program Shifts 42
Figure 5.4	Timing of Federal-Provincial Agreements in Relationship to Unemployment Rates 42
Table 5.5	WEPA Characteristics Compared to Past Federal-Provincial Agreements..... 43
Table 6.1	Sector/Industry-Specific Interview Respondents 44
Figure 7.1	Funding Structure 55
Table 7.2	Activities and Timelines 56
Table 7.3	Project Funding..... 63
Table 7.4	Activities and Timelines 64
Table 7.5	Project Funding..... 73
Table 7.6	Activities and Timelines 74
Table 7.7	Project Funding..... 79
Table 7.8	Activities and Timelines 80
Table 7.9	Project Funding..... 87
Table 7.10	Activities and Timelines 88
Table 7.11	Capital Costs, Energy and Environment Project Cluster 99
Table 7.12	Activities and Timelines 101
Table 7.13	Project Funding..... 112
Table 7.14	Activities and Timelines 112
Table 7.15	Project Funding..... 118
Table 7.16	Project Timelines 119
Figure 7.17	North End Community Renewal Corporation Goals 123
Table 7.18	Project Funding..... 124
Table 7.19	Project Timelines 125
Table 7.20	NECRC Board of Directors 126
Table 7.21	Project Funding Project Costs 131
Table 7.22	Project Timelines 132
Figure 7.23	Research Groups 133

EXECUTIVE SUMMARY

Introduction

Since 1974, federal/provincial cooperative development agreements have been a key element of federal support in the area of regional economic development within western Canada. Historically, these programs have been ratified as General Development Agreements (GDAs) and Economic Regional Development Agreements (ERDAs). In recent years, these economic development agreements have been delivered and managed under the umbrella of Western Economic Partnership Agreements (WEPAs).

With a total federal budget of \$80 million over five years, and matching provincial contributions of approximately \$20 million per province, the most recently negotiated WEPAs have been specifically designed to address federal and provincial economic development priorities.

Now that the full term of Federal/Provincial WEPAs has come to a conclusion, there is a need to describe and quantify the success of the program through a final evaluation. The purpose of this evaluation project is to provide senior management with an independent examination and assessment of WEPAs, advising on their rationale, success and effectiveness.

- Do WEPAs continue to be consistent with departmental and government-wide priorities, and do the provincially based programs realistically address a need? (Rationale)
- Have WEPAs been effective in meeting their objectives; within budget, and without unwanted outcomes? (Success)
- Are the most appropriate and efficient means being used to achieve WEPA's objectives, relative to alternative design and delivery approaches? (Effectiveness)

Economic development programs have evolved over the past three decades.

The second generation of WEPA has concluded ...

... there is a need to understand whether relevance, success, and effectiveness has been achieved.

The purpose of this final program evaluation is to identify how well the program has met, and continues to meet, its planned goals and targets.

Program Description

Recognizing the unique characteristics of each province, WEPAs are tailored to regional needs and designed to enhance existing strengths. WEPAs provide a broad framework of operation, while at the same time, WEPAs build on national and provincial economic development priorities and policies. WEPAs have been established to achieve cooperation in realizing the economic and regional development potential of each of the western provinces. WEPAs are jointly managed by federal and provincial governments.

WEPAs represent flexible economic development between federal and provincial programs ...

The shared federal/provincial purpose for all WEPAs is to accomplish the following:

- To encourage the economic and regional development of each province using complementary and focused efforts, as well as improved governmental consultations; and
- To provide for mechanisms to achieve greater federal/provincial cooperation and more effective coordination of activities related to economic development in each province.

... designed to complement existing programs ...

... and to enhance federal/provincial cooperation.

Separate Western Economic Partnership Agreements have been established in each of the four western provinces. The ratification dates for these Agreements have varied from one province to another. Manitoba, Saskatchewan and Alberta ratified in 1997/98. British Columbia finalized their Agreement within the 2000/2001 fiscal year.

Evaluation Methodology

The methodology that was used to complete the final evaluation of the Western Economic Partnership Agreement followed a standard set of evaluation steps that are commonly used when conducting studies for federal/provincial agreements. The WEPA Evaluation Framework was used as a basis for the evaluation. Each of the questions, in the three separate categories of Rationale, Success and Effectiveness, has been addressed in sequence.

To collect program information and appropriate data, several evaluation activities have been conducted:

- program file review
- on-site project file reviews
- program manager, administrator and policy interviews
- third-party stakeholder interviews
- broad-based, on-line, proponent survey
- in-depth project case studies
- comparative program analysis

In excess of sixty (60) interviews have been completed during the data collection phase of the work. This represents managers, administrators, third-party sector representatives and project proponents. A large sample of project files has been reviewed along with program documentation and legislative agreements. A proponent survey response rate of 52% of the funded projects, representing 58% of WEPA investments was realized. This final program evaluation document represents a comprehensive analysis of the WEPA initiative in the four western provinces.

When conducting evaluation studies, Garven & Associates adheres to the principles and guidelines that have been established by the Treasury Board of Canada. By following these common principles, a useful and practical evaluation can be completed which will provide important feedback to the program managers and administrators. During final evaluation, the primary effort is applied to three important evaluation issues; Rationale, Success and Effectiveness.

Does Strong Program Rationale Exist?

WEPA has been established on strong rationale. There continues to be a need for a program that is designed to advance specific sectors, emerging research, economic development and community development throughout western Canada. WEPAs are intended to support the work of each of the western provinces as they explore ways to enhance economic and community development. As a flexible economic development tool, WEPAs are able to respond to the priorities and directions that have been identified in each of the provinces. These priorities range from

WEPA continues to be relevant in meeting federal and provincial economic development goals.

technology development to medical research; from tourism to agricultural markets.

A second goal of the WEPA program is to build cooperative, collaborative working relationships between all levels of government. A coordinated approach is required to maximize the effectiveness of both human and financial resources without overlap and duplication. Analysis of interview results indicates that a good working relationship has been established in each province. Governments continue to build on the quality of these relationships to initiate strategic projects that are being funded through other financial programs and resources outside of WEPA.

Have WEPAs Operated Effectively?

The WEPA initiative in each province has been administered jointly by the federal department of Western Economic Diversification and the corresponding provincial departments of economic development.

Effectiveness has been achieved through low administrative costs.

The federal administration costs of WEPA are allocated within the core WD budget. As a result, one (or less) full-time equivalent position per year has been allocated to WEPA administration in each province. The provinces have designated a similar level of manpower. This administrative model has allowed WEPAs to operate efficiently.

It is important to note that the managerial functions of project follow-up, monitoring, and evaluation are necessarily compromised as a result of minimizing incremental human resource time. Additional human resource time and administrative budgets are required to track program effectiveness, outcomes, and impact.

Have WEPAs Been Successful?

Although it is early in the life of the Agreements and indicators of success were not initially defined, it is possible to identify early signs of program success.

- Survey results have demonstrated that there is a high level of client satisfaction with the overall implementation of the WEPA program.

Although early in the life of many projects, success factors are evident.

- WEPAs in each province have effectively leveraged additional financial resources from the private sector and from other government resources. Project proponents forecast a significant level of private sector investment in their projects in the future.
- Nearly \$500 million of capital has been invested in buildings and equipment and projects have created over 1,300 full-time jobs. It is reported that over 120 new businesses have been generated from WEPA funded projects.

WEPA funding has been instrumental in advancing projects that would not have otherwise moved forward and it has sped the progress of numerous economic and community development projects in western Canada.

As a flexible economic development tool, WEPA has been effective in supporting a broad base of projects within identified provincial and federal priority areas. WEPAs are structured in a manner that makes it possible to support complex research and development as well as community generated economic development.

Assessment Limitations

The ability to effectively document and quantify the effectiveness and success of WEPAs has been compromised for the following reasons:

1. Performance measures and indicators of success were not established at the outset of the WEPA initiative and, therefore, the targets and benchmarks required to effectively measure success are not available.
2. WEPAs have been operating in most provinces for five years (with the exception of B.C.), however, many of the selected projects have not had a full five-year term to achieve goals and objectives. Therefore, it is too early in the life of most projects to begin the process of quantifying the impacts and effects

Conclusions

The purpose of this evaluation is to answer three broad based evaluation questions. These questions are identified below with our conclusion or assessment based on our evaluation.

Do WEPAs continue to be consistent with departmental and government-wide priorities and do the provincially based programs realistically address a need?

Conclusion #1

WEPAs have several important attributes, such as building co-operation and working relationships between federal and western provincial governments, flexibility, efficiency of administration and early indication of successful projects.

Conclusion #2

This most recent WEPA ending March 31, 2001 is out of step with the federal government's present emphasis on "managing for results". This policy identifies that the prime responsibility of public service managers is to define anticipated results, continuously focus attention toward results achievement, measure performance regularly, and learn and adjust to improve efficiency and effectiveness. WEPAs have focused on project selection, and implementation. Expected results, and methods to monitor outputs and identify results, are missing. In order to ensure that current policy is adhered to, both human resources and related budget will be needed.

Conclusion #3

With respect to the identification of need, our review has found evidence that the program addresses several needs. However, specific needs have not been identified, documented, and prioritized in advance and needs have not been considered using the direct input from stakeholders. Rather, the needs have been addressed on the basis of government knowledge of stakeholder requirements.

Have WEPA's been effective in meeting their objectives; within budget, and without unwanted outcomes?

Conclusion #4

WEPA's have been effective at meeting overall program objectives, within budget and with low administrative cost. No unwanted outcomes have been identified.

Conclusion #5

Additional human resources would allow for greater project monitoring and follow-up.

Are the most appropriate and efficient means being used to achieve WEPA's objectives, relative to alternative design and delivery approaches?

Conclusion #6

WEPA's represent a major change and shift along a continuum from past federal/provincial development programs. WEPA's focus primarily on indirect public benefits with projects sourced by government officials. By nature the impacts tend to be intangible and are difficult to measure reliably. With the limited emphasis on results generated by WEPA funding, it is difficult to judge whether WEPA's are the most appropriate and efficient means to achieve development objectives relative to alternative design and delivery approaches.

RECOMMENDATIONS FOR CONSIDERATION

The WEPA agreements have been useful, effective and successful tools for fostering federal/provincial partnerships and diversification of the western Canadian economy. Recommendations arising from the final evaluation of WEPAs can have direct application to the design and implementation of similar WEPA type agreements in the future.

The recommendations for consideration flow from the various avenues of data collection, research and analysis conducted during the evaluation.

Recommendation 1

Conduct broad-based consultations with government and industry stakeholders on economic development and diversification needs and priorities prior to implementation of future WEPA type agreements.

Rationale:

Many successful approaches to economic development and diversification in democratic societies involve public/private partnerships. In Canada, both levels of government cooperating, plus involvement of stakeholders equals successful economic development.

Interviews with sector representatives confirmed and emphasized the importance of consultation with key stakeholders on future strategic needs and priorities. Information on stakeholder needs may be available from other consultation processes (e.g., budget consultations, etc.) however, information derived from such processes is often too general for program design purposes. To achieve the best program design it is important to conduct targeted consultations. The purpose of consultations is to receive input and feedback from specific key stakeholder groups and organizations likely to need support to achieve their economic growth goals.

Such consultations should be held during the design and development phase for any new agreements. Consultations will help foster a better understanding by stakeholders of planned western economic diversification direction and proposed tools for fostering economic development and improved partnerships. Involvement of stakeholders will increase the relevancy of future WEPA style initiatives and help to foster stakeholder buy-in and cooperation.

Recommendation 2

WEPA style initiatives should, in the future, consider moving away from a project-by-project approach to a strategically targeted effort that focuses on advancement of a few key priority investments.

Rationale:

With several notable exceptions (e.g., fuel cells in British Columbia, health research facilities in Manitoba), WEPA spending was devoted to a wide range of different kinds of projects across western Canada. This was possible because WEPAs have embraced a broad-based definition of economic development that includes education, research and development, healthcare, etc.

In future, agreements designed to address issues of economic development and diversification should document and define the concepts as precisely as possible. What are the desired outcomes of economic development and diversification? Is it incremental employment, increased value added economic activity, new private sector investment, establishment of new industries, new research and development capacity, etc? Answering these questions will help to define the meaning of “economic development and diversification” and result in investments in fewer, more strategic initiatives.

Recommendation 3

Establish a common set of federal/provincial implementation procedures and protocols to ensure greater consistency in implementation of future WEPA type initiatives across western Canada.

Rationale:

Common implementation procedures should include delivery mechanisms, eligibility criteria, rating and selection factors, project assessment tools, and due diligence procedures.

There was inconsistency in the use of project eligibility and selection criteria across the four western provinces. Part of the difficulty of not using consistent eligibility criteria and rating systems is the risk of inadequate rationale for decisions and inconsistencies in decisions from province to province.

Recommendation 4

Develop and follow a detailed communications plan to guide a coherent and strengthened approach to communications, and visibility, with respect to future WEPA type initiatives.

Rationale:

There were strong indications of inconsistencies in the preferred WEPA profile across all western provinces, and the desire to share information with the public about WEPA investments.

Interviews with management officials confirms that WEPAs were not intended for broad, proposal-based access. There was a preference to maintain a relatively targeted approach to WEPA programming. It was felt that a broad-based appeal for proposals would lead to many requests for funding assistance that could not be met within the limited financial resources available.

At the same time, federal visibility requirements necessitated public announcements of new WEPA project investments that had the effect of drawing attention to the existence of WEPAs. Officials acknowledge receiving many calls from potential clients, after project announcements, requesting information about WEPA funding availability.

The best method of ensuring that all aspects of communications are handled consistently is the use of a coordinated communications plan, with clear communications objectives and periodic measurement of effectiveness of communications activities. This tool should be used during the implementation of any new agreements. More strategic investment in WEPA agreements in the future would facilitate creation of a more coherent communications plan.

Recommendation 5

Utilize a results-based management approach to future WEPA project implementation, including the use of reliable performance measures and corresponding data collection systems.

Rationale:

Prior to implementation, a program framework needs to be developed that will identify:

1. Clearly stated needs to be filled by the program (based on the consultation results from Recommendation 1).
2. Identification of program successes.
3. Performance measures and indicators of success.
4. Methods of data collection.
5. Responsibilities for data collection by applicants, program managers and program evaluators.

Project applicants would be required to track outputs and reliable impact data as part of the contract requirements.

There will be additional costs to collect suitable data in order to effectively measure results and performance. Program funds will need to be allocated for this expense. However, the return on investment in data collection is more reliable information on the impact and success of the program (results). There is also a return from being better able to plan future projects that will provide the greatest return on public investment. Private sector spin-off investment and incremental employment numbers are examples of the types of data that could be collected more frequently and consistently to measure performance.

Use of performance indicators to measure impact and effectiveness should be a central part of the evaluation framework approved by the federal Treasury Board for a new WEPA type initiative. These indicators should be practical, useful tools that project proponents and program managers can use to measure progress over the longer term in relation to goals and objectives.

1.0 INTRODUCTION

Economic development is a shared responsibility and a goal of both the federal and provincial governments. Since 1974, one of the main forms of federal support in the area of regional economic development in western Canada has been through federal/provincial cooperative development agreements. Although the titles, principle methods and total budgets of these agreements have changed over the years, the overall objective has remained the same: “to promote federal/provincial cooperation in regional economic development in western Canada.”

In recent years, development agreements have taken the form of Western Economic Partnership Agreements (WEPAs). Individual WEPA initiatives have been established in each of the western provinces. Although the goals and objectives are nearly identical, the individual nature of the agreements provides an opportunity for each of the western provinces to focus on provincially identified priorities. WEPAs are designed to be a flexible economic and community development tool that are responsive to evolving needs.

The shared federal/provincial purpose for all WEPAs is to accomplish the following:

1. To encourage the economic and regional development of each province using complementary and focused efforts, as well as improved governmental consultations, and
2. To provide for mechanisms to achieve greater federal/provincial cooperation and more effective coordination of activities related to economic development in each province.

Within the first five-year agreement, WEPAs address both federal and provincial economic development priorities. Canada’s federal government identified four pan-western areas that would benefit from greater investment: forestry, communications, tourism and mineral development. The most recent, renewed WEPAs identified specific priority areas within each province.

- | | |
|------------------|---|
| British Columbia | - Fuel Cell Development |
| | - Innovation, information technology and oceans development |
| | - Regional economic development and diversification |

- | | |
|--------------|--|
| Alberta | <ul style="list-style-type: none">- Technology development- Innovation Infrastructure- Community Development- Research and Development- Aboriginal Development |
| Saskatchewan | <ul style="list-style-type: none">- Economic Infrastructure- Tourism Infrastructure- Export and Marketing Initiatives- Rural and Northern Economic Development- Strategic Project Assessment |
| Manitoba | <ul style="list-style-type: none">- Business Development- Economic Innovation- Regional Strategic Priorities- Innovative Economic Development Studies |

Numerous projects have been developed and selected that address one or more of the federal and provincial priority areas.

The Western Economic Partnership Agreement has a total federal budget of \$80 million equally divided amongst the four provinces. The provincial governments match the federal resources with \$20 million each. WEPAs are jointly administered and managed by provincial and federal representatives. The federal commitment is managed by Western Economic Diversification (WD).

Now, after five years, the WEPA initiative has reached its conclusion and there is a desire to understand the effectiveness and impact of the program on economic development within each of the provinces.

2.0 OBJECTIVES OF THE EVALUATION

The purpose of a final evaluation is to identify how well the program has met, and continues to meet, its planned goals and targets. This final evaluation has been designed to provide senior managers and policy makers with an independent examination and assessment of the WEPAs, advising on their relevance, success and cost-effectiveness.

Final evaluation will consider a full range of issues as outlined in the Evaluation Framework. Treasury Board of Canada policies and standards will be utilized to assess the evaluation questions that have been posed. In general, the following questions have been considered:

1. Do WEPAs continue to be consistent with departmental and government-wide priorities and do the provincially based programs realistically address an actual need?
 - Are WEPAs still needed for current government policy, even assuming that they are producing as expected?
 - Do WEPAs continue to be accurately focused on the problem or issue that they are addressing?
 - Are the WEPA mandate and objectives adequately stated?
2. Have WEPAs been effective in meeting their objectives within budget and without unwanted outcomes?
 - Has the program achieved what was expected?
 - What has happened as a result of the program, both intended and unintended?
3. Are the most appropriate and efficient means being used to achieve WEPA's objectives, relative to alternative design and delivery approaches?

3.0 EVALUATION METHODOLOGY

The methodology for this final evaluation project was designed to utilize a varied set of data sources. Through analysis of these sources, comprehensive and reliable information has been collected in order to address each of the evaluation issues outlined within the Framework.

Review of Program Documents

Garven & Associates began the final evaluation process by reviewing each of the provincial Agreements along with other relevant program documentation (mid-term evaluations, project authorities, project selection criteria, internal priority setting documents, etc.). The background review provided a foundation for a greater understanding of each of the provincial agreements.

Proponent Survey

Each of the groups (proponents) that received WEPA funding support were contacted to complete an impact assessment survey. The survey was administered on-line which allowed for both transmission and return of the survey via e-mail. The survey was designed to focus on project objectives and outcomes. Proponents were asked to quantify the results of their projects wherever possible. In addition, proponent satisfaction levels with WEPA administration were tested.

The survey was conducted in February and March, 2002. The survey was administered in three stages; 1) transmission of the survey (in both French and English), 2) a completion reminder was e-mailed close to the return deadline, and 3) a follow-up telephone contact was made to encourage participation in the survey.

A 52% response rate was achieved overall, representing a total of 58% of the financial resources that were spent in the four provincial WEPA initiatives. This excellent response rate ensures a very high level of reliability in the survey results.

For complete and comprehensive survey results, please refer to Appendix 1 of this report.

Managerial and Administrative Interviews

Garven & Associates' consulting staff traveled to each of the provinces to interview federal and provincial representatives. Interviews were conducted with officials who were responsible for policy and priority development, project selection, program administration and financial management. For a complete documentation of the interview results, please refer to Appendix 2.

Project File Review

A large sample of project files was selected in each of the provinces for in-depth review. The files were examined to track funding decisions, background and due diligence research, reporting procedures, payment practices, follow-up procedures, communications, etc.

Third-Party, Sector Specific Interviews

In order to better understand the impact of WEPA funding, a group of third-party, sector specialists were chosen for interview. Wherever possible, the specialists were chosen from outside of the federal and provincial government departments that were responsible for the administration of WEPA programming. The intent of these interviews was to examine, from an external perspective, the value, impact and success of WEPA spending.

A total of fifteen specialists were chosen representing different priority areas. The specialists were distributed across all four western provinces. (Refer to Section 6.0.)

Case Study Analysis

In order to track the progress and impact of several specific WEPA funded projects, Garven & Associates, in consultation with each of the provinces, selected a number of projects for comprehensive analysis through case study development. A common case study reporting template has been developed to present the results in a consistent manner.

A total of 10 case studies have been prepared, representing in excess of 20 different projects.

1. Fuel Cells Canada, British Columbia – a case study combining the activities of several different fuel cell development projects.
2. Bison Meat Quality Research, Alberta
3. George W. Govier Centre (Fluid and Slurry Transport Centre), Alberta
4. National Nuclear Magnetic Resonance Centre (University of Alberta NMR Project), Alberta
5. Centre for Social Entrepreneurship, Alberta
6. University of Regina/Regina Research Park Project Cluster, Saskatchewan – a case study combining the activities of several different activities related to the Research Park
7. St. Boniface Research Centre: Filmless Radiology, Manitoba
8. Gimli Harbourfront Expansion, Manitoba
9. North End Renewal Project: SEED Winnipeg Inc., Manitoba

10. St. Boniface General Hospital Centre for Health Research on
Aging, Manitoba

Comparative Program Analysis

A group of like-minded government programs have been considered as part of a comparative analysis.

Reporting Procedures

Throughout the final evaluation project, Garven & Associates has worked in consultation with a Steering Committee made up of representatives from Western Economic Diversification. Regular progress reports have been provided. Key milestone reports have also been prepared and reviewed by both the Steering Committee and by other federal/provincial representatives.

4.0 RESPONSE TO EVALUATION QUESTIONS

In this chapter of the final evaluation, the findings of the data collection and analysis processes are documented. The evaluation findings focus on the two primary purposes of WEPAs as derived from review of documents and files.

The purposes are summarized as follows:

- To encourage the economic and regional development of each province using complementary and focused efforts, as well as improved governmental consultations; and,
- To provide for mechanisms to achieve greater federal/provincial cooperation and more effective coordination of activities related to economic development in each province.

The evaluation findings are summarized under nineteen evaluation questions defined in the evaluation framework, which have been provided by Western Diversification. The questions are grouped under three categories; 1) program relevance, 2) program success (in terms of impacts and effects), and 3) program cost-effectiveness.

In each evaluation category, the findings are organized according to the responses to each of the evaluation questions, followed by a set of summary conclusions for that grouping of questions.

Sources of data used for preparation of the responses are WEPA program documents, specific project files, program management interviews, an e-mail

survey of project proponents, interviews with third-party individuals who are familiar with WEPA project priorities and project case studies.

4.1 Relevance

This section of the report responds to the six evaluation questions related to the relevance of WEPA. The questions address issues pertaining to the WEPAs' ability to respond to emerging changing needs in western Canada, to the appropriateness of agreement objectives in relation to federal and provincial government priorities, and to the usefulness of these types of agreements in the future.

Overall, the key question to address in the relevance section is:

Are WEPAs relevant to perceived needs and objectives within the western Canadian provinces?

Response to Relevance Questions

This section contains detailed responses to the relevance evaluation questions, based on analysis of data compiled during the investigative phase of the study.

1. Were WEPAs an appropriate response to the needs identified?

Federal and provincial governments collaborated to determine the needs within each province. Based on government experience, informal discussions with sector representatives and regional requests, a set of programming priorities was established. Overall project priorities identified for each province are as follows:

British Columbia

- Fuel cell industry development
- Innovation, information technology and oceans development
- Regional economic development and diversification

Alberta

- Phase 1: Technology development and innovation
- Phase 2: Technology and innovation infrastructure and community development
- Phase 3: Research, science and technology and community development with an emphasis on Aboriginal development

Saskatchewan

- Economic infrastructure
- Tourism infrastructure
- Export and marketing initiatives
- Rural and northern economic development
- Strategic project assessments

Manitoba

- Business development
- Economic innovation
- Regional strategic priorities
- Innovative economic development studies

A common theme running through all of the Agreements was innovation and technology, business development and regional/community economic development.

Each of the Agreements was designed to address provincial needs in a flexible and responsive manner. As a result, WEPAs provided the means to address a broad range of needs with a limited set of resources (financial and human). This broad-based approach resulted in support for a wide range and variety of projects.

Given the flexible nature of the WEPA program, it was possible to be responsive to regional priorities that were identified within the Agreements as well as to respond to those needs that emerged throughout the life of the Agreements.

2. *Have the needs that WEPAs were intended to meet changed?*

The over-riding need for economic and regional development remains strong throughout western Canada.

Historically, programs of economic and regional development have focused on the creation of tangible measures and outcomes such as new job creation or new business starts. In recent years however, the focus of economic and regional development programs has shifted somewhat. Recent programs have been designed to enhance the existing labour force and to create infrastructures that will contribute to a greater level of Canadian competitiveness in the global market.

This shift in economic development strategy is demonstrated through WEPA. The WEPA initiative has focused on funding support for projects that target development in technology, innovation and research. In addition, infrastructure development, human resource development and community enhancement have been priorities.

It has been noted that within each of the WEPAs, there are no formal mechanisms to identify, consult or track changes in industry or sector needs and priorities over time. Nevertheless, the design of the program is very flexible and, within resource constraints, WEPA can effectively adjust and respond to evolving changes in regional needs.

3. *If so, how have the needs that WEPAs were intended to meet changed?*

A set of Western Canadian economic development needs were not explicitly documented within the WEPA agreements however, a list of funding objectives was established. The needs of stakeholders were not documented through a formal process. Therefore, it is difficult to identify how these needs have changed over the five year timeframe of the WEPA initiative. In Alberta, the Agreement was implemented in three phases allowing for new priorities to be established in each of the phases. In the other three provinces, interview respondents reported that economic development priorities have not changed substantially over the past five years, however each provincial program flexibly responded to the evolving development requirements.

Documenting stakeholder needs at the outset of the Agreements would have allowed Garven & Associates to test whether these needs had changed over time. In future, this type of documentation would make it possible for the evaluation consultant to address this question more effectively.

4. Should WEPAs and their initiatives continue?

WEPA funding was instrumental in advancing the priority areas and the projects that were selected in this program. Interview respondents indicated that WEPA-style funding initiatives are required by the provinces to advance economic and regional development requirements. In addition, funding continues to be required to advance the federal economic diversification priorities for western Canada.

The concept of WEPA programming that supports the combined objectives of economic development and enhanced federal and provincial government collaboration remains highly relevant.

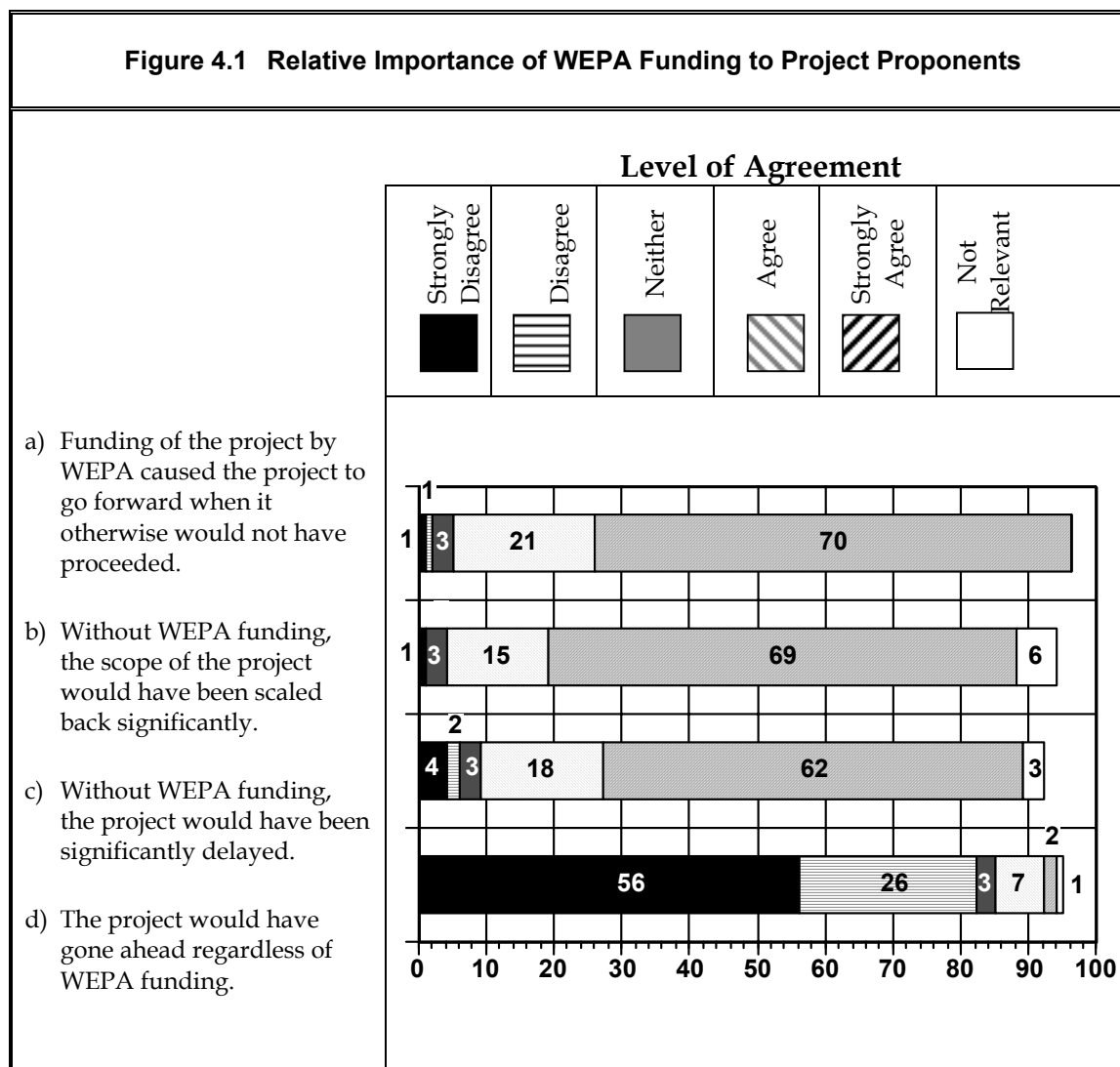
The importance of WEPA funding to project proponents is illustrated by Figure 4-1. Proponent responses indicate that most projects would either not have proceeded, would have been significantly scaled back or would have been significantly delayed without WEPA funding. The strong level of agreement supports the relevance of the WEPA program.

5. Were the objectives stated in Agreements with funded agencies appropriate?

Objectives outlined within the Agreements were generated primarily from consultations among officials within federal and provincial government departments. Consequently, the objectives are largely appropriate for the government departments and agencies involved.

There were no formal, direct consultations with stakeholders in the development of WEPA objectives. Interviews with provincial administrators indicated that departmental officials relied on data generated from stakeholder consultations during the preparation of provincial budgets and from normal departmental meetings with stakeholders on a wide range of topics. It was

indicated that these data provided indirect stakeholder involvement in the development of WEPA objectives and priorities. However, without direct consultations with a variety of stakeholders, it is not possible to unequivocally determine whether the objectives outlined within the Agreements were appropriate to all stakeholder groups.



The key purposes of WEPAs, as outlined in the Agreement documents, was to improve federal/provincial cooperation with more effective coordination of activities related to economic development and diversification, and to provide financial assistance to foster economic development and diversification over the medium to longer term. These purposes were reflected in the fed/prov Agreements as well as in the Contribution Agreements with proponents.

Within the context of the two key purposes of WEPA, the following specific objectives are common to each federal/provincial agreement, (with the exception of number 9 which does not appear in the Alberta Agreement):

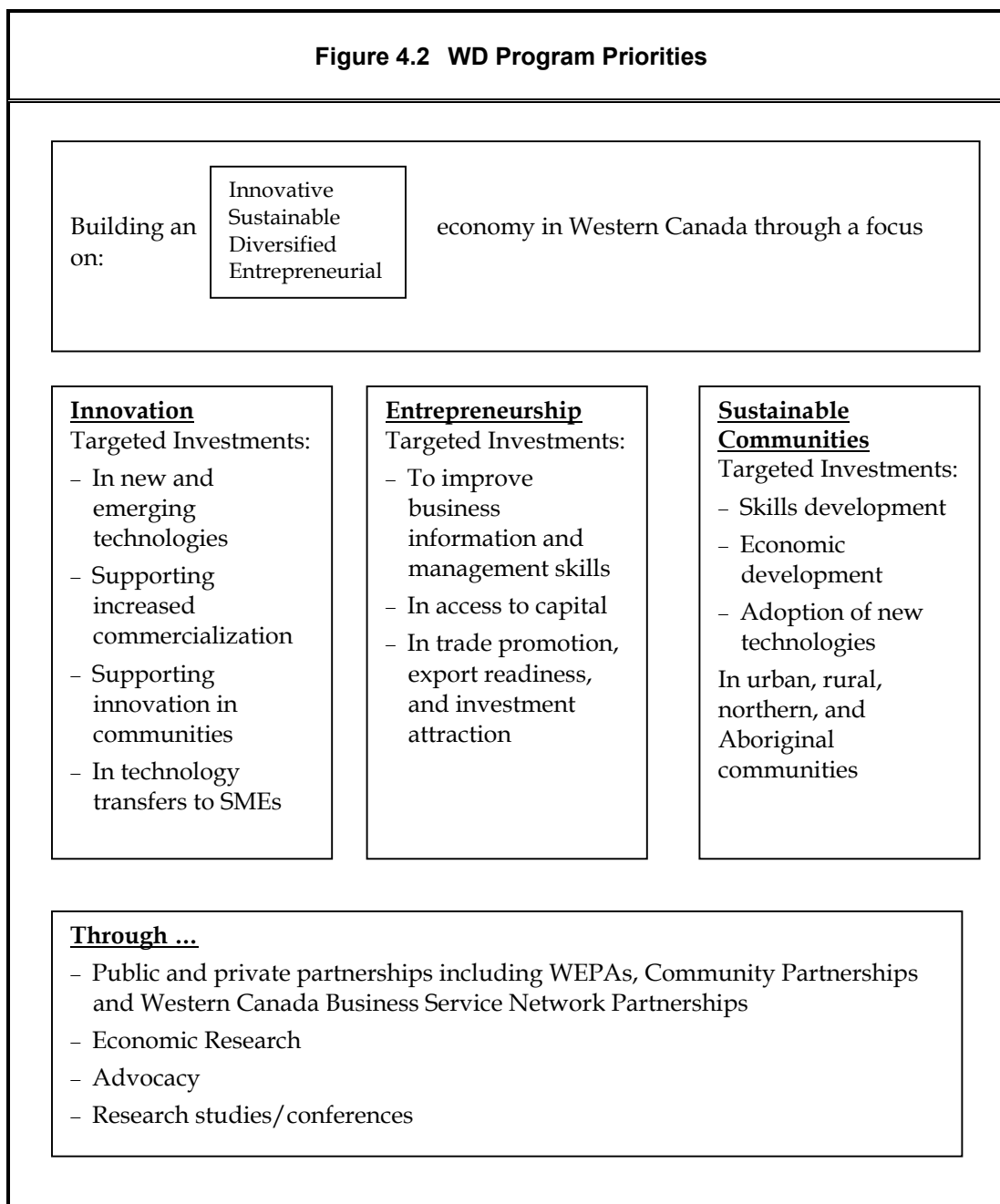
1. To expand the competitive ability of the province's economy through investment in key sectors;
2. To encourage the creation, expansion and modernization of small- and medium-sized businesses and increase value-added activities in the province's economy;
3. To build on the strengths of local communities;
4. To provide and promote increased opportunities for private sector investment and entrepreneurship;
5. To encourage research and development, and promote the application of technology by businesses in the province;
6. To encourage trade in products and services in new markets;
7. To promote sustainable economic development;
8. To encourage a skilled and flexible workforce that meets the requirements of industry and permits broader participation by residents of the province in the benefits of economic growth;
9. To contribute to greater coordination of federal/provincial programming for economic development; and,
10. To ensure the programming under this Agreement complements other federal and provincial programming.

The foregoing list of objectives confirms the intent of the Agreements to have capacity to fund a wide range of projects.

6. Are the objectives of WEPAs consistent with current government and department priorities and objectives?

WEPA objectives are consistent with WD priorities and objectives which reflect overall federal government priorities and objectives. These priorities have been recently documented in the graphic presented in Figure 4.2. This graphic highlights the federal government's approach to building the western Canadian economy through three important pillars: Innovation, Entrepreneurship and Sustainable Communities.

The objectives of the WEPAs are also consistent with provincial government priorities as noted by provincial management officials during interviews. WEPA objectives and priorities reflect provincial priorities that are documented in department business plans (Alberta), throne speeches and budget addresses (Manitoba), the provincial economic development strategic plan (Saskatchewan) and the provincial program review (British Columbia). WD's priorities have changed and have been modified over the life of the WEPA. Figure 4.2 shows the most recent WD position.



Conclusions - Relevance of Agreements

Conclusions regarding the relevance of the Agreements are summarized as follows:

- **There continues to be a very strong rationale for implementation of WEPAs based on the long-term goals of provincial and federal governments. They are relevant and valuable tools for fostering regional economic development and diversification, and for building and strengthening federal/provincial partnerships related to economic diversification.**
- **WEPA is a government directed economic development and diversification initiative. Governments have determined spending priorities and allocations. As such, WEPAs are relevant to the goals and objectives of both federal and provincial governments.**
- **As a flexible and adaptable program, WEPA remains relevant because of its ability to react to evolving needs and to address unique needs within each province.**
- **WEPA provides an opportunity for both federal and provincial input into economic development, thereby helping to strengthen federal/provincial relations.**
- **WEPA continues to be a relevant forum for federal and provincial governments to collaborate on economic development and diversification issues on a broad front, although there are some variations in the form of collaboration from province-to-province.**

4.2 Success

This section of the report addresses seven evaluation framework questions pertaining to the success of WEPAs in terms of the Agreements' ability to impact on the targeted audiences and to achieve short- and long-term effectiveness. Data for responding to these questions were compiled primarily from the e-mail survey of clients, managerial interviews, interviews with third-party individuals and case studies.

The key question relevant to success is as follows:

Are the impacts, benefits and outcomes of WEPAs positive and compatible with expectations of success?

Response to Success Questions

7. What has been the impact of WEPAs on encouraging the economic and regional development of each province?

WEPAs have encouraged economic development within each province through investments in a wide range of projects.

Examples are as follows:

- British Columbia: advancement of new technology sectors (fuel cells, new media integration);
- Alberta: support for diverse initiatives related to innovative technology and community development;
- Saskatchewan: investments in economic infrastructure (synchrotron, petroleum research) and tourism; and,
- Manitoba: catalyst for community-based social and economic development (healthcare, cultural facilities).

Based on client survey responses, WEPAs have had significant positive impacts on economic development. Table 4.3 illustrates data for variables related to employment, salary and wages, capital investment, leveraged investment and new business starts. These data illustrate impacts realized to date and forecast

the expected impacts over the next five years. Data has been collected from 52% of the funded projects, representing 58% of the overall WEPA funding. The general trends realized in this data have been extrapolated over all projects in the bottom half of Table 4.3.

* It is important to note that the values presented in Table 4.3 represent a summary of the figures provided by the recipients of WEPA funding. These figures have been taken directly from survey response forms and are unaudited.

Table 4.3 Direct Impacts and Forecasted Impacts of WEPA Funding		
* 52% of projects, representing 58% of WEPA's investment responded to the survey. Of those respondents, 45% answered this question:		
	Total Realized to Date	Total Forecast over Next Five Years (Cumulative)
1. (a) Number of new, full-time equivalent positions created.	720	3,903
(b) Salary and wages.	\$27,501,922	\$157,873,321
2. Capital investment in buildings and equipment. (By proponent, fed and provincial investment and leveraged)	\$251,937,528	\$488,165,000
3. Amount of dollars leveraged from private sector investment.	\$39,934,240	\$239,963,500
4. Number of new business starts.	64	307
* Using the same respondent levels, data has been extrapolated over 100% of respondents:		
	Extrapolated Total Realized to Date	Extrapolated Total Forecast over Next Five Years (Cumulative)
1. (a) Number of new, full-time equivalent positions created.	1,374	7,450
(b) Salary and wages.	\$52,503,669	\$301,394,522
2. Capital investment in buildings and equipment.	\$480,971,644	\$931,951,364
3. Amount of dollars leveraged from private sector investment.	\$76,238,095	\$458,112,136
4. Number of new business starts.	122	586

Table 4.3 demonstrates a significant level of impact realized for a federal government investment of \$80 million and provincial investments of \$20 million per province.

8. What has been the impact of WEPAs on improving intergovernmental consultations?

Being cost-shared, WEPAs provide incentives for both federal and provincial government representatives to work together toward common goals and objectives. It was reported by management staff and WEPA officials that the WEPA initiative has been a catalyst in strengthening federal/provincial consultations on economic development and diversification across a broad front, beyond the scope of the Agreements themselves.

All provinces reported that WEPA provided a means for intergovernmental consultation. In many cases, this consultative process has outlived the term of the Agreements.

9. What has been the impact of WEPAs on the level of federal-provincial cooperation?

Agreement Management Committees (AMCs) and departmental officials have worked together to address economic diversification challenges, resulting from the existence of WEPAs. The Agreements have also provided a path-finding mechanism to alternative federal or provincial funding sources for various initiatives, which otherwise would not have existed.

WEPAs were established in such a way that either federal or provincial governments could fund projects solely from the federal or the provincial portion of the WEPA allocation. On occasion, this was done to simplify administrative requirements or to focus on a specific priority particularly relevant to one level of government or another. In the majority of cases, this was an advantage of the program allowing for each government's priorities to be addressed. There were also times that funding of a project from one government source or the other indicated that there was not mutual agreement as to the priority of the project. It is important to note that the latter scenario was uncommon.

WEPA's funding arrangements, which allowed for mutually funded projects or independently funded projects, provided for a significant level of flexibility.

However, caution must be exercised. The level of cooperation and collaboration amongst different levels of government could be compromised by the ability of each government to provide 100% funding for particular projects.

In the current WEPA, 80% of the projects were funding jointly, another 10% were funded solely by the federal government, and 10% were funded provincially. Although some projects may have been funded separately, all projects (jointly or separately funded) were approved by the respective AMCs.

10. What has been the impact of WEPAs on the effectiveness of coordinated activities related to economic development in each province?

Leverage is one method of measuring the effectiveness of coordinated activities related to economic development. In this context, leverage is defined as the incremental direct investment from other government and non-government organizations associated with the total federal/provincial WEPA funds committed. In other words, leveraged funds are dollars beyond the \$40 million of federal and provincial WEPA funding.

Project file data for Manitoba and Saskatchewan indicates a leverage ratio of about 1 to 2.0. In other words, federal/provincial WEPA spending of \$40 million generated an additional \$80 million in spending, or about \$120 million in total. In Alberta and B.C. the WEPA funds of \$40 million were enhanced by approximately \$30 million in additional resources (other government and private sector) for a total of approximately \$70 million in each province. This represents a leverage ratio of 1 to 0.7.

Another measure of the effectiveness of coordinated activities related to economic development, is the government provision of incremental funding for WEPA agreements. Western Diversification funding is incremental through the WEPA initiative. However, according to management interviews, incremental funding is provided in the provinces of Manitoba and Saskatchewan, but not by Alberta and British Columbia. This difference in policy, related to incremental funding reflects an inconsistent approach to provincially negotiated WEPAs. Management interviews indicated a desire to establish a more consistent policy regarding incrementality.

11. Were there unexpected or negative impacts from WEPAs?

A total of 39% of client survey respondents reported spin-off or unintended benefits that occurred as a result of the WEPA initiative. Only two of the respondents reported negative impacts and these impacts were related to the implementation of the project and not to a direct connection with the WEPA program. Positive and negative impacts are summarized as follows:

Positive impacts:

- Greater than expected impact on the local community
- Greater than expected impact on the international community
- Greater than expected impact on the national community
- Greater than expected employment
- Development of complementary infrastructure
- Enhancement of strategic alliances/collaboration
- Incremental business benefits
- Development of skilled workforce
- Greater than expected leveraged dollars
- Increased awareness

Negative Impacts:

- Project didn't go as planned

12. How successful have WEPAs been in achieving overall objectives?

Many project proponents had difficulty quantifying and/or identifying specific impacts. For example, approximately 50% of survey respondents did not identify quantifiable impact measures in their survey response. Several reasons were given for the proponents' inability to identify quantifiable indicators of success:

- Some projects are too early in development to measure impacts;
- Some projects do not track quantifiable indicators;

- There is a lack of a clear connection between project objectives and WEPA objectives in some projects; and,
- The majority of projects focus on systemic or sector development, which by nature realize greater difficulty in identification of quantifiable measures of impact.

Measurable performance indicators are required to support the assessment of success in relation to goals and objectives. Unfortunately, these indicators are rarely specified in WEPA project contract arrangements and are not identified for the overall WEPA program. The need for the identification of Success Indicators should be considered for future agreements.

For many of the projects funded within the WEPA initiative, the proponents can identify public benefits. These benefits are more difficult to quantify than benefits that are directly felt by an individual, a company or a specific organization. Public benefits are exemplified by such outputs as: research and development activity, research infrastructure, strategic projects, regional and community social and economic development, and skill development.

Private or personal benefits are typically characterized by: direct benefits (usually shorter term); strict decision criteria; consistent checks and balances; clear “bottom-line” indicators of success; and, demonstrated feasibility of initiatives. On the other hand, public benefits are characterized by indirect benefits (typically longer term); less specific decision criteria; limited checks and balances; unclear indicators of success; and demonstrated feasibility is not always required.

Initiatives, such as WEPAs, are aimed at fostering economic development and diversification through public sector funding to benefit a broad spectrum of the public. As a result, the measures of success are more difficult to quantify. Therefore, for programs like WEPA with many indirect benefits, criteria that define success and more time to see project results are needed before the success of WEPA can be properly quantified and assessed. A significant effort is required by program planners and developers to establish measurable indicators of program success at the outset of the initiative. Measurable indicators will provide an opportunity to ascertain the true impact and value of programs such as WEPA.

At this early stage of the WEPA initiative, and without identified success criteria, it is very difficult to quantify the overall success of the program.

13. How successful have individual projects funded by WEPAs been in achieving stated objectives?

Analysis of proponent survey responses, indicates that the majority of proponents believe that WEPA assistance has helped them to achieve their organization's objectives. As noted previously, proponents believe that many projects would not have proceeded or would have been scaled back without WEPA funding.

Third-party interviews with sector representatives also indicate that WEPA funded projects have helped to significantly advance the sectors where projects have been funded. Each of the interviewed respondents was able to describe direct results and impacts that have been achieved as a result of WEPA funded projects. Projects impacted in a number of ways; for example: by expanding market opportunities, providing information, advancing value-chains, enabling research and development, attracting human resources, encouraging partnerships, increasing visibility of sectors and organizations, enhancing innovation, building capacity, and others.

Conclusions – Success of Agreements

Conclusions regarding the success of WEPAs in terms of impacts and effects are summarized as follows:

- 1. Based on analysis of available data, WEPAs have been effective in achieving their primary purposes; to encourage economic and regional development and to provide a mechanism for greater federal/provincial cooperation related to economic development.**
- 2. Increased economic development and diversification in the form of new industries and enhanced economic infrastructure have resulted from the Agreements.**
- 3. WEPAs have advanced economic development and diversification projects that would not have otherwise gone forward.**

4. **Strengthened partnerships and federal/provincial cooperation have resulted from WEPAs, not only with respect to WEPAs themselves, but also across a broad front of federal/provincial socio-economic programming.**
5. **WEPAs incorporate strong administration principles. Proponents report a high degree of satisfaction with the performance of administrative functions.**
6. **There was an absence of direct stakeholder consultations in the formulation of Agreement objectives and priorities.**
7. **There are inconsistencies in implementation of WEPAs from province-to-province related to the provision of incremental funding. This disparity contributes to reduced effectiveness in coordination of economic development initiatives across the four western provinces.**
8. **WEPA is not a proposal-driven program. It is founded on the assumption that officials in several federal and provincial government departments are best equipped, based on their broad knowledge of government priorities, to source out the most suitable projects, within available funding resources. As a result, WEPAs are not widely visible in the stakeholder community. There is some risk that they could be seen as targeting certain special interest groups to the exclusion of others. The general absence of project eligibility/selection criteria compounds this perception problem.**
9. **Project proponents have had difficulty quantifying project impacts for a number of reasons. A deficiency in performance measurement data tracking systems contributes to this inability.**
10. **Many WEPA benefits are indirect and not easily measured. Consequently, performance measures and indicators of success for the program have not been established.**

4.3 Cost Effectiveness

This section addresses six evaluation framework questions pertaining to cost-effectiveness of WEPAs. Cost-effectiveness is measured in terms of how effective WEPAs are in fostering agreement objectives related to economic diversification and enhanced partnerships, relative to costs and alternatives. Responses to these questions were based on data obtained primarily from review of program documents and project files and administrative and management interviews.

The key question addressed in this section is:

Are WEPAs an efficient and effective mechanism for achieving western economic diversification and stronger partnerships?

Response to Cost-Effectiveness Questions

14. Are WEPAs the most cost-effective way to encourage the economic and regional development of each province, as well as to improve intergovernmental consultations?

It is generally recognized that the four western Canadian provinces continue to require a strong emphasis on economic diversification to achieve greater economic stability and economic growth. Realizing opportunities for value added economic activities and development of new industries/sectors could contribute to less reliance on traditionally unstable primary industries (agriculture, forestry, etc.).

Based on interviews, policy advisers and administrators consider WEPAs to be effective tools for fostering regional economic development in each of the western Canadian provinces. Compared with other economic development tools, WEPAs provide unique advantages in terms of flexibility in responding to development opportunities. At the same time, WEPA is complementary with other federal and provincial economic development programs.

During the interview process for this evaluation project, WEPA administrative officials indicated that Agreements are managed similarly in each province. Each Agreement has an AMC consisting of Agreement co-chairs supported by co-secretaries/managers. WD and co-partner provincial departments provide staff for conducting project analysis and due diligence.

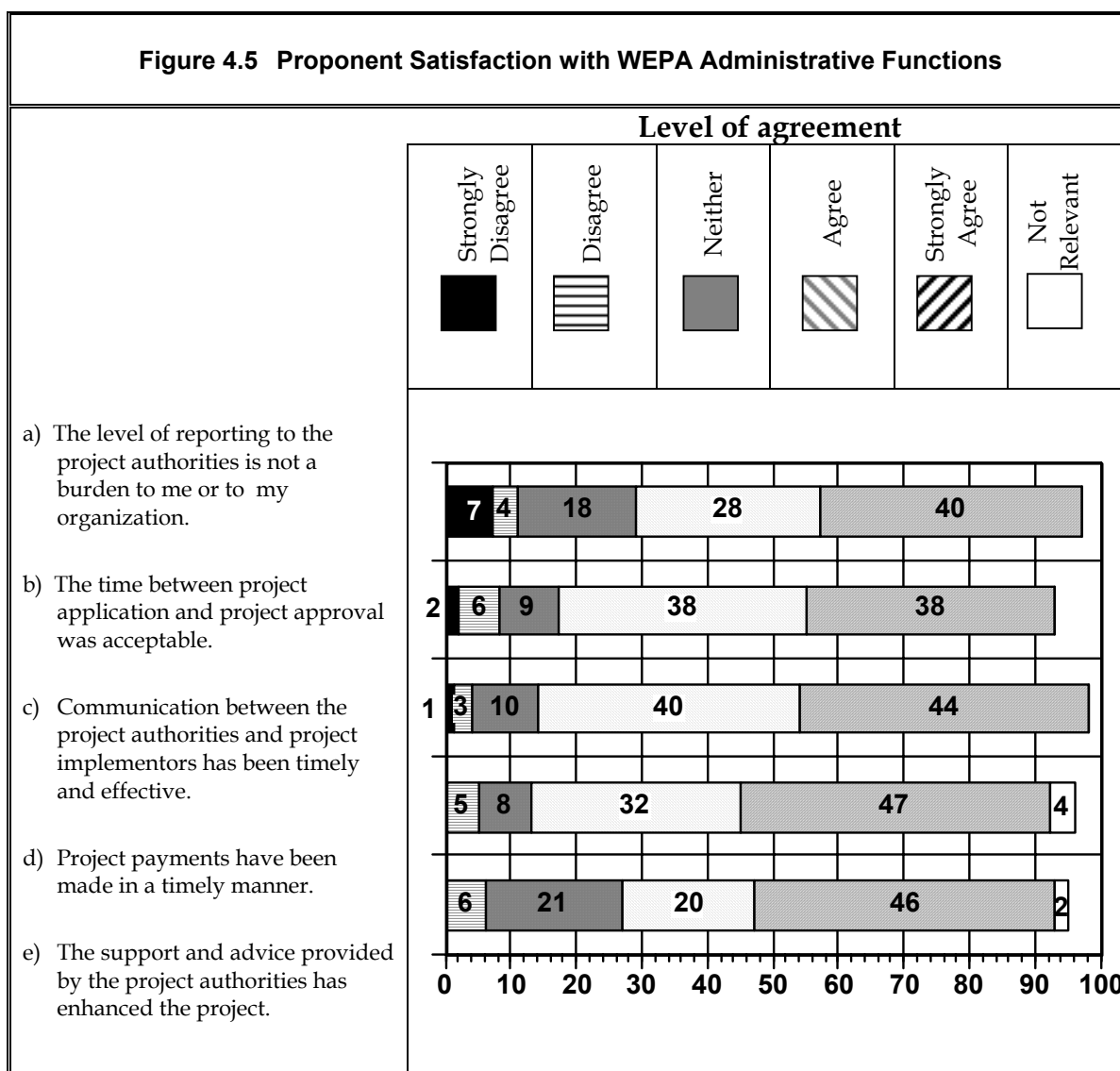
As the majority of administrative costs for the WEPAs are handled internally by WD and each province, the direct delivery costs are relatively low, compared with other programs that require their own separate administrative and overhead cost structures.

The practice of administering projects such as WEPA without additional administrative resources can result in a lack of time for proper due diligence, project follow-up and project monitoring. In the WEPA program, no concerns were raised about the lack of time for due diligence however, there was a concern raised that there was more time needed for the monitoring and follow-up functions that are required to ensure proper implementation of the projects.

Sector interviews also indicate strong endorsement for the value of WEPAs as industry development tools. WEPAs provide effective leverage of other governmental and private sector investment in economic development and diversification activities.

Client Satisfaction

Project proponents express a high level of satisfaction with the way WEPAs were managed and implemented. Figure 4-5 illustrates the level of agreement with statements concerning various WEPA administrative functions; project reporting requirements, application approval time, communications, payment procedures and technical advice and support. As indicated by the responses, clients are generally quite satisfied with the administrative aspects of WEPAs in each of the provinces.



15. Are WEPAs the most cost-effective way to provide for mechanisms to achieve greater federal-provincial cooperation and more effective coordination of activities related to economic development?

WEPAs provide tangible incentives for federal and provincial governments to work together toward a common set of goals and objectives. Interviews with administrative and management officials confirm that WEPAs are powerful tools for achieving federal and provincial cooperation and collaboration. WEPAs bring federal and provincial officials to the decision-making table with tangible financial resources.

As indicated previously, the WEPA AMC forum, supported by federal and provincial officials, also provides a mechanism for sorting and channeling project proposals to other funding sources. Officials emphatically state that, without WEPAs, federal/provincial avenues of communication, cooperation and coordination on economic development and diversification in the western provinces would diminish and become ineffective over time.

16. Did the AMC properly apply eligibility criteria?

As WEPA was not delivered as a proposal-based program nor as an application driven program, eligibility criteria were not extensively utilized. Our research indicates that the Alberta WEPA adopted an eligibility criteria with corresponding project rating factors. For the other western provinces, AMC decisions were guided by priority areas and objectives described in the general terms of the Agreements. Program delivery and project selection processes operated within the general WEPA guidelines specified for each province.

Government funded programs such as WEPA run a risk of being criticized for their project selection techniques. A targeted program like WEPA could be considered by some to be elitist or selective, leaving out whole sectors that would like to have access to public funds to advance their economic development priorities. It is important to have a clear communication strategy to support the decision to focus on particular sectors of the economy.

17. Were the elements of due diligence applied by the AMC?

Of the survey respondents, 51% indicated that a feasibility study had been done for the project for which they received WEPA funding. Of course, not all projects require formal feasibility studies, however, the preparation of success criteria or a feasibility study is an indication that effective due diligence has been applied. Without formal project selection criteria, success indicators, or feasibility assessment, the proof of due diligence is not evident. Therefore, it is important to document due diligence processes that have been used. In most WEPA-funded projects, due diligence is obvious however, in some cases it is not evident.

Co-secretary/managers coordinated assessment of project proposals by project officers, drawing upon subject-matter expertise within both federal and provincial government systems.

Project approval forms signed by AMC co-chairs detailed terms and conditions of Agreements with project proponents. Federal and provincial finance officers reviewed project claims in detail to ensure compliance with Agreement terms and conditions.

In some instances, both federal and provincial government officials actively sought out and, in effect, became the champions or proponents for projects that received WEPA funding. When officials are required to fill the dual roles of project advocate and appraiser, there is a risk that objectivity and due diligence can be compromised. No significant examples of this scenario were discovered during the WEPA evaluation process, but the risk nevertheless remains.

18. What can be done to deliver WEPAs in a more cost-effective manner?

The main advantages of WEPAs are that they maximize flexibility in filling gaps and responding to opportunities related to economic development and diversification within each province. Another advantage is that the WEPA initiative in each province is administered with relatively low overhead cost.

Through interviews with the Agreement managers and co-chairs, a number of cost-effectiveness issues were discussed. Interviewees recommended that the following administration considerations be addressed in future programs:

- Without administrative funding and budgeting, very little project follow-up is possible to ensure that projects adhere to good business development practices.
- Inconsistent delivery approaches from province to province prevent realization of opportunities for increased cost-efficiencies.
- Limited follow-up results in a lack of project monitoring, collection of impact data and analysis of project adherence to objectives.

Ways of improving the cost-effectiveness and delivery efficiency of WEPAs as recommended by the Interviewees are as follows:

- Create a single window delivery approach, jointly staffed by federal and provincial officials.
- Utilize a single, standard federal/provincial agreement for all proponents, eliminating the current practice, in several jurisdictions, of separate federal and provincial agreements for cost-shared projects.
- Adopt consistent eligibility criteria across the four western provinces and ensure their public availability. (This will need to be based on pan-western consultation.)
- Develop coherent and consistent performance measures and corresponding data collection, across the four western provinces, within the context of a results-based management framework.
- Provide adequate administrative funding to conduct effective performance measurement (identification of indicators, collection of data and analysis).

The major advantage of these suggestions is that they would ensure a consistent, stream-lined administrative approach, with more efficient use of administrative resources and more effective measurement of Agreement impacts and outcomes.

The single window model could be adopted under the arm of the WD office in each province. It could also be operated at the level of the WD headquarters for all four western provinces combined. However, it is critical that project decision making remain decentralized within each province to ensure strong federal/provincial cooperation and flexibility to respond to emerging economic development and diversification opportunities within each province.

19. What are alternatives to WEPAs in attempting to meet the stated objectives?

Through the interview program, alternative delivery methods were identified, explored and assessed by provincial and federal representatives for possible future consideration. Under all options considered, it is assumed that current federal/provincial Deputy Minister and Assistant Deputy Minister

committees, supported by departmental officials, would provide strategic direction and overall coordination of future spending within each province and across the four western provinces.

The options proposed by interviewees are as follows:

Option 1 - Informal Coordination

Continue federal/provincial funding within each province with coordination through informal channels of communication among federal and provincial officials.

- Without the formal mandate of a federal/provincial agreement, with funding, informal partnership arrangements for economic development would diminish over time.
- Coordination would continue for larger, more strategic projects that by their nature require close federal/provincial cooperation.
- Shift in emphasis to respective federal and provincial priorities, within each province, would increase risk of client confusion, duplication of economic development initiatives and increased delivery costs.
- Capacity for leveraging of other government and stakeholder funds would diminish

Option 2 - Merger of WEPA with WDP

Eliminate WEPAs, with future federal funds channeled through the existing Western Diversification Program (WDP) delivered by WD within each province.

- Funds would be targeted to federal priorities with less provision for funding of provincial priorities; any available provincial funds would be targeted to provincial priorities.
- Mechanisms for broad federal/provincial coordination of economic diversification efforts would be significantly reduced.
- As with WDP, cooperation would continue for larger, more strategic economic development projects.

Option 3 - Transfer Federal Funds to Provinces

Federal funds under WEPAs could be transferred directly to provincial governments with a predominant mandate for economic development.

- Mechanisms for coordination and cooperation would be eliminated as there would no longer be any need for them.
- Visibility for federal government funding of economic development initiatives through transfer of funds would greatly diminish.
- Capacity to respond to federal government economic diversification priorities for western Canada would diminish significantly.

Option 4 - Use of Stakeholder Agreements

Utilize stakeholder and sector organizations to target SMEs involved with diversification and value-added processing business objectives.

- Emphasis in federal/provincial partnership arrangements would shift to stakeholders and sectors with capacity to financially contribute to and foster advancement of small and medium-sized enterprises.
- Impacts of assistance could be more measurable with traditional indicators (e.g., job creation, new investment, increased sales, etc.).
- Financial assistance could be restricted to “green” types of assistance under the WTO (e.g., industry support, training, environmental protection, etc.).
- Could be inconsistent with existing federal and provincial policies concerning provision of assistance to individual businesses.
- Would foster increased federal/provincial cooperation, especially related to SMEs, to minimize risks of client confusion and duplication of assistance.

Of all the alternatives considered, none would adequately meet the stated WEPA objectives related to economic development/diversification and cooperation/coordination. In all cases, flexibility to respond to emerging economic diversification opportunities and to fill funding gaps would diminish.

On balance, WEPAs are a suitable tool for achieving the identified objectives. They are a complementary tool to on-going federal and provincial economic development programming in western Canada and have the potential capacity to address strategic initiatives. Improvements have been identified which could strengthen the implementation of similar agreements in the future.

Conclusions – Cost Effectiveness of Agreements

Conclusions about the cost-effectiveness of WEPAs are summarized as follows:

(Note: For many individual projects, it is premature to draw cost-effectiveness conclusions.)

- 1. WEPAs are cost-effectively administered within current federal/provincial organizational structures. Efficient decision-making and relatively low direct administrative costs support this cost-effectiveness.**
- 2. The cost of low administration can result in a deficiency of administrative resources devoted to consultation, project selection, communications, as well as follow-up performance measurement and assessment of project impacts. Administrative funding deficiencies in regard to the foregoing aspects, results in overall reduced cost-effectiveness.**
- 3. Client or project proponent satisfaction levels are very high.**
- 4. There is no formal, standardized set of project selection criteria. This opens the risk of subjectivity in the identification and selection process.**
- 5. No alternative delivery approaches examined through the interview program, offer the same degree of effectiveness as WEPAs in achieving coordinated federal/provincial economic development and diversification in western Canada.**

5.0 COMPARATIVE PROGRAM ANALYSIS

5.1 Relevant Economic Development Programs

The terms of reference for the WEPA Final Evaluation ask two important questions:

1. Were WEPAs an appropriate response to the needs identified?
2. Should WEPAs and their initiatives continue?

To answer these questions, the following review and analysis is presented to place WEPA into a suitable context.

Economic development programs are indicators of national economic policies and priorities taken at various times in Canada's history. Canada experienced rapid economic growth in the 1960's stemming directly from massive U.S. investment in resource based industries (petroleum, minerals, pulp and paper) and manufacturing industries (automobiles). As a result, Canada developed some striking characteristics when compared to other developing countries. These characteristics include high levels of private, foreign ownership of manufacturing (in 1960, 30% of Canadian manufacturing was completed in U.S. controlled plants) and a dependency on foreign trade. Moreover, regional gaps in economic development emerged. In the next three decades, Canada's national economic policy would shift to focus on priorities such as employment creation, foreign ownership, export expansion, and competitiveness.

The Department of Regional Economic Expansion (DREE) was established in 1969. DREE played an important role in directing federal and regional economic development activity. However, a significant change occurred when the first formal federal-provincial agreement for economic development was signed in 1974.

The General Development Agreement (GDA) was a 10-year umbrella agreement. For the first time, through these agreements, the western provinces were formally included in federal economic development initiatives.

By 1984, GDAs were replaced by new umbrella agreements called Economic Regional Development Agreements (ERDAs). ERDAs were in place from 1984 through 1994 in western Canada and were divided into two generations. The second generation agreement (1989-1994) was reconfigured and renamed

Western Economic Partnership Agreements (WEPAs). WEPA was renewed in 1998 for an additional 5 years ending March 31, 2002. During the course of this 25 year period, the types of programs and goals have varied considerably because of shifting needs and priorities.

Parallel to the federal-provincial development agreements, the federal government offered diverse incentive programs focused on attracting investment and reducing unemployment. In the early 1970's, incentive programs were offered to businesses by DREE, later DRIE (Department of Regional Industrial Expansion), and eventually by WD (Western Economic Diversification).

Federal programs were targeted at providing incentive for firms to locate, modernize or expand in designated slow growth regions or to invest in qualifying assets or to create new jobs.

Federal-provincial programs could target specific groups and sector areas relevant to the province's needs through subsidiary agreements. Table 5.1 illustrates the GDA subsidiary agreements in place in the late 1970's and early 1980's. This period is profiled to illustrate federal-provincial programs which are very different from WEPAs.

The federal-provincial subsidiary agreements in Table 5.1 were incentive based grants or interest free loans benefiting businesses that established, modernized or expanded business in certain sectors and/or geographic areas within a province.

**Table 5.1 Federal-Provincial Subsidiary Agreements (1978-82)
Target Area Examples and Benefits**

Target Area	Type of Assistance	Benefits
Canada-Manitoba Subsidiary Agreements		
<ul style="list-style-type: none"> - Industrial Development (example) - Tourism Development (example) Other Projects: <ul style="list-style-type: none"> - Interim Water Development - Manitoba Northlands - Value Added Crop Production 	Small business All areas except Winnipeg	Modernization/expansion of manufacturing, processing Establish or expand accommodation facilities Forgivable loans for 50% of eligible capital costs (max \$30,000)
Canada-Saskatchewan Subsidiary Agreements		
<ul style="list-style-type: none"> - Qu'Appelle Valley (example) Other Projects: <ul style="list-style-type: none"> - Northland - Forest Development - Productivity Employment and Technology Transfer in Agriculture - Interim Water Development 	Recreation and tourism facilities	Establishment, expansion and modernization of the Qu'Appelle area Grant on capital costs

Planning	
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**Table 5.1 (Cont.) Federal-Provincial Subsidiary Agreements (1978-82)
Target Area Examples and Benefits**

Target Area	Type of Assistance	Benefits
Canada-Alberta Subsidiary Agreement		
<ul style="list-style-type: none"> - Nutritive Programming Agreement (example) <p>Other Projects:</p> <ul style="list-style-type: none"> - Alberta North 	<p>Food and agricultural processors on rural areas</p>	<p>Establish, modernize or expand processing facilities</p> <p>Incentive grant not to exceed 35% of total capital cost</p>
Canada-British Columbia Subsidiary Agreements		
<ul style="list-style-type: none"> - Industrial Development (example) - Travel Industry Development (example) - Agricultural and Rural Development (example) <p>Other Projects:</p> <ul style="list-style-type: none"> - Incentive Forest Management - Ridley Inland Road Access 	<p>Small businesses in manufacturing or processing with sales under \$500,000</p> <p>Tourist facilities</p> <p>Value added processing operations</p>	<p>New facilities only</p> <p>Interest-free forgivable loans up to \$30,000</p> <p>Loans and forgivable loans</p> <p>50% of approved project costs</p>

5.2 Comparison of Program Outputs

In general, federal-provincial GDA and ERDA agreements produced outputs that fall into the following categories:

- New business starts,
- Capital investment in manufacturing and processing facilities for small and medium sized businesses and accommodation for tourist facilities, and
- New employment.

WEPA, especially the last generation WEPA (1998-2002), has produced some of the same as well as a different set of outputs that typically fall into these categories:

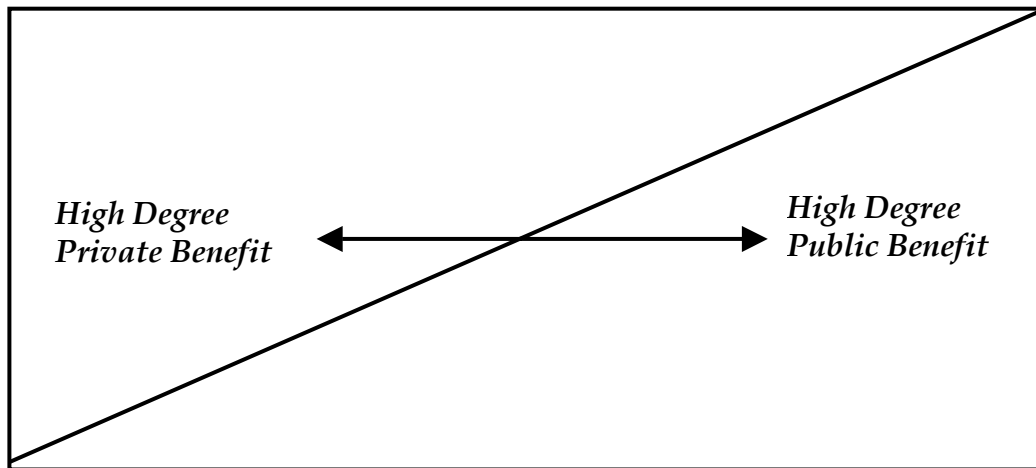
- Research and Development Activity
- Research Infrastructure
- Strategic Projects
- Regional and Community Social and Economic Development
- Skill Development

These differences in outputs, combined with a lack of success criteria and means to measure impact, make it difficult to directly compare WEPA to past federal-provincial programs. It is not easy to determine which type of program is most appropriate. However, given today's government priorities, it would appear that the second generation of WEPA is an appropriate response to needs.

Benefit Shift

Figure 5.2 presents a concept that illustrates a continuum of benefits received from government economic development programs. At one end of the continuum are primarily direct, private benefits whereas at the opposite end are primarily indirect, public benefits. Between these extremes can be a mix of direct and indirect benefits.

Figure 5.2 Government Program Benefit Continuum



Characterized by:

1. Direct Benefit
2. High Degree of Tangible Output
3. Strict Criteria
4. Checks/Balances/Controls
5. Clear Indicators of Success
6. Demonstrated Feasibility Required

Characterized by:

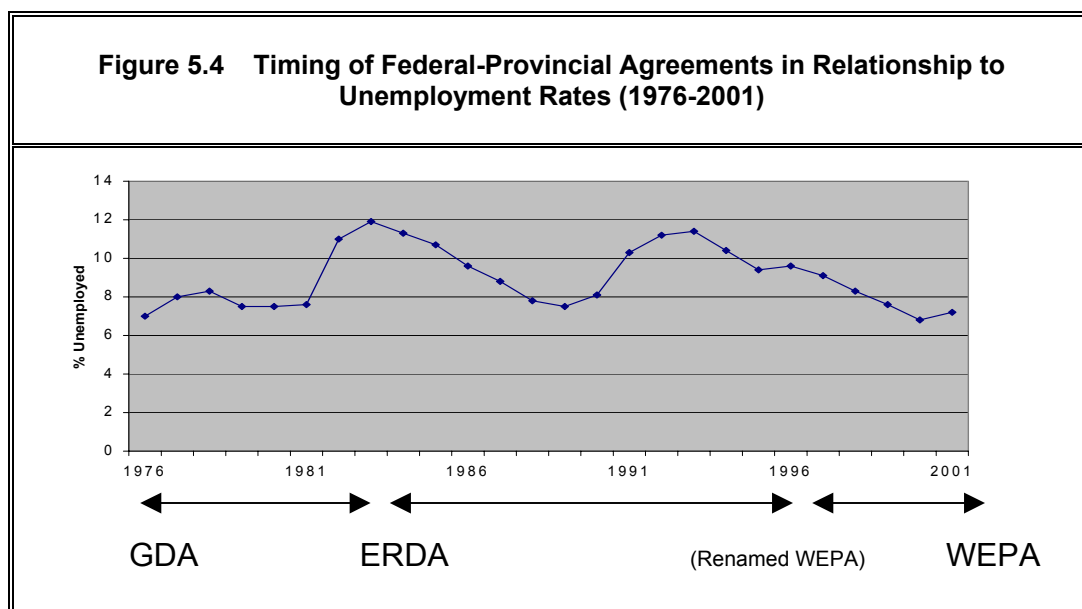
1. Indirect Benefit
2. High Degree of Intangible Output
3. Nonspecific Criteria
4. Limited Checks/Balances Controls
5. Unclear Indicators of Success
6. Feasibility Not Always Required

Federal economic development programs and federal-provincial agreements have shifted along this continuum in response to national and provincial economic policy and priorities. The position of programs on the continuum has shifted from a high degree of direct, private benefit (in the 1970's and 1980's) to a high degree of indirect, public benefit (1990's).

Numerous factors may provide input into where a program is located on the continuum. A sample of factors that shift programs on the continuum are described in Table 5.3.

Table 5.3 Sample Factors Influencing Program Shifts	
Conditions Causing Shift to Direct Benefit	Conditions Causing Shift to Indirect Benefit
1. High unemployment and need for job creation	1. Low unemployment
2. Need to expand small business creation	2. Satisfactory economic growth
3. Slow economic growth	3. Short-term results/benefits not essential
4. Short-term results/benefits needed	4. Institution development a priority
5. Concern over foreign ownership of industry	5. Concern about WTO rules
	6. Lack of concern over foreign ownership

The factors in Table 5.3 can have an influence on economic and regional development and in policies and priorities. For example, in periods of high unemployment, the need for job creation increases and may influence program designers to design programs to help create new jobs. Figure 5.4 shows the rise and fall of unemployment rates over the period when federal-provincial economic development programs have been in place.



WEPA (second generation) has become a very different kind of program from past federal-provincial agreements. These differences are outlined in Table 5.5.

Table 5.5 WEPA Characteristics Compared to Past Federal-Provincial Agreements	
<p>Examples of WEPA Characteristics:</p> <ol style="list-style-type: none"> 1. Not designed for public access 2. Projects sourced and selected by officials 3. Target applicants: - Institutions/ associations, public sector organizations 4. Some tangible but many intangible outputs (research reports, research institutions, skills) 	<p>Examples of Past Federal-Provincial Economic Development Agreement Characteristics:</p> <ol style="list-style-type: none"> 1. Designed for public access 2. Proposal based program 3. Target applicants: - Small and medium sized business 4. High degree of tangible outputs

WEPA’s characteristics, and the indirect benefits that come from the program, make it unique compared to many of the past federal-provincial agreements.

In order to determine whether WEPAs should continue, an evaluation of priorities must determine which type of economic program is best suited to today’s environment.

6.0 SECTOR/THIRD-PARTY INTERVIEWS

In order to help determine both current impacts and expected outcomes of the WEPA-funded projects, 15 telephone interviews were conducted with industry representatives from a variety of sectors. The candidates selected have expertise in the sectors/industries that received significant levels of WEPA funding, and had the ability to comment on the impact of WEPA funding on the sector as a whole. Interview respondents from each province were identified in consultation with WD and provincial program administrators.

The representatives that participated in interviews are listed in the table below:

Table 6.1 Sector/Industry-Specific Interview Respondents
<p>Alberta</p> <p><u>Agriculture and Food</u>: Rick Tofani, Olds College Centre for Innovation, (403) 507-7971</p> <p><u>Innovation and Technology Advancement</u>: Mel Wong, Executive Director Research and Technology Commercialization, and Bob Wilx, Director of Technology Management, Alberta Science and Research Authority, (780) 427-2084</p> <p><u>Petroleum and Mining</u>: Brad Anderson, Executive Director, Alberta Chamber of Resources, (780) 420-5174</p> <p><u>Forestry</u>: Jim Dangerfield, Vice President, Forintek, (604) 222-5700</p>
<p>British Columbia</p> <p><u>Fuel Cell Technology Development</u>: Chris Curtis, Vice President, Fuel Cells Canada, (604) 822-8061</p> <p><u>Innovation and Technology Development in New Media</u>: Fred Lake, CEO, NEWMIC, (604) 806-5100</p> <p><u>Urban Community Development</u>: Wendy Au, City of Vancouver, (604) 871-6639</p>
<p>Manitoba</p> <p><u>Arts and Culture</u>: Caral Noelle, Business Council of Manitoba, (204) 942-3636</p> <p><u>Economic Development</u>: Greg Dandewich, Vice President, A/President, Economic Development Authority, (204) 944-2012</p> <p><u>Health Research Facilities</u>: Ian Smith, Director General, Institute of Diagnostics, NRC, (204) 983-7526</p> <p><u>Innovation and Economic Development</u>: John Clarkson, ADM, Industry, Manitoba Innovation and Economic Development, (204) 945-8900</p> <p><u>Tourism</u>: Neil McInnis, Manager of Tourism Development, Ministry of Tourism, Manitoba, (204) 945-2307</p>
<p>Saskatchewan</p> <p><u>Film Industry</u>: Kevin Dewalt, Minds Eye Pictures, (306) 359-1573</p> <p><u>Tourism</u>: Roy Anderson, CEO, Tourism Saskatchewan, (306) 787-0570</p> <p><u>Trade and Export</u>: Gerry Adamson, Vice President, Saskatchewan Trade and Export Partnership (STEP), (306) 787-2222</p>

A summary of the interview responses are as follows.

Impact of WEPA projects on each sector – When the respondents were asked if the WEPA-funded projects had an impact on their industry or sector, all 15 respondents answered “yes”. Each respondent was able to describe how the projects had impacted the various sectors. The projects impacted by:

- expanding opportunities,
- providing information,
- advancing value chains,
- enabling research and development,
- attracting human resources,
- encouraging partnerships,
- increasing visibility of sectors and organizations,
- enhancing innovation,
- building capacity, and others.

The interview respondents were asked to comment on the quantifiable benefits provided by the WEPA-funded projects. It was difficult however for respondents to provide quantifiable impacts, because they were not directly involved in the project management and administration, and the projects have only just been completed or are nearing completion in many cases. For some projects, quantifiable benefits will only be observed after a number of years.

Importance of WEPA funding – The respondents were asked about the value of WEPA funding. In all 15 cases, the respondents indicated that the projects would not have gone forward without WEPA funding, or that their progress would have been slower and more difficult. WEPA played an important role not only in accelerating or causing the project to happen, but also in helping to leverage other funding from the private sector.

Other factors that influenced project outcomes – Survey respondents reported that existing provincial infrastructures supported project outcomes. In addition, industry expertise and specific competence have advanced projects quickly. WEPA funding supported the strengths already evident within the province.

The barriers to success identified by the respondents included an inability to secure long-term funding for sustainability after WEPA, funding has expired, the

overall economic downturn evident in western Canada, and specific factors inherent in each of the industries.

The role of industry in future government funded programs - Interview respondents were asked to describe what they believe the role of industry representatives should be in future public funding programs such as WEPA. The respondents generally felt that industry should be involved at an advisory level, helping government to determine the priorities for the sectors. It was reported that industry wants to be engaged through face-to-face communication. A few of the respondents felt that industry organizations could assist in the administration and implementation of such funding programs, but only if it has capacity/expertise and is non-partial.

The ability of WEPA to address industry-specific priorities - Thirteen (13) of the 15 respondents said that their sectors' priorities could be addressed through a funding program such as WEPA. One respondent did not feel WEPA had the ability to address his industry, because this industry's priorities would require more funding than WEPA could provide. Another respondent indicated he would prefer industry-specific WEPA-type funds (i.e. tourism only), so that his industry would be guaranteed a certain level of support.

The respondents made suggestions to improve funding efficiencies. They suggested:

- multi-year funding,
- larger amounts of funding allocated to a smaller number of projects,
- tax credits,
- legislation changes,
- skill development programs,
- awareness campaigns and events,
- capitalization programs, and others.

7.0 CASE STUDIES

Ten (10) case studies of WEPA-funded projects have been compiled. These case studies offer a background related to a select group of projects. Each case study provides information about project descriptions, funding structures, timelines, stakeholder involvement, project impacts, next steps planned along with a summary of success factors and considerations for the future. Lessons can be learned from each of these case studies that can be applied to future government funding programs that are similar to WEPA.

Methodology

Each case study was identified in collaboration with WD representatives and provincial authorities. Case studies were chosen to represent a variety of sectors and a variety of funding levels. Background information and contact names were gathered from the project authorization form provided by WD. Information related to each of the projects was collected through in-depth telephone interviews. A total of twenty interviews were completed. In addition, written reports, project websites and background literature was reviewed to provide a thorough understanding.

Case Studies have been prepared as follows:

- | | |
|------------------|---|
| British Columbia | A combination of fuel cell projects representing an investment of approximately \$13 million. |
| Alberta | Four case studies: <ul style="list-style-type: none">- Bison Meat Quality Research- George W. Govier Centre- National Nuclear Magnetic Resource Centre- Centre for Social Entrepreneurship |
| Saskatchewan | A compilation of three infrastructure projects contributing to a Research Park and to the advancement of petroleum technology: <ul style="list-style-type: none">- Petroleum Technology Research Centre (PTRC)- Greenhouse Gas- CO2 |

Manitoba

Four case studies:

- St. Boniface Research Centre: Filmless Radiology
- Gimli Harbourfront Expansion
- North End Renewal Project: SEED Winnipeg Inc.
- St. Boniface General Hospital Centre for Health Research

Case Study Findings

Each of the WEPA funded projects that was selected for case study development demonstrated a strong connection to stakeholder need for economic and social development. The rationale for funding support was appropriate to the targeted priority areas in each province.

Each of the selected projects has demonstrated early signs of success. Although some of the projects have had a limited amount of time to generate results or to provide direct impacts, it is still possible to identify positive outcomes that have been achieved. Impacts include:

- the acquisition of leveraged dollars;
- advanced research and development;
- new infrastructure, products and services;
- commercialization opportunities;
- exports of technology and product;
- community development;
- job creation; and
- improved partnerships and working relationships amongst all levels of government, (federal, provincial and municipal).

Through analysis of each of the case studies, it is possible to identify a set of factors that have contributed to the overall success of each of the projects. In addition, analysis has identified factors that could limit future success if corrective measures are not taken.

1. Successful projects have identified champions that provide leadership throughout the development and implementation stages of the project. (i.e. Fuel Cells)
2. Successful projects demonstrate a synergy and partnership between various levels of government and project stakeholders. (i.e. Gimli Harbourfront)
3. Skilled project management is a necessary component of the successful project. (i.e. Healthcare research at St. Boniface Hospital)
4. Where projects are significantly large, a phased approach to implementation with staged goals and objectives is effective. (i.e. Gimli Harbourfront)
5. Successful projects demonstrate an immediate need for the outcomes of the project. (i.e. Bison Meat development, Winnipeg North-end Revitalization)
6. Successful programs establish stakeholder support and “buy-in” as well as market potential prior to launching a new service or product. (i.e. Filmless Radiology)
7. Research and development projects require an on-going commitment from government to provide operational funding. Many research and development projects have been developed with the concept that they will become self-sufficient over a rather short timeframe (3 – 5 years). In reality, self-sufficiency may be an unrealistic goal. Private sector industry, with a limited pool of financial resources, appears to be somewhat willing to purchase the services of R&D facilities on an “as-need” basis however, will not willingly contribute to facility operations. When funding the development of R&D facilities, government must address the need for long-term operational funding as part of the commitment. Otherwise, quality infrastructure will be under-utilized or allowed to become idle over time. (i.e. Govier Centre, The Petroleum Research Centre, etc.)
8. Like-minded agencies can benefit from integrated marketing strategies to increase stakeholder awareness and to offer coordinated services to potential purchasers of services. (i.e. The three petroleum research facilities in the Regina research Park; PTRC, ITC and GTC)

7.1 Fuel Cells Canada - British Columbia

Introduction

The Fuel Cell Industry - A fuel cell is an electrochemical device that converts the energy resulting from a chemical reaction between hydrogen and oxygen into electricity. Fuel Cells have numerous uses and applications including automotive transportation, stationary sources of electricity and heat, residential electricity source, portable batteries, manned space missions, and many military applications.

The first fuel cell powered bus was used commercially in Chicago in March, 1998. Most major automobile manufacturers have fuel cell powered prototypes. Light-duty automotive applications are seen by many as the largest market opportunity for commercial fuel cell technology. The most developed market can be found in stationary sources of electricity and heat.

Benefits of fuel cell technology include significantly decreased air pollution, use of a renewable resource as energy, increased fuel and electricity efficiencies, and a quieter and more reliable source of power.

Some of the key challenges have been the limited availability of hydrogen, the lack of existing fuelling depot infrastructure, and the fact that fuel storage density for fuel cells is significantly lower than for gasoline and other resources used historically. (Pure hydrogen occupies approximately 3,000 times the space of gasoline for comparable usage).

Commercialization has been a slow process, but seems to be gaining momentum for a number of key reasons:

- Energy use is expected to increase significantly over the next two decades, according to the National Bank Financial and Annual Energy Outlook, Energy Information Agency, US DOE, 2001.
- Fossil fuel processing and distribution costs are increasing.
- Investors have been increasingly willing to support fuel cell research and development efforts.

- Concerns about global warming caused by rapidly increasing carbon dioxide and other greenhouse gases are becoming widespread.
- International regulatory changes have and continue to increase requirements of cleaner fuel consumption. Europe is seeing a trend towards 'emissions trading' where corporations are decreasing emissions to meet regulations and are selling excess reduction credits to other corporations. The United States is offering incentives and tax credits for corporate emission reduction. Canada's policy will likely follow the Kyoto agreement, the draft of which proposed a 6% reduction in emissions in Canada.
- Toxic pollutants damage the environment and people's health (particularly in larger urban centers). An estimated 5,000 Canadian deaths each year can be attributed to air pollution.
- Currently energy security and price are unreliable because world oil resources are decreasing and are largely not controlled by the heavy energy-using nations.
- Deregulation in the electricity supply industry is changing the nature of the industry. New companies are offering on-site power generation, which has the potential to entice consumer interest and challenge existing electricity supply utilities.

Fuel Cells Canada Project - The Fuel Cells Canada project has been designed to focus on fuel cell industry development. It included establishing Fuel Cells Canada, building its membership, and using it as an independent expert body to identify, develop and recommend fuel cell demonstration projects to WD for WEPA funding consideration.

This project is consistent with long-standing government support of the B.C. fuel cells industry. Since 1989, the Federal and Provincial Governments have been very supportive of the fuel cell industry in B.C., investing over \$21,000,000 in demonstration and commercialization of fuel cell technology. WEPA funding for this project was restricted to activities and demonstration projects within the province. British Columbia has a strong and significant history in fuel cell development, and is in a position to become a world leader in fuel cells, fuel systems and fuel cell service.

Through the project, the specific functions of Fuel Cells Canada (FCC) were to:

- Work with all levels of government to facilitate, promote and encourage a cluster of industrial developments surrounding existing and new fuel cells and related balance of plant technologies;
- Specifically, work with the federal government line departments (Natural Resources Canada, Industry Canada), providing strategic advice to coordinate fuel cell industrial development;
- Coordinate, facilitate and enhance industry involvement in government initiatives;
- Educate the public, specifically consumers, of the benefits of fuel cell technology;
- Identify, review, develop and coordinate fuel cell demonstration projects for consideration by the WEPA Management Committee;
- Create strategic relationships and partner with non-governmental organizations (e.g. the Canadian Automobile Association) to develop and enhance consumer acceptance of fuel cell technology; and
- Promote, encourage and develop industry participation in Fuel Cells Canada (FCC).

This project was implemented in phases.

- 1) The first phase was the establishment of the FCC organization and other administrative aspects. WEPA provided funding for the establishment of FCC, and provided \$980,000 towards administration, which will cover approximately 77% of costs through to September 30, 2003. Since its establishment, FCC has built a national organization with approximately 45 members who are industry participants and stakeholders.
- 2) The second phase of the project was the development, recommendation and approval of fuel cell demonstration projects. The first of these projects was for XCELLSIS Fuel Cell Engines (a joint venture with Ballard Power Systems Inc., Daimler Chrysler AG and the Ford Motor Co.) to test fuel cell powered engines for BC Transit and Translink buses. While this project began in March, 2001, BC Transit just recently accepted 3 engines for testing in April, 2002.

Nine additional projects have recently been approved for WEPA funding, but have not yet been publicly announced. At this point, all the WEPA funds have been committed and all projects are expected to be completed by the project end date, September 2003. There were more applications made for demonstration projects than there were funds available to support the projects.

All of the projects are at a very preliminary stage and as such, impacts and outcomes cannot be measured at this time. The stakeholders continue working together to support this fuel cell project.

Project Rationale

Both federal and provincial governments have identified progress on fuel cell energy as a priority and an opportunity. WEPA funding accelerated some projects and enabled others. As a result, B.C.-based companies will be in an advantageous position to commercialize fuel cell products sooner than international competitors. The commercialization process will be sped up because WEPA funding was provided to assist fuel cell demonstration.

Fuel Cell demonstration is a critical part of the commercialization process. It is also expensive, which can deter or slow the commercialization process. Demonstration is the research that must be conducted after the initial research and development, but before commercialization can take place. Demonstration involves testing the product until it fails, or testing the limits of the product prior to marketing. It is anticipated that all products will be refined and improved following this testing stage, and that the refined products will be commercialized soon thereafter.

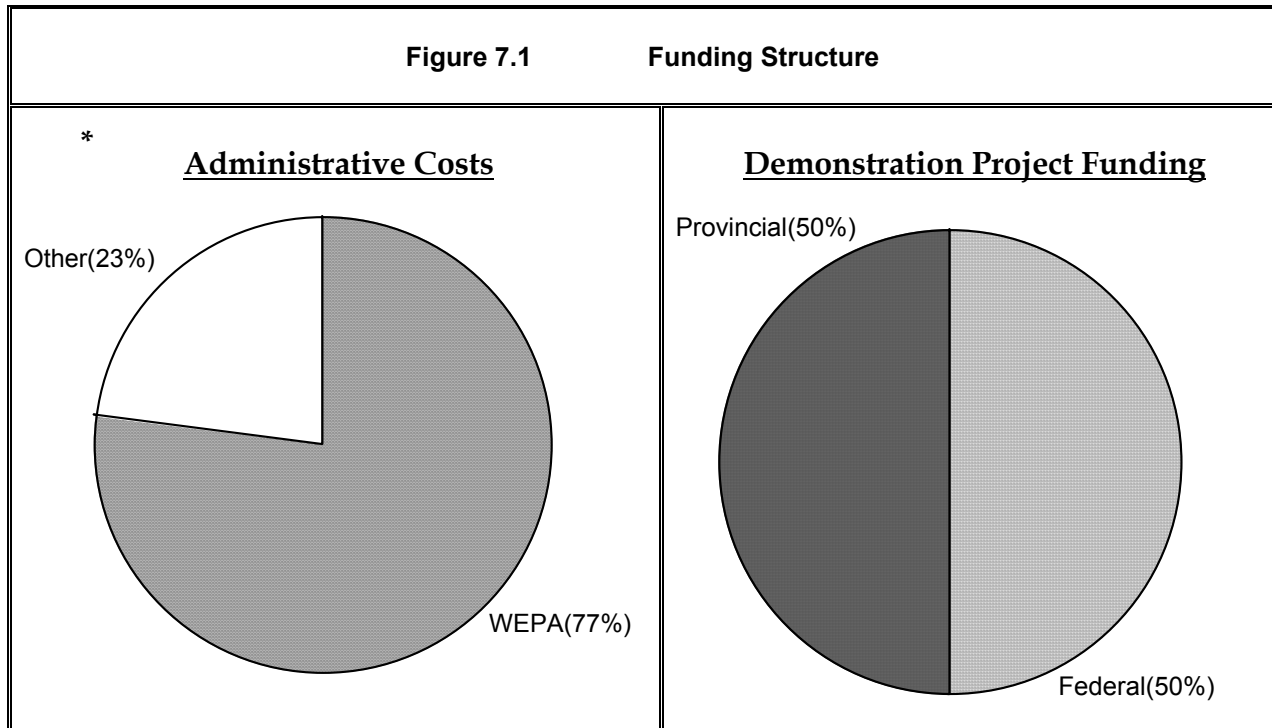
Based on the market potential and the overall value to the environment, there remains a strong rationale to continue support for fuel cell development.

Funding Structure

The Canada-BC WEPA provided a total of \$13 million in funding, split evenly between the Canadian and British Columbia Governments.

FCC's administrative costs were supported to a maximum of \$980,000, with the remainder of their budgetary needs coming from other sources. Another \$12.02 million in WEPA funding was provided to support pre-commercial fuel

cell demonstration projects. WEPA funds will not support projects that are still early in the research and development phase, but rather at the demonstration phases.



* Other funding came from membership fees and contracted services.

Timelines

The WEPA Fuel Cells Project was signed in September, 2000. Prior to November, 2001, there was only administrative work done on the project. In November, 2001, a call was issued for applications for demonstration projects to be funded by WEPA. These applications were reviewed by FCC, who facilitated the selection process for WEPA. WEPA's final decisions for funding of demonstration projects were made in February 2002, however they have not been publicly announced as yet.

Key project activities and established milestones were as follows:

Table 7.2 Activities and Timelines	
WEPA Fuel Cells Project Signed	September 2000
Call for Applications for Demonstration Projects	November 2001
Funding Decisions Completed on Demonstration Projects That Would Receive Funding	February 2002
All Key Personnel Hired	December 31, 2000
Board of Directors' Initial Members Recruited	March 31, 2001
Project Completion	September 30, 2003

Stakeholders

The B.C. WEPA is a partnership between Western Economic Diversification (B.C.) and the B.C. Ministry of Competition, Science and Enterprise.

The first demonstration project funded by WEPA was BC Transit's purchase of three fuel cell bus engines from XCELLSIS Fuel Cell Engines. B.C. Hydro supplied off-peak electricity to produce fuel for the fuel cell-powered buses.

The project selection process was designed as a partnership between all participants. FCC helped companies with their applications for WEPA funding. FCC also helped WEPA keep up-to-date on information and provided some technical knowledge. There was excellent public/private cooperation on this project.

Project Impacts

WEPA funding - The WEPA funding has been critical to the early stages of the fuel cells initiative in B.C. It has had a significant impact on fuel cell providers and developers. The contracts have not yet been made public, therefore specific impacts cannot be disclosed.

Demonstration projects and leveraged funding - All \$12,020,000 of WEPA funding was committed to support demonstration projects. In March 2001,

\$4,575,000 was invested in the XCELLSIS project, \$1,425,000 was invested in BC Hydro, and \$500,000 was given to Fuel Cells Canada. In April 2002, WEPA investment of \$5,520,000 supported projects costing a total of \$14,000,000, showing a leveraged rate of approximately 2.5:1. The approved projects' costing ranged from \$225,000 to \$3,500,000 each, with WEPA contributions ranging from \$1,000,000 to \$105,000.

Job creation - There have been new jobs created as a result of the investment into the fuel cell industry. These jobs are knowledge-intensive jobs. Statistical data has not been collected to date on the number of new jobs created or on other industry measures of success.

Faster technology commercialization - WEPA funding has expedited the commercialization of specific fuel cell technologies, helping B.C. companies to compete globally. As a result of the demonstration projects, companies will have tested products that are ready for commercialization. The companies' investors will likely see returns sooner than they would have without WEPA funding the demonstration project. The demonstration projects also lead to increased opportunities for partners in the supply chain who supply parts, knowledge or labour to these companies.

Reputation as world leader - B.C. is recognized as a world center for fuel cell and related technologies. Over the next 20 years, B.C. will become a global center for commercial fuel cell application and development.

Next Steps

The future development priorities of the fuel cell industry are:

- Continued R&D,
- Market education for market acceptance,
- Demonstration projects,
- Skills and training for workers, and
- Cost reduction,
- Codes/standards/regulations.

These development priorities are common to any new industry.

For the companies whose demonstration projects are being funded by WEPA, their next steps will be product refinement and commercialization.

Success Factors/Future Considerations

The close collaboration between government and industry has been very important to the success of this project.

Some of the factors for success and future considerations related to the FCC project are:

- **Partnerships** - There are opportunities for public/private partnerships for coordination and delivery of programs. Working with a supportive agency like WD helps to ensure an effective program.
- **Government funding is valuable to support industry development** - This kind of program can be an effective tool in supporting industry development, even though quantifiable outcomes from this project cannot be determined at this early date. WEPA allows governments to flexibly fund projects that don't fit within traditional programs and funding structures.
- **Coordination of stakeholders** - Early coordination of stakeholders allows for a longer and more workable project.
- **Business cases** - It is important for large projects to have solid, well-developed business cases.

Acknowledgements

Thank you to the following people for participating in a telephone interview:

- Chris Curtis, V.P. Fuel Cells Canada. Phone (604) 822-8061.
- Franco Zanatta, A/Manager, Innovation, WD B.C. Phone: (604) 666-1327.
- Steve Rhodes, Manager, Partnerships and Coordination, WD B.C. Phone: (604) 666-1311.
- Steven Brydon, Sector Advisor, Fuel Cell & Hydrogen Technology, B.C. Ministry of Competition, Science and Enterprise. Phone: (250) 952-0665.

- Norman Lee, A/Director, Regional Economic Development Branch, and Director Responsible for WEPA, B.C. Ministry of Competition, Science and Enterprise. Phone: (250) 952-0686.

The following sources were used to prepare this case study:

- Internet: www.ec.gc.ca/air/introduction_e.cfm;
www.fuelcellpartnership.org; www.fuelcelltoday.com;
<http://fuelcellworld.org>
- “Fuel Cell Bus Engines get Federal-Provincial Funding” WEPA News Release, March 12, 2001.
- “Fuel Cells Canada Established with Federal-Provincial Funding” WEPA News Release, October 12, 2000.
- National Bank Financial. “Energy Technology, Valuing the Fundamentals: A Detailed Methodology” by MacMurray D. Whale.
- “The terms of the Kyoto agreement”, BBC News. http://news6.thdo.bbc.co.uk/hi/english/world/newsid_38000/38690.stm

7.2 Bison Meat Quality Research - Alberta

Introduction

The Bison Meat Quality Research project was initiated and coordinated by the Northern Alberta Development Council (NADC), a branch of the Department of Aboriginal Affairs and Northern Development located in Peace River, Alberta. The Peace Country Bison Association, which implemented the various project activities, was an important partner.

The goal of the Bison Meat Quality Research project was to increase the knowledge base of bison producers in the areas of raising and processing techniques. The research involved one long-term infrastructure project and two primary research studies:

1. Long-Term Grazing Facility: The purpose of this project was “to establish a research pasture that will be available, over the long-term, to address prioritized research questions associated with bison management.” A facility was constructed at Fort Vermillion, Alberta during the summer of 2000 for this purpose.
2. Meat Quality Study: This study was undertaken to address questions related to spray chilling, blast chilling, and meat quality and grade. (The original intent of this activity, as identified in the Project Authorization Form, was to focus on the effects of different feeding regimes, electrical stimulation, and spray chilling. The objectives were changed during the implementation of the project for a number of reasons.)
3. Short-Term Bison Winter Grazing Project: The purpose of the Winter Grazing project was to explore the winter grazing needs of bison. The experimental pasture at Fort Vermillion was divided into two sections, one with standing grass and one with swathed grass. During the winter, a number of bison grazed in each of the pastures. The bison were later slaughtered in a commercial facility in Edmonton.

The overall objectives of the Bison Meat Quality Research project, as stated in the Project Authorization Form, were:

1. To provide bison producers with scientific research that will help them plan the use of the best feeding and finishing strategies. It is believed that the nutrition of the live animal has a significant influence on the final food product. This objective will be enabled through the experimental pasture that was built at Fort Vermillion.
2. To provide bison meat processors with ways to counteract the impact of “blast chilling” (i.e. rapidly decreasing the carcass quality) on bison meat quality. Blast chilling has advantages such as increased product throughput, but also has the disadvantage of creating tougher meat. This objective was to be achieved by testing the combination of low-voltage electrical stimulation and blast chilling, which was expected to preserve the meat quality. (The electrical stimulation tests were not conducted in the actual project.)
3. To expand the knowledge base regarding the nutritional quality of bison meat.

Project Rationale

The print reports and interview respondents identified a number of reasons for the implementation of this project:

- There is a small but commercial bison industry in Canada and the United States. The demand for bison meat is growing, and is expected to continue to grow. Prior to the research study, little was known about the management, nutritional, and processing requirements necessary to produce high quality bison meat.
- Both projects undertaken were identified as having high priority within the document, *Bison 2000 – A Strategic Plan for Research and Development Needs of the Canadian Bison Industry, June 1999*.
- In northern Alberta, the grain industry faces many challenges. Bison production presents an opportunity for northern Alberta producers to diversify their operations.
- Statistics show that 50% of Alberta’s bison population is located in northern Alberta. Bison are well-suited to

production in northern Alberta because they require relatively small sections of land and can survive through periods of drought.

- In the past, people believed that bison handling techniques were similar to cattle handling techniques. In reality, bison handling techniques are unique. Therefore, there is significant opportunity to conduct research on bison production and processing.

Funding Structure

The total funding for this project was as follows:

Table 7.3 Project Funding	
<u>Description of Expenses</u>	<u>Project Costs</u>
Meat Quality Study	\$160,837
Fort Vermillion Research Pasture	\$112,633
Administration	\$11,476
Total Project Costs	\$284,946
<u>Sources of Financing</u>	<u>Amount</u>
Federal WEPA	\$123,909
Provincial WEPA	\$123,909
Other Funding	\$37,128
Total	\$284,946

There were significant in-kind contributions made to the project. Agriculture and Agri-Food Canada in Lacombe, Alberta entered into a long-term agreement to provide land in Fort Vermillion for the establishment of the bison experimental farm. A ranch supply company provided supplies for the pasture at reduced rates. Volunteers from the Peace Country Bison Association and other organizations helped to construct the pasture. Local producers donated the use of their animals for experimentation.

Timelines

After the first WEPA funds were received, there were long delays in the project start-up. At the outset, the organization that originally agreed to provide the pasture location withdrew from the project. The project coordination team identified a new pasture location at Fort Vermillion, however many people were concerned about the possible spread of diseases between domestic bison herds on the pasture and the bison in the nearby Elk Island National Park. As a result of this concern, there was significant research done in the area of bison handling, and a report was subsequently published. The research determined that diseases would not likely spread, and a pasture was built in Fort Vermillion starting in the summer of 1999.

Table 7.4 Activities and Timelines	
WEPA Funding Began	Summer 1999
Report on Protocol for Handling Bison	1999
Field Day with the North Peace Applied Research Association	1999
Advisory Committee Established	January 2000
Grand Opening and Open House	July 2000
Grazing Research Project	November 2000 to March 2001 (Slaughter in Sept. 2001)
Presentation of Meat Quality Study Results	October 2000 and 2001
Meat Quality Study Report Completed	March 2001
Media Release	November 2000
Quarterly Reports	Ongoing
Field Day	Summer 2001
Grazing Project Report Completed and Presentation of Grazing Project Results	October 2001
Final WEPA Funding	October 2001

Stakeholders

There were many organizations that collaborated to complete this project:

1. Peace Country Bison Association (PCBA): The PCBA was a key partner in this project. It acted as a hands-on advisor to the project by providing direction for research, setting up and fencing the pasture, providing advice on the handling system and the caring of animals, and assisting with other activities. The PCBA contracted Bruce Rutley, an independent consultant and expert in bison, to implement the project.
2. North Peace Applied Research Association: NPARA provided onsite technical support (staffing at Fort Vermillion) to the project.
3. Agriculture and Agri-Food Canada - Lacombe Research Centre: AAFC hosted the Fort Vermillion experimental farm. This organization played a major role in the day-to-day management of the bison and provided input to the project.
4. University of Alberta: The University of Alberta collaborated for the purposes of the Meat Quality Research Study.
5. Alberta Agriculture: Alberta Agriculture provided technical support through its bison specialist, and also provided \$5,000 to the project.
6. Prairie Farm Rehabilitation Association: PFRA Peace River provided technical expertise and assistance with the water infrastructure.
7. Industry: Provided product at reduced rates or use of animals.
8. Métis Settlement and the High Level Tribal Council, Paddle Prairie: These groups provided input through observation and discussion and benefited from the research results.

A steering committee and an advisory committee were established for this project. The advisory committee is composed of 12 representatives from government, industry, and community groups.

Project Impacts

Research-related outcomes – The primary purpose of this project was to conduct research. The reports and outcomes related to this research are as follows:

- Meat Quality Industry Report (and scientific publications): This report answered questions related to spray chilling and blast chilling, and is expected to help improve meat quality. One section of the report addressed the shelf life of bison meat, which will benefit the development of the fresh meat market.
- Winter Grazing Report: This report found that swathed winter grazing pastures do not provide economic benefits to producers. This finding is expected to immediately influence bison management practices.
- A Long-Term Grazing Project facility in Fort Vermillion was established. The facility will enable research that is expected to lead to future decreases in cost of production for bison.
- Established Working and Advisory Committees. The committees enable the identification and implementation of future research at the Fort Vermillion site.
- An “Animal Care Protocol” was written for the Fort Vermillion Experimental Pasture, to ensure that all animals are cared for in a way that meets or exceeds industry and association standards. In addition, contingency, mitigation, and animal handling plans were also written for the Pasture.
- The project has helped to prove that production practices regarding the raising and nourishing of bison may be assumptions based on previous experience with cattle rather than proven facts about bison.

Applicability of research results – Bison producers, marketers, and researchers will benefit from the research findings of this project. The information is widely accessible on the Internet at <http://www.bisoncentre.com/PCBA/> (in the Resource Library). Some of the findings are specific to northern Alberta, while other findings could be applied to any location.

Increase in bison production and marketing – There has been an increase in the number of bison producers over the course of this project. This is demonstrated through the establishment of several new bison herds. In addition, the project has uncovered an opportunity to sell bison meat to grocery chains.

Framework for future collaboration – A framework has been established for the industry to work together in the future. This framework will help to advance the bison industry.

Influence on grading system – The Canadian bison grading system is currently under review. The information from the research studies has been made available to the Industry Bison Grading Committee. Information from the research studies indicates there is further research needed to update the grading system.

Increased industry profile – The work has raised the profile of Alberta’s bison industry. There is a continued recognition that the NADC and the PCBA play an important role in leading research and development. There is also international recognition of the work that Canada is doing in this area.

Client satisfaction – Based on comments from annual general meetings and the general public, the interview respondents report that the level of satisfaction with this project is “good” to “high”. The initial roadblocks in establishing the pasture caused some frustration for those directly involved in the project, however the final results were still achieved.

WEPA funding – The WEPA funding was critical to the establishment of the long-term research pasture. Without this funding, the process would have taken an additional five years to complete.

Next Steps

There is a great deal of research that is still necessary to advance the bison industry. Research topics that will need to be addressed in the future include, but are not limited to:

- The winter grazing requirement of females versus bulls (only bulls were studied in this research project);
- Reproduction;
- Disease control and parasites; and

- Stress management and general management techniques.

The Canadian Bison Association Research Committee has established a Bison Research and Development Working Group, which plans to identify and prioritize research needs on an ongoing and regular basis for the bison industry.

In order to accomplish the required research, it will be necessary to access funding. One possibility is to set up a fund for bison research. It may also be possible to access the Ag Research Fund through Alberta Agriculture for this purpose. A proposal has recently been sent to the Canadian Bison Association to consider diverting some tag funds from bison producers to research.

In addition, there is currently a request for funding from the Diversified Livestock Fund to conduct further meat quality research based on gender. (Currently, only bull meat is sold in the market.)

Success Factors/Future Considerations

In this project, a number of success factors and future considerations have been identified:

- **Individual commitment and expertise** - A number of individuals with commitment and expertise were involved in the project.
- **Association involvement** - There were a number of key associations that were keen and interested in working on the project. The traditional role of the PCBA has been in leading research and development, therefore the PCBA was an appropriate organization to lead this project. In addition, the NADC recognized bison as an important industry for development, and therefore supported this project as well.
- **Economic environment factors** - The timing of the project funding corresponded to the increased challenges in the grain industry and an interest in diversification. The timing of the research also corresponded to the entry of bison meat into the fresh meat market.
- **Clear communication of the funding origins** - The NADC is perceived as the funding agency in a media release and in some project reports. However, the NADC received the WEPA

funding and redistributed it to PCBA for project implementation. It seems that the origins of the funding were not well communicated to the implementers.

Acknowledgements

Thank you to the following people for participating in a telephone interview:

- Allen Geary, Director of Projects and Research, Northern Alberta Development Council (NADC). Phone: (780) 624-6274.
- Bruce Rutley, PhD, P Ag, Applied Research Coordinator, Peace Country Bison Association, Boreal Research and Development. Phone: (780) 835-2241.

7.3 George W. Govier Centre (Fluid and Slurry Transport Centre) - Alberta

Introduction

The George W. Govier Centre (also called the Centre of Excellence for Developing Multiphase Flow and Separation Technologies) is a division of the Alberta Research Council (ARC), and is located in Edmonton. The Centre is named after an Albertan author and writer of the book entitled, *The Flow of Complex Fluids*. The Centre is featured on the ARC website (www.arc.ab.ca).

We test, adapt, improve and develop multiphase equipment and production methods. This specialized facility features:

- 270 m² open area high-head lab
- two explosion-proof 68 m² bays
- main lab accommodates horizontal loop testing
- systems in mobile skids can operate in conjunction with field facilities or with flow loops inside the Govier Centre



The objective of this project was to provide "expertise, infrastructure, and technology, particular to instrumentation and equipment, related to transportation and efficient separation of heavy crudes, oil and slurries. The outcomes will include improved efficiency and cost-effectiveness, and therefore competitiveness in heavy oil, conventional crudes, and gas production in Alberta."

To accomplish this objective, a group of multiphase flow facilities (i.e. the Govier Centre) has been constructed. At the Centre, technologies that help oil and gas companies to be more efficient are researched, developed, tested, and applied.

The Govier Centre was built using two important criteria: mobility and flexibility. The Centre includes mobile skids, which allow it to be transported

directly to the oil field. The Centre's mobility and flexibility allow it to design customized technologies and to transfer the technology rapidly.

The Govier Centre includes seven main components:

1. Compressor-booster;
2. Separation and liquid pumping;
3. Metering-mixing;
4. Slurry flow loop;
5. Paraffin deposition;
6. Data acquisition and storage; and
7. Fluids handling and storage.

Two objectives, which were originally outlined in the Project Authorization Form, were eliminated from the project:

- The development of a pipeline transportation network in Canada; and
- The adaptation of technologies of production from offshore reservoirs such as Hibernia.

Project Rationale

The facility was developed to address a number of R&D problems in the industry. As an example, when two or more fluids flow through the same pipe, it is extremely difficult to measure the phases (also referred to as "multiphase flow metering"). If an oil production company cannot accurately meter its product, it is difficult for that company to improve its cost-efficiency. Custom-built metering devices have the potential to provide more accurate measurements than conventional devices do. The Govier Centre, because of its mobility and flexibility, has the potential to develop customized metering devices.

Another example of the types of R&D problems addressed by the Govier Centre is wax depositions. Paraffin wax is often contained in oil. Deposits of paraffin can clog pipelines and pumps, resulting in less efficient pumping and transportation of oil. The Govier Centre conducts research to decrease the wax deposits, thereby increasing efficiency.

The Research Council recognizes that the oil and gas industry does not have the facilities, the resources, and/or the expertise to develop metering devices and other related technology on its own. Therefore, this facility was built to meet industry needs with a limited availability of funding.

The Research Council has worked to ensure that the Govier Centre does not duplicate services already offered by the Saskatchewan Research Council (SRC), which focuses on slurry flow in a full-scale, permanent facility. Instead, the Research Council works mostly with gasses and liquids using mobile, model-scale facilities.

Funding Structure

The funding for the project is described in the table below:

Table 7.5 Project Funding	
<u>Description of Expenses</u>	<u>Project Costs</u>
Equipment, construction, and commissioning	
Total Project Costs	\$3,980,000
<u>Sources of Financing</u>	<u>Amount</u>
Federal WEPA	\$1,990,000
Provincial WEPA	\$1,990,000
Total	\$3,980,000

The Centre is now fully functioning, and it is expected to be self-sustaining. The operating expenses are low (estimated at \$200,000 per year), because it is staffed by ARC personnel and only operates when work is done for a specific project contract.

Timelines

The project timelines are outlined below:

Table 7.6 Activities and Timelines	
Govier Centre Project Began	April 1, 1997
WEPA Funding Concluded	March 31, 1999
Centre Fully Operational	November 16, 2000

Stakeholders

Since the official opening of the Govier Centre in November, 2000, 11 project contracts have been secured. Some of these projects have been completed, and others are ongoing. Industrial clients include Kvaerner, Shell Canada, Pall Corporation, Imperial Oil, and others.

Project Impacts

New technologies developed - The Govier Centre has developed, adapted and/or tested novel production technologies related to oil transportation, multiphase pumping, separation, metering, and flow assurance. To date, 11 projects have been completed or are ongoing. Industrial contracts have brought approximately \$3 to 4 million to the Centre. It is estimated that 20 to 30 indirect jobs have been created in the oil and gas industry as a result of the Govier Centre.

Technology exports - Technology developed at the Govier Centre has been exported to a company in Malaysia, where a replica of the Govier system is being built. The Govier Centre is cooperating with the Malaysian company to conduct experiments.

Other benefits - The ARC, in its *Addendum to the Summary Report (September 17, 2001)*, identified a number of benefits that the Govier Centre will provide:

- It will help reduce production costs for Canadian oil and gas producers (there is potential to save millions of dollars);

- It will bring increased R&D into Alberta from Canadian and international manufacturers and oil and gas producers;
- It will be an incubator for the development of value-added projects that would be built in Canada and distributed world-wide;
- It will contribute to ARC's vision of being a world leader in technological innovation, will bring new opportunities to ARC, and will help to enhance the expertise of ARC's staff;
- It will provide technologies to improve efficiencies not only in the energy sector, but also in other industrial sectors such as pulp and paper, and water treatment and supply; and
- It will provide increased opportunities to interact with other research and educational institutions.

WEPA funding – The WEPA funding was critical to the development of this Centre, it would have likely not been possible without this funding.

Next Steps

At the outset of this project, the ARC expected that industry would be willing to contribute significant dollars into research and development at the Govier Centre. Unfortunately, it seems that these expectations were too high. The Centre was designed to cover its operating expenses using revenues from industrial projects, however this is difficult given industry's lack of willingness to source projects. It seems that industry expects the ARC to run the Centre at no charge to industry.

The Govier Centre must now find a way to remain sustainable over the long-term.

Success Factors/Future Considerations

The success factors and future considerations identified by the ARC in implementing this project include the following:

- **Willingness of industry to provide resources for R&D** - In this case, there is a significant opportunity for industry to decrease its costs by improving efficiencies through new technology. It was assumed by the project organizers that industry would be willing to pay for the development of such technologies. In reality, it seems that industry is not readily prepared to pay for these new developments.
- **Avoid duplication of infrastructure** - The effort made by ARC to avoid duplicating services provided by other provincial research councils was important in its success and in maintaining positive working relationships.
- **Staff expertise**- The staff at ARC have a high level of expertise in the project area, which contributed significantly to the success of the project.
- **Funding sustainability** - One of the biggest challenges faced by the Govier Centre is how to remain sustainable over the long-term. If it cannot leverage money from industry to sustain operations, and no other funding is secured, the future of the Centre may be compromised.

Acknowledgements

Thank you to these people for participating in telephone interviews:

- Dr. Peter Toma, Distinguished Research Officer, ARC. Phone: (780) 450-5361.
- Dr. Raj Rajan, Research Officer, ARC. Phone: (780) 450-5248.

7.4 National Nuclear Magnetic Resonance Centre - NANUC (University of Alberta NMR Project)

Introduction

The Department of Biochemistry at the University of Alberta (U of A) has established a Medical Research Council Group in Protein Structure. This group, which studies the relationships between protein structures and biological functions with cells, has attained a high standard of research excellence around the world. The Medical Research Council Group initiated the NMR (Nuclear Magnetic Resonance) Project at the University of Alberta.

The primary project objectives were three-fold:

1. To build a nuclear magnetic resonance infrastructure;
2. To provide support for research at a national level; and
3. To achieve collaboration for this project at a national level in order to use Canadian research funding in the most efficient manner possible.

The project was completed in two phases. The first was the purchase of an 800 MHz NMR spectrometer. The second was the construction of a building to house the spectrometer.

The NMR Spectrometer can be described as an instrument that creates “3-D photographs” of proteins, peptides, and chemicals. It creates the “photographs” through the following process:

- Atoms are submitted to a radio frequency pulse;
- By controlling the pulses and manipulating quantum mechanics, it is possible to evaluate how the atoms relate to one another in space and create a “photograph” of dots or a “spectrum” (this process takes 2 to 4 weeks);
- Then, each dot is related to an individual atom in the “analysis” stage. A second map of interactions is created. This map becomes a molecular model or 3-D structure, which is displayed on a computer screen (this process takes 3 months to 1 year).

A spectrometer's performance is highly dependent on its physical environment. The facility at the U of A that has been designed to house the spectrometer in an excellent facility built underground, which results in a significant reduction of vibrations and temperature fluctuations.

Project Rationale

This project was developed to provide infrastructure to support Canadian researchers. Academics had requested an NMR facility to support their research and help them to compete internationally. There were two existing NMR facilities in Canada before the U of A facility was built, one in Montreal and one in Toronto, however these facilities are generally not available to academics.

The project was developed through a collaborative approach. The facility is expensive, but has the ability to serve the needs of many laboratories and researchers across Canada. Therefore, the most appropriate approach was to cost-share the purchase of the equipment and infrastructure.

The project leaders received letters of support from industry that accompanied the funding application.

Funding Structure

The total cost of the project was \$5,802,000. A breakdown of funding is outlined in the following table:

Table 7.7 Project Funding	
<u>Description of Expenses</u>	<u>Project Costs</u>
Building	\$2,050,000
Major Equipment (Approximate)	\$3,200,000
Minor Equipment and Start-up Costs	\$552,000
Total Project Costs	\$5,802,000
<u>Sources of Financing</u>	<u>Amount</u>
WEPA Provincial (ASRA)*	\$1,552,000
WEPA Federal	1,300,000
Other Provincial (Alberta Advanced Education and Career Development)*	1,000,000
Medical Research Council of Canada	900,000
Other Provincial (Alberta Heritage Foundation Medical Research)	700,000
University of Alberta	150,000
University of B.C.	50,000
Simon Fraser University	50,000
University of Calgary	50,000
Alberta Cancer Board	50,000
Total	\$5,802,000

* ASRA and Advanced Education originally committed to providing \$800,000 and \$500,000 respectively. As the project evolved and the implementers learned they would require additional funding, these two agencies agreed to provide additional funding.

The ongoing operating expenses, which are estimated to be \$300,000 per year, are being provided by:

- University of Alberta, Faculty of Medicine;
- Medical Research Council of Canada/Canadian Institute for Health Research;
- National Science and Research Council - Multi-User Facility Access Group; and

- User Fees.

User fees were not applied during the first two years of operation, but have now been implemented in order to fulfill the facility’s cost-recovery mandate. If a researcher cannot access sufficient grant money to use the NMR facility there is a possibility to waive the user fee.

Timelines

The project timelines are outlined in the table below:

Table 7.8 Activities and Timelines	
First funding application made to ASRA and IRAP (provincial agencies)	1996
Funding secured from WEPA (by ASRA and IRAP)	January 1998
Funding received	March 1998
Facility broke ground	August 1998
Occupancy of facility	April 1999
Facility fully operational	June 1999
Grand opening	August 1999
WEPA funding ended (extension on original date)	September 1999

Stakeholders

The concept for the project was developed at the University of Alberta, however nine principle investigators collaborated to help secure funding and realize the project. Together, these principle investigators wrote the project proposal and advocated for its inception. The principle investigators include representatives from the following institutions:

- University of Toronto
- University of Manitoba
- University of Western Ontario
- University of Calgary

- Simon Fraser University
- University of British Columbia
- University of Alberta (three representatives)

An Advisory Board has been established to provide direction and feedback on upgrades, staffing, and other issues. The Advisory Board meets annually, and is comprised of representatives from the Medical Research Council of Canada, the Alberta Heritage Fund for Medical Research, Canadian academia, international academia, and industry. Brian Sykes, the director of the facility, is also a member of the Advisory Board.

A User Committee has been established to resolve any disputes at the facility, such as disputes related to schedule, fees, or performance. This six-member committee is mandated to represent the users and ensure their satisfaction. The User Committee meets on an ad hoc basis and, until now, has only met on one occasion.

Project Impacts

National spectrometry resource - The project has accomplished a national resource for NMR spectrometry. To date, the facility has secured approximately 18 industrial contracts with companies such as Isotechnika Inc, Daniels Fine Chemicals Inc, the National Centre for Upgrading Technology, and Osteopharm Inc. In addition, approximately 25 principle investigators have used the facility, as well as 50 undergraduate, graduate, and post-doctoral students. The users have come from across Canada.

Recruitment and retention - The project has helped to attract people and resources to the University of Alberta; it has been an effective recruitment and retention tool. The project is expected to help to attract additional infrastructure to the University of Alberta. A number of jobs have been created to support the facility, in the areas of business leadership (Bruce Lix), bio-molecular spectroscopy, a chemical spectroscopy, and computer network security.

Industrial benefits - The NMR Facility has the potential to benefit a number of industries, including: pharmaceutical manufacturing and development, medicine, food production/processing, chemical manufacturing and development, proteomics (a continuance of genomics), pulp and paper, and oil and gas (tar sands).

Research applications - Possible applications of the NMR Facility include:

- Assistance in designing certain drugs by, for example, being able to show the structure of a peptide in its disease state.
- Demonstrating how muscles work at the molecular level.
- Direct medical applications. For example, assisting doctors treating asthma patients to select the proper therapy the first time.

Fit with U of A infrastructure --The U of A is pleased with the facility because it fits well within the current infrastructure. The University is confident that users are satisfied with the facility, as past clients have provided positive testimonials of their experiences.

Concept exporting - As a result of the facility's success, a representative from the University of Alberta has traveled abroad to help others design similar facilities. In addition, the facility has been involved in running training sessions and hosting seminars.

WEPA funding - WEPA funding was critical to this project. It provided a significant portion of the total funding, and leveraged other funding.

Next Steps

The University of Alberta is looking to expand the facility by purchasing a 900 MHz or 1000 MHz spectrometer, both of which are still under development. The University is considering collaboration with the developers of this equipment to provide expertise in facility design. Once this equipment is developed, the U of A will need to raise money for its purchase.

Success Factors/Future Considerations

Success factors and future considerations have been identified based on this project, which may be applicable to future projects of this nature:

- **Communication of funding provider** - Because the application for funding was made by IRAP and ASRA on the project's behalf, the project leaders were not, at the outset of the project,

fully aware that the funding dollars had originated from WEPA. Greater awareness of the origins of funds is required.

- **Environmental factors** - There were a number of influencing factors, outside of availability of funding that impacted on the success of this project. There was local leadership from the University of Alberta and support in the form of donated land, there was an appropriate physical environment for the facility, and there was support from industry.

Acknowledgements

Thank you to these project representatives for their time:

- Bruce Lix, Manager, National High Field Nuclear Magnetic Resonance Center. Phone: (780) 492-8530.
- Ryan McKay, Assistant Associate Director. Phone: (780) 492-2700.

7.5 Centre for Social Entrepreneurship - Alberta

Introduction

“Social Entrepreneurship strives to combine the heart of business with the heart of the community through the creativity of the individual.”

Gary McPherson, LLD
Executive Director, CCSE

Social entrepreneurship is a relatively new concept, therefore it is difficult to provide a single, common definition for this term. Essentially, social entrepreneurship refers to collaborative approaches between the business, not-for-profit, and government sectors to find innovative solutions to traditional social problems. Social entrepreneurship relies on people’s cooperation, creativity, and “entrepreneurial spirit” to help advance social causes. An example of social entrepreneurship is when a business-person donates not only financial resources to a non-profit organization, but also his or her business expertise to help the organization be more successful.

The Canadian Centre for Social Entrepreneurship (CCSE) was established to conduct research, deliver education, and address issues related to social entrepreneurship. The CCSE, located at the Faculty of Business, University of Alberta (U of A) in Edmonton, strives to be a recognized leader in strengthening community capability through strategic alliances, creative thinking, and innovative practices. CCSE’s mission, as stated on its website is: *“To build our collective understanding of the scope of social entrepreneurship and to encourage entrepreneurial thinking and approaches in matters of interest between and within the voluntary, private, and public sectors.”*

The CCSE cites its specific goals:

- To become a hub for creating and sharing knowledge and practices of social entrepreneurship in Canada;
- To provide opportunities for dialogue which emphasize innovation in matters of social and economic importance;

- To encourage and support Canadian social entrepreneurs; and
- To position the School of Business [U of A] as a leader in social entrepreneurship.

The CCSE is involved in three primary activities in the area of social entrepreneurship:

1. Research - The purpose of this activity is to advance knowledge that will help all three sectors - public, private, and non-profit - work collaboratively to improve communities, as well as to reinforce education and community engagement activities;
2. Education - The purpose of this activity is to enhance the leadership and management skills of not-for-profit organizations, to engage business people in social entrepreneurship, and to influence core curriculum (in university business schools) so that it encourages social entrepreneurship to a greater extent; and
3. Community Engagement - The purpose of this activity is to provide a forum for all sectors to find collaborative solutions to traditional social and economic problems, and to encourage social awareness within all sectors.

The CCSE provides the following products and services (Documented as of November 2001 -not a comprehensive list):

- Produces, on an ongoing basis, discussion papers and case studies;
- Organizes a Business Leaders' Lunch Series;
- Hosted a "National Dialogue on Social Entrepreneurship" with 20 representatives from across Canada; as well as a dialogue between Edmonton's for-profit and not-for profit sectors called "Strategic Alliances: Seeking Common Ground" with 41 participants.
- Brought visiting executives to speak to students at the School of Business, U of A;
- Partnered to offer a number of workshops, "Social Enterprise - Integrating Mission and Earned Income", "Strategic Alliances Seeking Common Ground", and "Effective Meetings and Effective Public Speaking";

- Created a website at www.bus.ualberta.ca/ccse (or ccsecanada.org);
- Launched an electronic bulletin;
- Participated in a number of consultations; and
- Is seeking to establish a Canadian Network of Social Entrepreneurs (ongoing activity).

To date, the following research papers have been written and posted on the CCSE website:

- Discussion Paper: Social Entrepreneurship
- Discussion Paper: Strengthening the Generational Chain
- Literature Review on Social Entrepreneurship
- Quikcard Case Study (Alberta Dental Services Corporation)
- On the Ground- Profiles of Social Entrepreneurs
- The Voluntary Sector in a Context of Convergence with the Private and Public Sectors

Project Rationale

The fact that not-for-profit and community-based organizations are constantly struggling for resources contributes to the emergence of social entrepreneurship. The challenge to secure resources is intensified when governments decrease community spending and businesses decrease their community donations. Given these challenges, there is a strong need for creative and innovative solutions that capitalize on the expertise of all sectors to help solve social and economic challenges.

Another reason for the emergence of social entrepreneurship is related to societal change. Men and women have turned away from their traditional roles; men are no longer the primary profit-makers and women are no longer the primary community volunteers. In addition, the traditional role of the “company” that exists only to make money has evolved to a notion that companies are now expected to play greater roles in enhancing their communities.

Social entrepreneurship is a very new area. It has been recognized that research in the area of social entrepreneurship lags behind practice. This is the only initiative of its kind in Canada.

Funding Structure

Total funding for this project has been \$400,000 to date. A total of \$300,000 was provided in equal parts by the federal and provincial WEPA program over three years. The final WEPA payment (\$50,000) will be received by the Centre in May 2002. Approximately \$100,000 was provided by the University of Alberta and through private sector contributions.

Approximately three-quarters of the funding has been used for staff salaries. The Centre's focus is on research, therefore the majority of the funding has been put towards intellectual capital. The remaining funds have been used for conferences, events, case studies, etc.

<u>Description of Expenses</u>	<u>Project Costs</u>
Staff salaries (i.e. research) – approx.	\$300,000
Conferences, dialogues, events, etc. – approx.	\$100,000
Total Project Costs	\$400,000
<u>Sources of Financing</u>	<u>Amount</u>
Federal WEPA	\$150,000
Provincial WEPA	\$150,000
Other Funding (U of A and private sector)	\$100,000
Total	\$400,000

Timelines

The time frame of this project was as follows:

Table 7.10 Activities and Timelines	
CSSE Began	March 1999
Official Opening of the CCSE	November 2, 1999
Proposal to WEPA for Funding	January 2000
Notification of Approval for WEPA Funding	Spring 2000
First WEPA Payment Received	Spring 2001
CCSE Programs and Services	Ongoing
Final WEPA Payment Received	May 2002

The first WEPA payment was received approximately one year after the CCSE received notification of approval for funding. This created administrative challenges for the CCSE, however the U of A was helpful in assisting with cash flow issues.

Stakeholders

An Advisory Board has been formed for the CCSE, which tries to meet two times per year. The Board is comprised of thirteen people, and includes the Dean of the School of Business at the University of Alberta who is the chairperson, as well as representatives from for profit, not-for-profit, government, and academic sectors. The Advisory Board does not govern the CCSE, rather it helps to provide direction.

The CCSE has a number of partners throughout North America. The CCSE has partnered with Grant McEwan College and other organizations/businesses to offer workshops. It has partnered with Junior Achievement (JA) to provide a social entrepreneurship award, and to include the topic of social entrepreneurship in JA's training program. Other partners that have collaborated for the purpose of hosting events are: Net Impact Edmonton

Chapter (an MBA student group whose mandate is “business in society”), Enbridge and Capital City Savings, and Toronto Hydro.

In its November 2001 progress report, the CCSE identified its emerging organizational linkages as: Harvard School of Business - Initiative on Social Enterprise, Peter F. Drucker - Canadian Foundation, Ashoka Canada, and Tides Canada Foundation. These organizational linkages have been established for the purpose of working together on common issues and events.

Project Impacts

The impact of the CCSE is long-term and intangible and is not being actively monitored, tracked or documented. Still, a number of positive impacts have been noted through research and interviews.

Employment - There are currently three people (one director and two associate directors) who are responsible for coordinating and implementing the program activities; these three positions are part-time. A part-time administrative person has been hired. The case studies are contracted to outside agencies.

Satisfaction - Satisfaction of services offered by the CCSE is evidenced by the number of electronic bulletin subscribers (1200 from 10 countries). There have been telephone calls made from people who are interested in the topic of social entrepreneurship who indicated that they have “no where else to go” to find information, to identify potential speakers for events, as well as inquiries from students who want to do PhDs in this area. To date, the business community has provided a great deal of moral support to the Centre.

Events and projects completed - A significant number of events and projects have been completed to date that are useful to business people, communities, and government representatives. The Case Studies serve as “best practices” that communities can seek to replicate. The workshops and dialogues have enabled communication. The electronic newsletter has attracted 1200 subscribers from 10 countries. A number of the products and services help business students to learn about social entrepreneurship; these students are the business people and community leaders of the future.

WEPA funding – WEPA was critical to the establishment of this Centre. Without WEPA funding, the project would not have been possible. Now, there is a need to secure long-term funding so that the project can continue.

Next Steps

Funding will be an ongoing challenge for the CCSE. The CCSE provides long-term, intangible benefits that are difficult to measure. This makes it difficult to attract funders.

The CCSE has identified a number of possible action plans to ensure sustainability:

- Work with the private sector to secure contributions;
- Develop tools (i.e. frameworks) that can be sold, and organize conferences and events on a cost-recovery plus profit basis; and
- Receive research grants through agencies such as the SSHRC (The Federal Government’s funding body for university-based research).
- A private donor has been identified, and is prepared to contribute matching dollars to the Centre.
- The CCSE is hoping to gain stronger connections with the University Faculty, because this would provide more credibility when seeking funding.
- In the future, the CCSE will focus internally and attempt to influence the U of A’s School of Business curriculum, while maintaining its national focus. It also hopes to be able to provide information in both French and English. The CCSE plans to establish a national network of researchers in the area of social entrepreneurship.

Success Factors/Future Considerations

The CCSE has identified a success factors and future considerations through the implementation of this project:

- **Variety of perspectives engaged** – The people involved in this project represent a mixture of all three sectors. This provides a

well-rounded perspective to the project, and ensures that the views of all stakeholders are considered.

- **Economic environmental considerations** - Exploring issues of social entrepreneurship requires reflection. The fast-pace of business, government, and not-for-profit sectors is not conducive to reflection. The university environment is one where academics have greater opportunity to reflect, and can therefore successfully explore this issue.

Acknowledgements

Thank you to the following for participating in a telephone interview:

- Gary McPherson, Executive Director of CCSE. Phone: (780) 707-6786.
- Phyllis Woolley-Fisher, Associate Director. Phone: (780) 492-0187.

Sources used:

- CCSE Website: www.bus.ualberta.ca/ccse
- "Literature Review on Social Entrepreneurship" by Sherrill Johnson, Research Associate. Published: Canadian Centre for Social Entrepreneurship, November 2000.
- "WEPA Progress Report - March 1 to November 30, 2001" by CCSE.

7.6 University of Regina/Regina Research Park Project Cluster - Saskatchewan

Introduction

Three projects funded under the Canada/Saskatchewan WEPA benefit the University of Regina (U of R) and the adjacent Regina Research Park (RRP). This cluster of energy and environmental infrastructure projects constitutes an important contribution to growth in scientific research capacity of the U of R and of the recently established RRP. The projects are listed as follows:

- Petroleum Technology Research Centre (Project #5875-2-P1)
- International Test Centre for Carbon Dioxide (CO₂) Capture (Project #5875-3-2)
- Greenhouse Gas Technology Centre (Project #5875-3-26)

These projects are examined as a cluster in this case study because of their close research and development linkages, their physical proximity to one another in the RRP and their important contribution to the advancement of the scientific research community centered at the U of R.

Regina Research Park - The RRP is a development of the Saskatchewan Opportunities Corporation (SOCO), formerly a provincial crown corporation. In late March 2002, the Government of Saskatchewan announced integration of SOCO assets into the Crown Investments Corporation (CIC), the holding company for provincial crown corporations. With this change, the RRP and its counterpart research park in Saskatoon, Innovation Place, come directly under CIC. While the parks are operated by CIC, land for construction of research facilities is leased from the U of R and the University of Saskatchewan (U of S), respectively.

The RRP is located immediately adjacent to the University of Regina and was initially created by the University in 1993-94. In 1996-97, the University approached the Government of Saskatchewan with a proposal for a master plan for the Research Park. The proposal would involve SOCO in a research park partnership with the U of R in Regina.

With support of the Regina Regional Economic Development Authority and the City of Regina, the partnership was formed, creating one of Canada's newest

research and development parks. Priorities for this newly created Research Park are:

1. Enhanced petroleum recovery,
2. Environmental sciences,
3. Analytical services, and
4. Information technology.

Currently, the 110-acre site has two existing buildings, two recently completed facilities and two more in active planning.

It was intended that the two research parks (RRP and Innovation Place, Saskatoon) would complement each other, with the same management structure but each with their own particular areas of focus and specialization.¹ To date, the complementary relationship seems to be functioning as intended, although there continues to be concern about the potential for duplication and overlap in the future.

Project Rationale

Each WEPA funded project related to the RRP has a unique rationale, yet there is a common theme. The common theme is the establishment of infrastructure facilities to advance research and development into topical issues related to energy and environmental technologies, and in turn, to contribute to provincial economic growth through research and development. The facilities are located in Saskatchewan because of the existence of unique petroleum development and production challenges in the province, because of the importance of increased oil and gas production to diversification of the provincial economy and due to a growing concern about the impact of greenhouse gases (e.g., CO₂) on climate change.

Petroleum Research Centre (PTRC)

The rationale for the facility is to advance research to enhance the production and value of Saskatchewan's petroleum resources to contribute to economic

¹ "Opening of Regina Research Park eagerly anticipated by industry, government partners", Regina Leader Post, April 19, 2000, Regina.

diversification of the province, while fostering improved understanding of environmental impacts.

A key problem facing the Saskatchewan petroleum industry is that only 15 per cent of proven resources can be recovered using conventional technologies. With new technologies such as horizontal drilling developed by the SRC and enhanced oil recovery through CO2 injection, an estimated further 2 to 3 billion barrels of oil can be developed in the future.²

The PTRC is a joint venture between the Saskatchewan Research Council (SRC), the U of R, Saskatchewan Industry and Resources (SIR) and Natural Resources Canada (NRCan).

The mission of the PTRC is to be *“an internationally recognized innovative leader in the petroleum research and development area that delivers world class basic and applied research for the benefits of the people of Saskatchewan, Canada and our customers around the globe.”*³ The focus of research is on geo-sciences, petroleum development, petroleum upgrading, environmental impacts and enhanced oil recovery.

The PTRC, a federal not-for-profit private corporation, operates, in conjunction with the SRC and the U of R. It houses specialized laboratories, offices, research and pilot plant equipment in a 60,000 square foot facility. The PTRC is located in a new building constructed and owned by the RRP. It officially opened in October 2000.

The Centre is governed by a 14-person Board of Directors and is currently chaired by, Mr. Frank Proto, former Chairman of Wascana Energy. Nine members of the Board represent petroleum companies operating in Saskatchewan, with remaining members representing the U of R and the Government of Saskatchewan. The PTRC also has a technical committee to provide advice on petroleum research direction.

The capital costs were \$10.8 million. Approximately 50 researchers, support staff and graduate students currently work at the PTRC. These individuals are drawn from the Engineering Faculty of the U of R and the Saskatchewan Research Council.

² “Petroleum research takes a big leap forward”, Regina Leader Post, April 19, 2000, Regina.

³ Petroleum Technology Research Centre, Mission Statement, Website accessed April 26, 2002..

One person is employed directly by the PTRC; the General Manager. The GM provides a limited coordination function for the scientists and staff employed by the University and SRC, coming under the umbrella of the PTRC. The PTRC strives to operate as a virtual company. Although there have been recent efforts to market more collaboratively under the PTRC brand, the SRC and the U of R continue to be free to independently market their respective services directly to industry.

International Test Centre for CO₂ Capture (ITC)

The principle rationale for the International Test Centre for CO₂ Capture (ITC) is to research and demonstrate leading-edge technologies for capturing CO₂ before release to the atmosphere, from coal and petroleum powered electrical generating stations.

Coal-fired electrical generating stations and large energy intensive industrial facilities such as refineries, fertilizer plants and pulp mills represent significant components of the Saskatchewan economy, as well as many other industrial nations. These facilities generate and emit large volumes of CO₂, the leading greenhouse gas. The Kyoto Protocol points to the need for nations to work toward reducing emissions of greenhouse gases that contribute to global warming.

The ITC is a CO₂ capture and test facility developed as a partnership between the University, the province, SaskPower and industry sponsors. The facility was developed in advance of the establishment of the Greenhouse Gas Technology Centre (GTC) with the intent that it would be integrated into the GTC during construction.

The test facility has two major components: 1) a semi-commercial scale technology demonstration plant unit at the SaskPower Boundary Dam electrical generating station; and 2) a pilot test unit for technology development and screening located at the U of R.

The first component of the project involved a major refit of the existing semi-commercial CO₂ capture pilot unit at Boundary Dam, near Estevan. This unit was not in use at the time. It is a chemical absorption unit with the capacity for separating four tons/day of CO₂.

Because the Boundary Dam component is too large and too expensive for technology development studies, the second component of the project consisted of the construction of a pilot plant located at the U of R. The pilot plant is small enough to provide flexibility and versatility of operation, yet large enough to gather data to be used for scale-up purposes. Technologies will be tested and proven at the pilot plant level to ensure that technology demonstrations will be successful at the Boundary Dam plant. The Regina plant will also be used for new technology development.

The governance of the ITC consists of a steering/advisory committee of three government representatives (i.e., Government of Saskatchewan, Government of Alberta and the Federal Government), seven industry representatives and a U of R representative. A Management Committee provides day-to-day direction for the facility.

Capital costs are about \$8.5 million, including a \$4.0 million in-kind contribution from SaskPower in the form of the existing Boundary Dam facilities. The U of R also provided a \$1.5 million in-kind contribution for the Regina site in the form of equipment and infrastructure.

The implementation of the ITC is proceeding according to plan at both sites. The ITC will employ three full-time researchers and an operating engineer. With new research funding the ITC is expected to support several graduate students taking advanced training in CO₂ recovery.

The two facilities are to be used for technology demonstration as well as for conducting final design of commercial applications. Other uses include testing the technical feasibility of proposed processes prior to commercial design, evaluating process integration with overall systems and evaluating the economic feasibility of various techniques proposed after laboratory and pilot plant studies.

Greenhouse Gas Technology Centre (GTC)

The primary rationale for the Greenhouse Gas Technology Centre (GTC) is to help Canada effectively respond, with a world class facility, to the challenges of greenhouse gas emissions. The capacity and expertise developed at the Centre will help realize a commitment of the partners to the creation of research

infrastructure to explore new energy and environmental technologies in response to the Kyoto climate change protocol.

Fossil fuels are a major natural resource in Canada. Use of fossil fuels contributes to greenhouse gas emissions with about 30% of Canadian CO₂ emissions coming from fossil fuels. Most of the fossil fuel emissions originate in western Canada, particularly in Alberta and Saskatchewan from oil and gas production and coal burning power generating plants. Capturing, using, sequestering and storing greenhouse gases, particularly CO₂ was identified by the federal Climate Change Issue Tables, as one of the key measures for mitigation of greenhouse gas emissions.

The GTC is a new facility in the field of climate change technology, created to conduct leading-edge research on reducing greenhouse gas emissions, especially emissions produced by the energy sector. Research conducted at the centre will “help Canada respond to its international environmental commitments on climate change, while pioneering the global reduction of greenhouse gas emissions over the long term.”⁴

Establishment of the new facility, to be owned and operated by the U of R, is a partnership of the federal government, the provincial government and the U of R. The laboratory, pilot plant and office facilities to be operated by the GTC are located in a 25,000 square foot expansion of the U of R-owned maintenance building, situated in the Research Park. The facility will house all of the components of the ITC, except the facilities located at the Boundary Dam site. Capital costs are estimated at \$5.9 million.

A further \$4.5 million has recently been announced from the Canadian Foundation for Innovation (CFI) to provide additional equipment.

In addition to the International Test Centre for CO₂ capture, the GTC will house the following research units:

- Low temperature separation unit;
- Membrane separation unit;
- Co-generation unit;
- Community energy systems unit; and the
- Clean coal technology unit.

⁴ “Funding Announced for Centre Dedicated to Greenhouse Gas Research,” Western Economic Diversification Canada, Saskatchewan Economic and Cooperative Development and University of Regina, Joint Press Release, March 6, 2001, Regina.

The facility will allow for expansion of greenhouse gas related research activities and research into optimal energy strategies, including the use of micro-turbines, and the co-generation of heat and electricity. The CO₂ capture technology research will be expanded from the chemical absorption processes to membrane separation, as well as other new generation technologies.

Planned governance structures include a Board of Directors, similar to the PTRC, with members drawn from the oil and gas sector, power generation sector, renewable energy sector, federal and provincial governments and the research community. (The GTC may use the same steering/advisory committee already established for the ITC.)

Funding Structure

The following sections outline the capital investment costs and projected operating costs for the energy and environmental research facilities funded under the WEPA program.

Capital Investment Costs

Capital costs for the three projects, totaling \$25.7 million are summarized in Table 7.11. An initial feasibility study of \$20,000 for the Greenhouse Gas facility was funded by WD, followed by a design study of \$435,000 shared by WD and the U of R.

Table 7.11 Capital Costs, Energy and Environment Project Cluster					
Cost Component/ Partner Cost Shares	Petroleum Technology Research Centre	International Test Centre for CO2 Capture	Greenhouse Gas Technology Centre	Greenhouse Gas Centre Feasibility & Design Study	Total
	\$ 000 millions				
<u>Cost Component:</u>					
Buildings	4,800	4,000	2,830	0	11,630
Equipment	6,000	4,500	2,830	0	13,330
<u>Partner Cost Shares:</u>					
WEPA WED	3,000	1,500	0	220	4,720
WDP WED	0	0	2,830	0	2,830
WEPA SECD	3,000	1,500	2,830	0	7,330
Other provincial ⁵	4,800	4,000	0	0	8,800
U of R ⁶	0	1,500	310	235	2,045
Total	10,800	8,500	5,970	455	25,725

Operation and Maintenance Costs

Estimated operating costs of the GTC are \$400,000 initially, growing to \$570,000 per year thereafter. A total of \$2.7 million in operating funds for the GTC has been secured from 12 public and private fund partners to cover the first 5 years of operation. No WEPA funds were approved for operation of any of the facilities, in line with one of the key funding principles of WEPA – “projects need to demonstrate future viability based on self-generated operating funds or provision of operating funds from other public or private sources.”

⁵ SOCO provided \$4.8 million for construction of the building to house the PTRC; for the CO2 initiative, Sask Power provided the existing Boundary Dam building and equipment valued at \$4.0 million in-kind.

⁶ The U of R provided \$1.5 million in equipment and infrastructure for the CO2 facility.

Petroleum Technology Research Centre

The original PTRC operating cost estimates included projected actual and in-kind expenditures by the units of the SRC and the U of R, and totaled \$3.3 million growing to \$7.6 million over the five year period of the WEPA. The actual operating budget for the PTRC, apart from the SRC and U of R units, was less than \$1 million annually beginning in 1998-99, growing to somewhat more than \$1 million in 2002-2003. These operating funds were provided under a five-year operating agreement with NRCan and SIR.

It was anticipated that industry would provide additional annual operating funding for the PTRC. However, advice provided during interviews indicated that this has not happened in line with expectations due to major restraints on research spending by the petroleum industry.

Industry has been involved in cost sharing of projects related to enhanced CO₂ extraction of conventional oil and Vapex 3 (solvent) extraction of heavy oil. Nevertheless, it was reported that the petroleum firms and petroleum industry investment funds are reluctant, at the present time, to invest in new research and development without a high level of practical application and guaranteed short-term payback, in terms of incremental profits.

The PTRC, in cooperation with its partner units within the SRC and the U of R, is currently developing a five-year business plan for petroleum research and development coming under the umbrella of the PTRC. At the same time, because the operating funding agreement for the PTRC expires at the end of the current fiscal year, NRCan and SIR have recently commissioned two external consulting firms to review, respectively, past and future operations of the PTRC. It is anticipated that these reviews, scheduled for completion by the end of May 2002, will contribute to decisions by the sponsoring federal and provincial departments in regard to future contributions towards annual operating costs of the PTRC.

Centres for CO₂ Capture and Greenhouse Gas Technology

Generation of operating funds from industry and government sources for the ITC and GTC are reported to have proceeded slightly more quickly than anticipated. The catalyst of WEPA funds for the capital infrastructure and recent approval of CFI funds for additional equipment for the GTC is reported to be helping to leverage industry support. It is expected that there will be a need for

additional operating funds from other sources for the GTC once it begins to pursue the broader facets of its mandate for research and development into alternative renewable energy sources.

Timelines

Construction of the facilities has occurred over a period of four years, beginning in 1998. The specific timeline for each project, from the project funding approval stage through to official opening of the facility, is summarized in Table 7.12.

Table 7.12 Activities and Timelines			
<u>Type of Activity:</u>	Petroleum Technology Research Centre	International Test Centre for CO2 Capture	Greenhouse Gas Technology Centre
	<u>Date of Activity:</u>		
WEPA Funding Approval	August 1998	December 1999	January 2001
Beginning of Operations	July 1999	October 2000	July 2002
Official Opening of Facility	October 2000	September 2002	September 2002

Realization of the full objectives of the new organizations is expected to take place over a period of 10 to 15 years. Full cooperation and support of all public and private stakeholders involved will be essential for the objectives to be successfully achieved.

Without growing and continuing private sector financial support for fee-for-service research and development, the centres will have difficulty achieving viability. Absence of or reduced levels of industry support will require increased public financial support towards operating costs of all three centres, if they are to achieve their intended objectives.

Stakeholders Involved

A number of public and private sector stakeholders are involved in all three projects. Public institutions of critical importance to the development and implementation of the projects included the Faculty of Engineering and the Office of the Vice-President, Research and International Departments of the U of R, the Government of Saskatchewan, NRCan, SaskPower, the Research Park, SRC and the Alberta Research Council.

From the private sector, organizations such as Nexen (formerly Canadian Occidental and Wascana Energy), Encan (formerly Pan Canadian Petroleum and Alberta Energy), Luscar Coal and TransAlta are providing financial and research direction support. Other key stakeholders include the Regional Economic Development Authority in Regina and the City of Regina.

Funding organizations include the CFI, the National Science and Engineering Research Council (NSERC) and WEPA.

Indications are that there is a high level of interest in the scientific community across Canada and internationally in the progress of the new facilities. The centres provide a unique international focus on addressing challenges and problems related to the use of fossil fuels and the environment.

There are some linkages being established among the PTRC, the ITC and GTC at the industry level, with several companies having representatives on each of the respective governing boards/committees. An international technical advisory committee will also be established to advise the GTC Board on research and development directions.

Project Impacts

The three WEPA projects are reported to have had several significant impacts to date. Impacts are more qualitative, than quantitative at this stage because the centres are still in the early stages of operational start-up. Reported impacts include the following:

Regina Research Park - Economic infrastructure and facilities resulting from the three projects have been very significant and timely in terms of contributing

to growth and expansion of the RRP. The facilities are the foundation for realizing the strategic priorities of the RRP in regard to establishment of knowledge-based R & D focal points in petroleum and environment technologies.

Enhancement of U of R research capacity – The state-of-the-art laboratory and pilot scale facilities are already attracting leading researchers and graduate students in petroleum engineering and related environmental technologies. It is anticipated that the depth and breadth of expertise associated with the centres and the U of R Engineering Faculty will continue to grow and be increasingly recognized in international circles in the future.

Provision of industry services – Increased expertise in applied petroleum engineering to address critical challenges related to issues such as enhanced oil recovery, utilization of CO₂ and the reduction of greenhouse gases is welcomed by industry. The centres are already demonstrating (e.g., CO₂ capture and utilization) that, with industry financial and technical support, problems can be addressed in a cooperative manner and can benefit the whole industry.

Fostering industry partnerships – Benefits in terms of improved linkages among universities, industry partners and governments are already resulting from the creation of the centres. It is anticipated that the centres will continue to foster advancement of a cooperative problem-solving approach, in partnership with the petroleum industry.

Involvement of industry representatives on the Boards and technical committees of centres will strengthen the relationship between the centres and industry. To the extent that it can, industry financial support for annual operating costs and specific research projects will help strengthen partnerships.

Promoting economic growth – One measure of the contribution of the RRP towards economic growth is the value of annual goods and services purchased plus annual payroll for all tenants combined. For 2001, this measure reached \$100 million, a significant value, considering the RRP was initially announced in 1993-94. This level of economic impact compares favorably with the \$250 million currently generated annually by Innovation Place in Saskatoon. The main source of growth to date for the RRP has been in information technology but it is anticipated that the centres will further contribute to economic growth in the future.

Next Steps

The PTRC and ITC are operational and the GTC will become operational by summer 2002. The three main objectives for the centres over the next three to five years will be as follows:

- Advance science and innovation in the fields of petroleum engineering, energy and the environment;
- Increase financial self-reliance based on annual government contributions and/or fee-for-service client utilization of the new research and development facilities; and,
- Foster and build partnerships with the petroleum, energy and environmental industries, as well as linkages with other disciplines (e.g., social sciences, economics, policy, regulatory aspects, computer science, etc.).

Management of the centres is pursuing a number of steps to build the organizations towards financial and technical viability. For example, strong linkages have been developed at the technical level between the U of R, the centres and industry, but there is need to strengthen relationships with senior management within industry. Strong senior management support for the work of the centres may help to build North American and international recognition and support.

Since the targeted industry clients will often be the same, there is merit in considering joint planning and marketing initiatives by the three centres. A key marketing strategy should be to strengthen a strategic alliance among the three organizations to better service public sector and private industry needs, utilizing a single window business model. Joint marketing would reduce potential duplication, maximize utilization of the full range of capabilities offered by the institutions, support collaboration in the industry, and enhance efficient access of the expertise of other organizations linked to the PTRC, ITC and GTC.

The facilities provide an integrated capacity for research and development in energy and the environment from the idea stage, to laboratory analysis, to pilot plant work and finally through to demonstrations. This integrated capacity is reported to be unique in the world for the petroleum sectors. Maximum utilization of the facilities will only be achieved through application of an integrated approach to client education, promotion and marketing of the centres. This type of effort is reported to have already begun, to a limited extent, however it should be pursued aggressively in future years.

Success Factors/Future Considerations

During planning and implementation of the projects leading to establishment of the PTRC, the ITC and the GTR, a number of factors for success and future considerations were identified that could benefit planning of similar initiatives in the future.

- **Champions are pivotal** - There needs to be project champions for the initiatives to be successful. It was indicated during interviews that both the former and current Deans of Engineering at the University of Regina provided pivotal leadership roles in evolving the concepts for the centres into manageable projects. Their leadership led the process of detailed development and financing for all three projects.

Industry champions have also played important roles at various stages in advancing the projects and fostering industry support at technical levels.

- **Senior management support is essential** - The projects had the strong support of the President of the University of Regina and the Vice-President of the Research and International Department. There was also key support for the projects provided by the management of key federal and provincial government departments and agencies involved in the projects (e.g., WED, SIR, NRCan, SaskPower, RRP, etc.)

The importance of having senior management levels of industry, knowledgeable about the new research and development capacity and actively providing leadership and promotion of the facilities within industry circles, cannot be under-emphasized in getting the facilities established.

- **Skilled project management** - Strong project management provided under the direction of the Faculty of Engineering, U of R, the Office of the Vice President of Research and International and the RRP was critical in successfully implementing the three projects. The existence of critical expertise provided by SOCO (with key expertise from Innovation Place) in building and operating complex facilities suitable to projected research and development needs was a key success factor.

- **Timeliness and accessibility of WEPA funds** - Access to federal and provincial WEPA funds was critical in advancing the projects and leveraging commitments from other public and private sector partners. Preparatory thinking and planning had been underway for several years and the timing and availability of WEPA funds was perfect in terms of realizing the plans.

For example, the PTRC and the RRP concepts had been developing in parallel tracks, however with access to WEPA funds it was possible to merge the tracks, resulting in the PTRC becoming an important component of the RRP. At the same time, the other facilities being developed by RRP will, in partnership with the U of R, provide the infrastructure for spin-off public and private sector investments in the future.

Without WEPA financial support, the projects could not have been implemented or would only have been implemented on a smaller scale. It was WEPA assistance that helped to leverage funding commitments from other sources (e.g., industry, CFI, etc.) to achieve the unique scale and integration of facilities.

- **Community and Industry Support** - There was a high level of community and industry support demonstrated for the projects. The Regina Economic Development Authority recognized the potential for increased economic activity and highly skilled, knowledge-based employment opportunities associated with the projects. There was a strong sense that the facilities could attract new investment by industry in allied research and development initiatives.

The petroleum industry has shown its support for establishment of the centres by providing representatives to serve on the PTRC and the GTC Board of Directors. Industry has already committed funds towards sharing some of the operating costs for centres. Future ongoing support from industry will be critical in maintaining research and development momentum in pursuit of the objectives of the centres.

- **Industry Financial Commitment is Essential** - Industry's time frame for returns on investment in research and development is often shorter than the length of time required for resolution of complex scientific problems. Therefore, to expect future private sector funding of research and development facilities such as those established with WEPA funds at the U of R, there must be "buy-in" from the outset by industry representatives. If

universities and/or government departments, with much longer time frames, drive the projects, then the facilities are, destined in the future, to be largely funded for both capital and operations from public resources. Evidence indicates that this is how the situation is unfolding with respect to the PTRC.

Despite early positive signs concerning industry financial involvement, it can be expected that in future years both the ITC and the GTC will also require continued public funding of operations if they are to achieve their objectives. The research problems to be addressed (e.g., global warming, alternative sources, etc.) by these institutions have even longer time frames than many of the problems being addressed by the PTRC.

- **Formula for funding** - A key lesson from this case study is that the formula for funding both capital and operating costs of new research and development facilities should be agreed to, in advance, by all partners. For example, research expected to benefit the public should be funded publicly. Research expected to benefit a particular industry should be funded (i.e., both capital and operating costs) by that industry through a check-off or through some other system of regular industry contributions. Research expected to benefit particular firms should be funded by those firms on a full fee-for-service basis. Any other combination of benefits and funding of costs should be negotiated by the partners in advance. A funding approach that invests public funds in research and development facilities on the assumption that industry will eventually cover the operating costs is likely to require a high proportion of public funding for many years, if it is to survive.
- **Integrated Marketing is Critical** - During the Mid-Term Evaluation of the Saskatchewan WEPA program, it was noted that the SRC and U of R units under the umbrella of the PTRC were continuing to operate independently. It was noted that this arrangement provided little incentive “to work together to attract industry involvement.” Research conducted during this case study indicates that there has been little improvement in this situation.

A total collaborative approach to joint marketing and client education is essential if the PTRC and its units are expected to continue to rely heavily on public funding. The same level of collaboration should also extend to the ITC and the GTC. The

organizations should consider a single window marketing approach.

Together, the centres provide a unique, world class, integrated capacity to address energy and environmental research issues. In the same way, maximum utilization of the facilities will only be achieved through application of an integrated approach to client education, promotion and marketing. Anything less would be an inefficient and ineffective use of public funds.

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- Malcolm Wilson, Director of Energy and Environment, (formerly with Saskatchewan Energy and Mines), University of Regina. Phone: (306) 337-2287.
- Roland Moberg, General Manager, Petroleum Technology Research Centre,
Regina, Research Park. Phone: (306) 787-9400.

7.7 St. Boniface Research Centre: Filmless Radiology - Manitoba

Introduction

The Filmless Radiology project was initiated by the St. Boniface Research Centre in Winnipeg, Manitoba. The project was a three year pilot to develop and implement a widespread network across Winnipeg's health care facilities. This network would allow physicians access to clear, secure radiology images from any computer with a Pentium processor.

The project involved the purchase and customization of a Picture Archiving and Communication System (PAC system). This sophisticated computer system translates images into a digital format allowing them to be easily stored and transported. During the pilot project, the PAC system was customized from a central server architecture to a distribution architecture. This allowed for the images to be accessible via an inter-facility network.

This technology is unique because the network operates on a Digital Subscriber Line (DSL) infrastructure. These lines can carry various forms of digital information and are used in common applications such as high speed Internet connections. Operating the network on this platform allows for widespread access by physicians without significant capital investment.

The technology developed during this project will help to eliminate current problems related to storage, retrieval, and examination of radiation film.

The pilot project linked 5 hospitals, a clinic, and several physicians' homes across Winnipeg to the network. Today, the Winnipeg health care system uses this technology on a daily basis. The project further supports federal and provincial initiatives to develop a medical technology cluster in Manitoba.

Project Rationale

Radiology films, such as MRIs, X-rays and CT Scans, are inefficient and expensive forms of imagery. Every year, the Province of Manitoba spends over \$2 million in storing radiology film. The films are easily damaged in transport. This problem is compounded by Manitoba's aging population, as elderly patients

are likely to seek specialized treatment at more than one facility. Transporting films also causes delays in patient treatment. These delays can be devastating when a patient is in critical condition.

In 1998, when this project was initiated, digital communication lines were not widely used. This project was a platform for private sector funding partners such as Manitoba Telecom Services, Pulse Com and 3Com to pilot the DSL technology. The network created would then serve as a marketing tool for DSLs.

Also, in 1998, the PAC system was one of few technologies available to translate data into digital form and then transfer that data across a network. However, the PAC system was structured around a central computer system, and it was unable to link separate facilities and transfer data outside the established network.

The St. Boniface project would develop a distributor archive system with applicability in multi-facility health care networks as well as facilities in rural areas.

Funding Structure

Project funding was provided to establish a pilot program. WEPA funding for this project was provided jointly between the Federal and Provincial Governments. A significant amount of private sector support was also present. Project funding is summarized in the following table.

Table 7.13 Project Funding	
<u>Description</u>	<u>Project Costs</u>
PACS System Purchase	\$2.5 million
Other Costs	\$2.5 million
Total Project Costs	\$5.0 million
<u>Sources of Financing</u>	<u>Amount</u>
Federal WEPA	\$1.25 million
Provincial WEPA	\$1.25 million
SBGHRC	\$0.8 million
Private Sector Companies	\$1.70 million
Total	\$5.0 million

Any revenues realized in the first 10 years following the development of the technology will be shared by St. Boniface General Hospital Research Centre (50%) and the Province of Manitoba (25%) and the Federal Government (25%).

Timelines

The project funding was approved May 22, 1998. Initial expectations were that the pilot would take three years. The funding for the pilot project officially ended in October, 2001. However, the research team remains in place and spin-off projects are ongoing. Table 7.14 details specific milestones.

Table 7.14 Activities and Timelines	
Project Proposal Received	Feb 1998
Pilot Project Began	Mar 1998
Project Funding Approved	May 1998
Pilot Project Wrap-up	Oct 2001
End of 10 year Revenue Sharing Agreement between SBGHRC and the Provincial and Federal Governments	Mar 2011

Stakeholders

Initially, private sector support for this project included technical companies that assisted in the development of infrastructure for the network. These companies were:

- Manitoba Telecom Services (MTS) - created the DSL infrastructure throughout Winnipeg;
- CEMAX-Icon (a subsidiary of 3M) - specializes in data storage solutions; and
- PulseCom and 3Com - specialize in digital switching technology.

Today, private sector partners include larger multi-national industry leaders interested in developing the technology to the level where it can be commercialized.

The project was initiated by St. Boniface General Hospital Research Centre with the spin-off benefits, including a development team and strategic alliances with other provincial health care facilities, realized by the Centre.

The project was overseen by an active three-member Steering Committee consisting of

- Dr. Blake McLarty, Head of Radiology for the Winnipeg Regional Hospital Authority;
- Harry Shultz, Director of Business Development at St. Boniface Research Centre; and
- Sergio Camorlinga, Chief Software Architect for the project.

Project Impacts

Increase in quality of patient care – Success of the project, at this stage, has been determined by an increase in quality of patient care by reducing wait times at Winnipeg health care facilities. The technology is widely used in Winnipeg, where the pilot project was developed. The Winnipeg health care system now relies on this technology and uses it on a daily basis. Over 15,000 images have been stored on, and transferred over, the network.

Opportunity for commercialization - The project has strong potential for commercialization. "Filmless" image transfer across a widespread network is a leading edge solution to a common problem.

Technology development - The technology being developed is unique. The distributor archive system, which allows access to an archive of digital images through DSL infrastructure, is not available anywhere else in the world.

Employment creation - The project created 6 full-time technology research positions that continue to be funded by the St. Boniface Research Centre. These positions provide support to other areas of the Centre as well, and have resulted in the development of a telecom research Group at St. Boniface. This group provides advanced technological support for the facility, and allows St. Boniface to bid on technical research projects that it previously would not have had the expertise to complete. This team is to be expanded to 11 researchers in the summer of 2002 and is expected to triple in size during the next two years. Many of the researchers on the team are computer science students completing their Masters or PHDs at the University of Manitoba and the University of Calgary.

Spin-off technology - Benefits are also being realized in spin-off technology development projects across Western Canada. The University of Calgary, in partnership with a number of Alberta based companies including TR Labs and Yada Yada, has started a research program looking at digital transportation and storage of very large files, such as MRI images.

WEPA funding - Had WEPA funding not been available, this project would not have been possible. In the initial stages the project was simply a concept. It is difficult to raise capital to support concept development. The WEPA program met this need and the benefits will be realized for years to come.

Next Steps

Negotiations are underway to secure funding from large industry partners to continue development and further testing of the network technology. The goal of St. Boniface Research Centre is to take this technology development to the point where it can be packaged and sold as a functional tool to health care facilities in other jurisdictions. Greater returns can be realized with this commercialization approach, as compared to returns from licensing or selling the

technology in the embryonic stages of development. It is difficult to predict the time frames to commercialization, however, investment of several million dollars to fund further research and development on this technology is expected in the coming year.

As a condition of the WEPA funding agreement, any revenues realized from the project in the next ten years will be shared by St. Boniface Research Centre (50%), the federal government (25%) and the province of Manitoba (25%).

As research projects often do, the “filmless” radiology project has created a wave of spin-off research that will continue. Most of this research represents complementary technology that has commercialization potential of its own.

Success Factors/Future Considerations

The following important factors were noted in this project:

- **Non-monetary measures of success** - Although the level of commercialization is often the tool used to measure success, in this case, success can be measured in non-monetary terms. The technology developed in this project represents a significant benefit to the general population. It has the potential to save lives and increases the probability of a positive outcome in critical situations.
- **The role of demonstration in commercialization** - The key to the commercial success of this project is the ability to demonstrate its applicability in the market. The implementation of the technology in the Manitoba health care system has increased the credibility as well as the marketability of this technology.

Acknowledgements

Thank you to the following people who took the time to offer valuable information through an interview process.

- Harry Shultz, Director of Business Development, St. Boniface General Hospital Research Centre. Phone: (204) 235-3206.
- Dr. Blake McLarty, Head of Radiology for the Winnipeg, Regional Hospital Authority. Phone: (204) 235-3610.
- Sergio Camorlinga, Chief Software Architect, Filmless Radiology Project. Phone: (204) 235-3582.

7.8 Gimli Harbourfront Expansion

Introduction

Gimli, Manitoba is situated on the shores of Lake Winnipeg, approximately 76 kilometres north of the city of Winnipeg. The Gimli area has increasingly become a tourist destination; its population of 3,100 increases to over 7,000 with resort residents who come during the summer months. A typical summer weekend can bring more than 15,000 people to the area.

In 1996, the Gimli community began a visioning process for the expansion and development of its harbourfront area in preparation to host the 1999 Pan American Sailing competition.

The Gimli Harbourfront Development project was funded jointly between the provincial and federal governments and the Town of Gimli. Each was to contribute an equal share to the \$1.8 million project, however, development is ongoing and the Town of Gimli has contributed \$800,000 to date.

The Harbourfront Development project is a 25 year plan that includes three phases.

- Phase 1 - (Funded in part by WEPA.) This phase focused on the central harbour area and included dredging the harbour; expanding the parking facilities; constructing a breakwater, visitor information centre and museum; as well as landscaping the area.
- Phase 2 - The next phase involves the development and revitalization of the commercial real estate bordering the harbour.
- Phase 3 - The last phase calls for further expansion of the parking facilities and increased utilization of the harbourfront through program development.

Project Rationale

The catalyst for the first phase of the Harbourfront Development project was the Town's successful bid to host the 1999 Pan American Sailing competition.

The project represented an opportunity for long term economic benefit for the Town. The project was undertaken, and continues to be funded by, the Town of Gimli with the support of the surrounding community.

In 1996, the Gimli community began to look at ways to strengthen and capitalize on the area's opportunities in the tourism sector. Gimli is located in the Interlake region of Manitoba, a largely undeveloped area with the potential to become a major tourist destination. Its attractions include a freshwater fishery, beaches, the harbour, and a yacht club. It is estimated that more than 15% of the area's tourist base is from out of the province, including a large portion from the United States.

The tourism activity in the Town of Gimli was limited by several factors:

- The parking facilities near the harbourfront were inadequate and traffic was often congested during the summer months.
- The docking facilities, especially for fishing boats, were limited and considered unsafe.
- The harbourfront was not distinct enough to entice traffic from the non-resident (non-cottage owning) tourism market.

The Harbourfront Development project, in all its phases, is seen as a way to attract destination tourists. It is expected to impact the local economy through increased economic activity and revenues, and increased employment through the expansion of the local business community.

Funding Structure

The project was funded by the federal and provincial governments and the Town of Gimli. Private investment was made in kind through the involvement of local contractors in the planning and construction phase of the project.

Table 7.15 Project Funding	
<u>Description</u>	<u>Project Costs</u>
Project Costs**	\$1.7 million
Other Costs	\$0.1 million
Total Costs	\$1.8 million
<u>Sources of Financing</u>	<u>Amount</u>
Federal WEPA	\$0.6 million
Provincial WEPA	\$0.6 million
Town of Gimli	\$0.6 million
Total	\$1.8 million
** Project Costs consist of the following: Environmental Impact Assessment, Creation of Parking Spaces, Container Storage for PAN AM Games, Dredge Existing Harbour, Construct a Breakwater, Construct Wooden Walkway, Construct Boat Berths, Landscaping, Boardwalks, and Lighting.	

Timelines

Two years of planning and community involvement occurred before this project received approval for funding under the WEPA program. During this time, the Town of Gimli solicited the community's input on priorities for the development and the specific design of the construction. After funding was approved in May 1998, an additional four months of planning was undertaken to complete the architectural plans for the project.

Most of the construction was completed in time for the Pan America Sailing event in September 1999. Unanticipated problems with drainage of the material dredged from the harbour prevented the first phase of the development plan from being completed until several months after the games were over. Table 7.16 illustrates the project milestones for Phase 1 of the development plan.

Table 7.16 Project Timelines	
Town of Gimli Begins Visioning Process	1996
Project Funding Approved	May 1998
Design of Harbourfront Expansion Completed	September 1998
Pan American Sailing Event	July 1999
Phase 1 Complete	October 1999

Stakeholders

While the project received equal funding from the provincial and federal governments, the Town of Gimli was, and remains, the major stakeholder in this development plan. The Town of Gimli oversaw the project, and the Town Council acted as the Board of Directors. Community support for the project was strong. The Town acted on input from the community regarding the priorities for development and the expected benefit from the project.

The logistics of planning and managing the project were undertaken by D.J. Sigmundson, Administrator for the Town of Gimli. Mr. Sigmundson enlisted KGS Engineering to supervise the construction work. Several other local contractors were also involved in the different stages of development.

Project Impacts

Attraction of tourism - The Harbourfront Expansion has had a significant impact on tourism for the Town of Gimli. The local Visitor Centre (constructed as a part of the project) tracks the volume of tourists through the area. The Centre estimates that 15,000 tourists visited the Town in the 1999 season. Traffic increased to approximately 19,000 in the year 2000, and more than 21,000 tourists visited during the 2001 season.

Area development – The first phase of the Harbourfront Expansion project saw the construction of a new Visitor Centre and Museum as well as a revitalization of the waterfront as a whole. In addition, parking facilities were expanded, reducing traffic congestion in the area.

Commercial development – The Harbourfront Expansion project has motivated revitalization in other commercial areas of the Town. Two small convenience store properties have been taken over by major chains. The modernization of convenience stores was identified as a way to attract resort tourists to Gimli.

Employment creation – It is difficult to measure the direct impact that the Harbourfront Expansion project has had however, proponents of the project believe that the increase in tourist activity has significantly contributed to the survival of several local businesses, reducing the negative impact of employment layoffs.

WEPA funding – Without WEPA funding to leverage the Town’s investment, this project would not have been possible. Having undertaken and completed the first phase of the development plan, the motivation for continuing with the next phases has increased. The Town has already contributed \$200,000 above its initial investment commitment, and it is confident that funding can be secured from the private sector to complete phase two.

Next Steps

The 25 year development plan for the Gimli Harbourfront area consists of three phases, the first is now complete. The second phase involves narrowing and revitalizing the streets connecting the commercial district to the harbourfront. This phase is expected to lead to increased demand for commercial space in this district. There is strong support in the business community to undertake this phase in the near future. It is expected that phase two of the harbourfront development will cost approximately \$200,000.

Phase three of the 25 year plan anticipates greater parking requirements generated by the phase two expansion of commercial property. Phase three also plans to increase the utilization of the harbourfront area through program development. Events such as multi-cultural festivals, sailing competitions and fishing derbies are included in this plan.

Success Factors/Future Considerations

The following success factors and future considerations through the implementation of this project:

- **Local champions** - A significant key to the success of this project was the non-traditional attitude embraced by the Gimli community leaders. Forward thinking community leaders created the vision and support that was necessary to see the project through to fruition.
- **Phased approach** - By choosing to segment the project into three phases, each component was easy to manage and easier to finance.

Acknowledgements

Thank you for participating in a telephone interview:

- D. J. Sigmundson, Administrator for the Town of Gimli. Phone: (204) 642-5210.

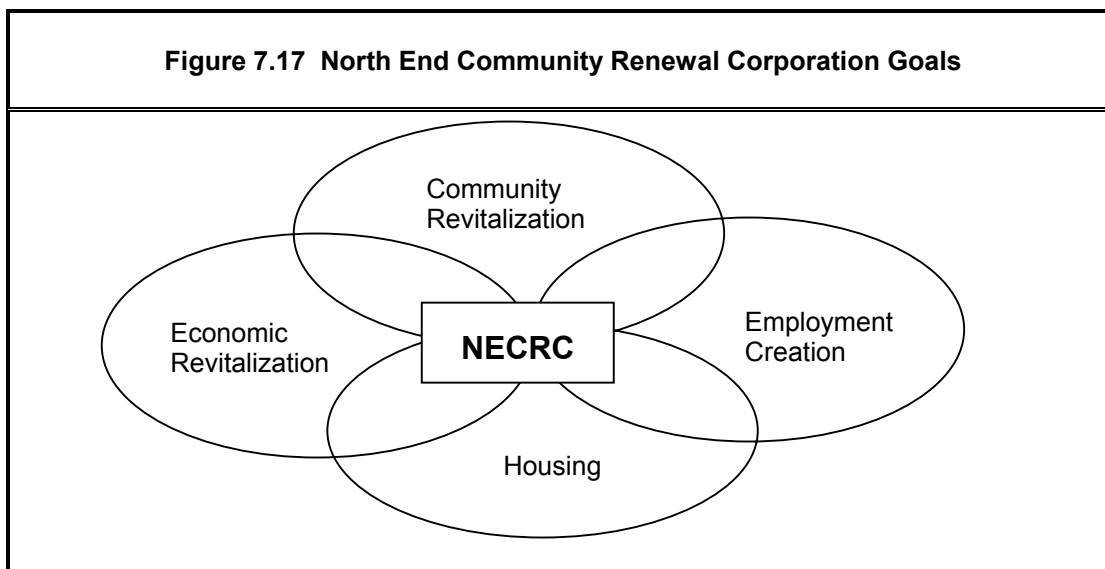
7.9 North End Renewal Project: SEED Winnipeg Inc - Manitoba

Introduction

The North End Renewal Project is a community effort in the north end of Winnipeg, Manitoba. The project was designed to help revitalize the economy and the community in that area. The \$1.5 million project was initiated by three partner corporations: SEED Winnipeg Inc, Community Education Development Authority (CEDA), and the Mennonite Central Committee. There were many partners from the private and non-profit sectors that invested in the North End Renewal, both with financial support and in-kind support in the form of expertise.

The major goal of the project was to establish the North End Community Renewal Corporation (NECRC). NECRC would be a community based organization responsible for ongoing revitalization efforts in the area. The NECRC was officially formed in 1998 but did not have an operating budget or any staff until 2000. During this start-up phase, the project partners took on the logistics of getting the renewal project underway.

The people living within the boundaries of the project were enthusiastic and responsive to the leadership offered by SEED Winnipeg and the other project partners. NECRC, through extensive meetings with the community, was able to identify four main focus areas within the project. These are identified in Figure 7.17.



Rationale

The North End Renewal Project was undertaken as a response to a community in crisis.

- The area had the highest unemployment rates in Winnipeg.
- People in the north end were dependant on social programs; the applicants were cyclical and there were cases of intergenerational dependence on social assistance.
- 40% of the commercial buildings in the north end were abandoned because property values had decreased to a level where it was no longer economically feasible to pay the taxes on buildings.
- The area had the highest incidence of fires set by arsonists. The abandoned buildings were considered a direct impact on the number of arson set fires.
- Drug use was also rampant and the streets were often littered with used drug paraphernalia.

The north end has rich cultural diversity including large Aboriginal and Filipino populations. There are also many groups in the area that are committed to employment creation and to the delivery of social programs. The North End

Renewal Project was designed to be a community-based program that, in addition to creating new initiatives, would bring together and refine existing services.

Funding Structure

WEPA funding for the North End Renewal Project was shared jointly by the Provincial and Federal Governments. A total of \$150,000 of the funding was provided as seed capital, with claims made every six months for additional investment. The portion contributed by SEED Winnipeg represents the proceeds from the fundraising efforts for this project. Contributors included The United Way and the Winnipeg Foundation. Details of the financial contributions are included in Table 7.18.

Many organizations also donated resources in kind; the Crocus Fund donated human resources and the Assiniboine Credit Union donated expertise and business support.

Table 7.18 Project Funding	
<u>Description</u>	<u>Project Costs</u>
Wages and Fees for Service	\$622,500
Outside Consulting Fees	\$612,500
Direct Research Costs	\$11,000
Admin Support/Office Overhead	\$238,000
Capital Costs	\$8,500
Equipment and Facility Rental	\$40,000
Total Project Costs	\$1,532,500
<u>Sources of Financing</u>	<u>Amount</u>
Federal WEPA	\$225,000
Provincial WEPA	\$225,000
Northern Affairs	\$75,000
Western Diversification	\$75,000
SEED Winnipeg (Fundraising Efforts)	\$932,500
Total	\$1,532,500

Timelines

Initial planning for the project began in 1997. WEPA funding contracts were completed in 1998. The project is slated for completion in 2003 however, with the development of the NECRC, the renewal effort will be ongoing. Table 7.19 outlines the various milestones in the project development process.

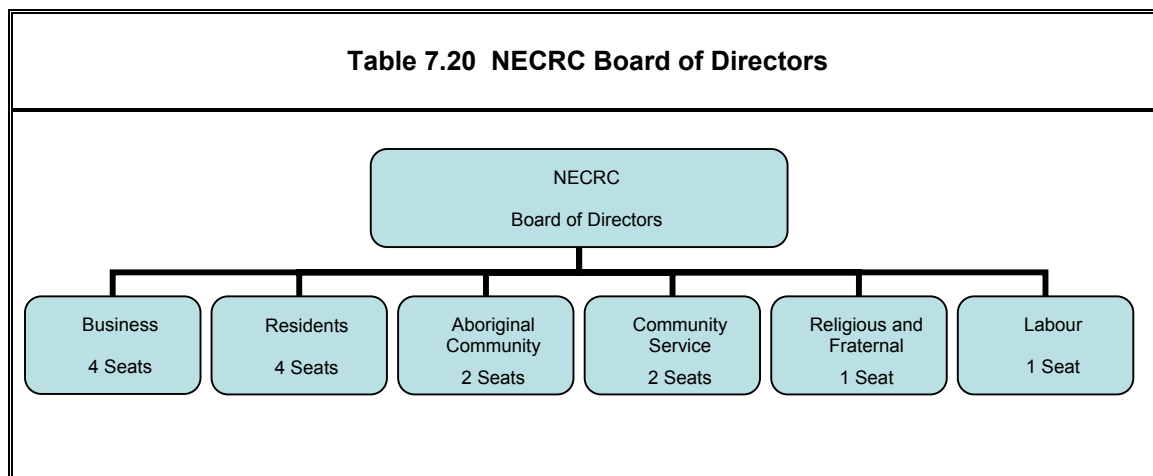
Table 7.19 Project Timelines	
Project Planning Began	1997
WEPA Funding Approved	Oct 1998
NECRC in Start-Up Phase With Development Partners Handling Operations	1998-2000
Development and Evolution of the NECRC	2000-2003
Official Project End	2003

Stakeholders

The North End Renewal Project was initiated by organizations outside the community that responded to a need for leadership and a fresh outlook on the potential of the area. As the project progressed, it has brought together many different organizations within the community including those delivering social and training programs and local business groups. The development of the NECRC is expected to continue to refine the services of these organizations.

The NECRC is governed by a Board of Directors. This Board consists of representatives from different areas within the community. During the start-up phase (1998-2000) the three initiating organizations, including SEED Winnipeg

had non-voting seats on the Board. Figure 7.20 details the diversity of community representation on the Board.



Project Impacts

North End Community Renewal Corporation - Prior to the development of the NECRC, there were no community organizations within the community with a mandate that encompassed all aspects of the community.

“The NECRC mandate is to promote the social, economic and cultural renewal of the North End of Winnipeg.”

NECRC fulfills its mandate by improving the quality and accessibility of housing, creating jobs, upgrading commercial and industrial areas, implementing employment development programs, improving the overall image of the community and reducing crime in the community. The NECRC also lobbies on behalf of the community with external organizations, such as City Hall to lower property taxes.

Employment development - A committee has been developed to focus on employment creation issues in the area. The Employment Development System Committee consists of community service organizations that meet regularly to help people obtain and maintain meaningful full-time employment. This committee has identified 14 components that make up an effective “Community Based Employment Development System” and is working toward implementing these.

The PATH Resource Centre has been established to provide in-depth career and life assessments. The program is focused toward people on social assistance. It has been developed as a point of first contact to determine the most effective programs in which a person should participate.

The employment development initiatives also include literacy training programs and life skills workshops. The NECRC strives to partner with existing organizations to deliver these services.

The employment development initiatives of the NECRC have assisted over 500 individuals to access resources and obtain counseling, and have referred these people to over 26 different support organizations within the north end.

Business renewal - The North End Renewal Project has propelled business development by creating business associations, lobbying for lower property taxes, and attracting business that will create employment for local residents and increase retail activity in the area.

Housing development - Many initiatives are underway to increase the housing development within the North End. The NECRC has worked closely with the William Whyte Residents' Association to plan and implement several rejuvenation programs, including a graffiti related beatification program, a new housing development plan and a renovation plan.

Other areas of the North End have developed their own housing programs, including building community gardens.

The NECRC helped to negotiate funding from the Thomas Sill Foundation to completely renovate 20 homes and rejuvenate the exteriors of over 30 homes in the North end.

Community development - Community development initiatives have focused on making residents feel safe in their neighborhoods. The NECRC has worked closely with Winnipeg City Police to create awareness, among both Police and community residents, of the responsibilities and concerns related to public safety.

On duty police officers have been stationed in North end schools as School Resource Officers in an effort to reduce the violence in these schools. Community safety plans are also underway and involve members of the community who perform neighborhood watch duties.

Other initiatives include:

- Several new sector specific training programs have been undertaken,
- The Empowerment for Women program, and
- A cultural celebration day in which 800 people participated.

WEPA funding - Without WEPA funding, the North End Renewal Project would not have become a reality. Although SEED Winnipeg was able to raise over \$900,000 for the project, it was disappointed by the level of support shown by the private sector and reports that most of that funding came from not-for-profit investors.

Next Steps

The community renewal process involves changing people's way of thinking about their futures. Because of this, the process is neither easy nor fast. The North End Renewal Project has acted as catalyst for the communities within its boundaries and change is underway.

The NECRC has set specific objectives to obtain in the next five years including:

- The renovation of 130 rent-to-own houses,
- Reduction in the number of vacant commercial buildings by 50%,
- Reduction in the North end unemployment rate to 150%, and
- Reduction by 25% in the number of criminal incidents against persons and property.

Success Factors/Future Considerations

There were a success factors and future considerations identified as a result of this project:

- **Immediate need** - One of the reasons that this project was successful was that the community was in crisis. The citizens of the north end were tired of living in a community in which they did not feel safe and could not find work. The people within the community were open to help and were willing to work with the NECRC to effect change.
- **Participation by diverse groups** - The second factor that has led to the success of this project was the tremendous amount of participation by a diverse group of organizations. Whether through financial donations, in kind support, or partnerships in development, organizations from all aspects of community development have been involved in this project. These organizations include social program providers, financial institutions, private business, and the Police Department.

Acknowledgements

Thank you to:

- Derek Pachal Executive Director, SEED Winnipeg Inc. Phone: (204) 944-9938.

7.10 St. Boniface General Hospital Centre for Health Research on Aging - Manitoba

Introduction

The Centre for Health Research on Aging is located on the fourth floor of the St. Boniface Research Centre in Winnipeg, Manitoba. The Centre is dedicated to research on aging and is unique in its collaborative approach to research and development.

The Centre for Health Research on Aging is divided into three main research groups. The Stroke and Vascular Disease group was the first to be formed and now has five laboratories in the Centre. The second, focusing on the study of degenerative disease, also has five dedicated laboratory spaces. The National Centre for Agri-Food Research and Medicine is the third area of study and is currently in the developmental phase. This group will focus on the study of nutraceuticals and their health benefits. Three laboratory spaces are planned for this group.

The St. Boniface Research Centre was built in 1986 with plans for the future development of the fourth floor. It took until 1997 before funding for the \$12.6 million Centre for Health Research on Aging project was in place.

Construction of the laboratory space for each research group was undertaken in two phases. The first included laboratory construction and equipment. The second phase focused on the recruitment of researchers and customization of the facilities for their needs.

Project Rationale

In Manitoba the percentage of the population over the age of 60 is higher than in any other Canadian province. Research and development into prevention of the effects of aging has been largely unexplored in Canada.

The fourth floor of St. Boniface General Hospital had been designated for research into this area. The Centre for Health Research on Aging did not become a reality until a substantial portion of the development costs were raised during the Age of Discovery campaign.

The Centre for Health Research on Aging is the first centre of its kind to promote collaborative research efforts on understanding and preventing the effects of aging. The Centre exemplifies the shift in Canadian health care focus to prevention rather than treatment of disease.

Funding Structure

WEPA program funding came into this project after a substantial amount had been raised from private donations. St. Boniface’s Age of Discovery Campaign raised \$8.2 million, from small private investors, in support of developing the Research Centre. WEPA program funding cemented the project by providing the final stage of investment dollars. The Federal and Provincial Governments contributed equal investment to this project. The project costs and a funding breakdown are detailed in Table 7.21.

Table 7.21 Project Funding Project Costs	
<u>Description</u>	<u>Projects Costs</u>
Phase 1 (lab construction and equipment costs)	\$2.4 million
Phase 2 (completion of lab and start-up costs)	\$2.0 million
Other Costs (including recruitment of researchers and operating costs)	\$8.2 million
Total Project Costs	\$12.6 million
<u>Sources of Financing</u>	<u>Amount</u>
Federal WEPA	\$2.1 million
Provincial WEPA	\$2.1 million
SBGHRC (Age of Discovery Campaign)	\$8.4 million
Total	\$12.6 million

Timelines

The recruitment of researchers to work at the Centre for Health Research on Aging began before project funding was in place. In 1996, the Stroke and Vascular Disease research group was formed. This group utilized lab facilities on the third floor of the St. Boniface Research Centre until 1998, when construction of the first fourth floor laboratories was finished. The Neurodegenerative Disease group moved into the Centre for Health Research on Aging in 2001. Construction on the National Centre for Agri-Food Research and Medicine is ongoing. Table 7.22 details the major milestones in the Centre’s development.

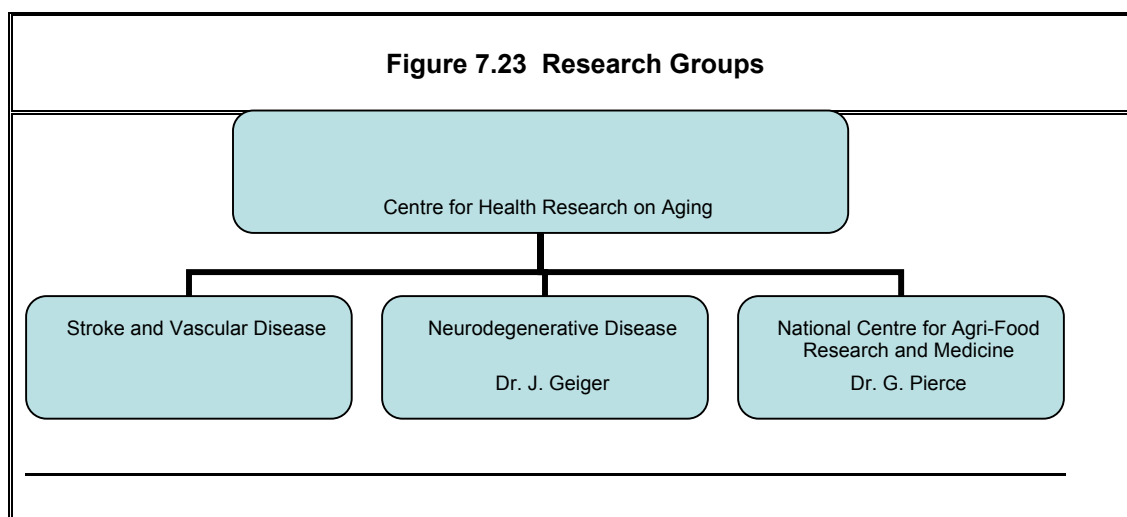
Table 7.22 Project Timelines	
St. Boniface Research Centre Opens	1986
Age of Discovery Campaign	1991-1997
Project Proposal Received	March 15, 1994
Stroke and Vascular Disease Research Group Formed	1996
Project Funding Approved	December 15, 1997
Stroke and Vascular Disease Group Moved Into 4 th Floor Laboratories	1998
Neurodegenerative Disease Group Formed	1999
Neurodegenerative Disease Group Moved Into 4 th Floor Laboratories	2001
Construction Began on National Centre for Agri-Food Research and Medicine Laboratories	2001

Stakeholders

The Centre for Health Research on Aging is a division of the St. Boniface General Hospital Research Centre. The project is governed and directed by the Research Centre’s Board of Directors.

Figure 7.23 details the three main research groups and the individuals responsible for the Centre’s leadership and direction.

Several researchers operate in each of the three main research areas. Each researcher is responsible for securing their own research grants to fund their operations. To maintain their space in the facility, each researcher must generate a minimum of \$150/sq foot in annual research funding. Typically, researchers will generate close to \$200,000 each.



Project Impacts

Initial discoveries - The timeframe to take a drug from initial discovery through development and clinical trials can be upward of 10 years. Several of the discoveries made at the Centre have shown enough potential to justify registering provisional patents. Specifically, these patents have been registered on discoveries in Alzheimer’s disease and diabetes research.

Create research positions - The Centre was projected to employ 105 researchers. Currently over 75 researchers use the lab facilities. Three more positions have been designated in the National Centre for Agri-Food Research and Medicine. Recruitment is ongoing to bring the world’s top scientists to the Centre’s unique environment.

Spin-off development – The facility houses an incubation type setting with 3 spin-off companies developing new products. Three million dollars in venture capital funding has been raised in support of these spin-offs.

Equipment – A portion of the funding for this project was used to purchase specialized equipment. This equipment is shared with other departments in the St. Boniface Research Centre. For example, an MRI magnet that was purchased through this project was used by a spin-off company named Autolitt to develop a procedure to remove brain tumors. The new technology uses a microscopic probe guided by a robotic arm with exact real-time co-ordinates provided, to the surgeon, by the MRI. The new procedure replaces a more invasive method previously used, where a one-half inch tube was inserted into the brain. The new procedure can be performed on an outpatient basis. Developments such as this utilize several of the different research areas in the St. Boniface Research Centre and would not be possible without the equipment purchased through this WEPA funded project.

Training – Most researchers at the facility have an appointment with the University of Manitoba’s College of Medicine. The appointment allows them to take on students from the college to complete academic research. Every year, at least 3 graduate students are employed in the Centre for Health Research on Aging. A summer intern program is also available for university undergraduate students and high school students.

Attraction of research funding – The Centre is considered to be self-sustaining. The WEPA program provided ‘bricks and mortar’ funding, while initial operating and recruitment capital was provided by the private sector. Now, the Centre is in a position to compete for research grant funding as well as secure private sector contracts as a result of the discoveries made.

WEPA funding provided opportunity to continue project – Rather than leveraging private sector investment, WEPA funding for this project was able to supplement the investment made by the private sector. WEPA funding made it possible for the Centre for Health Research on Aging to go forward. Without WEPA funding this project would have been delayed until an equal investment could be raised in the private sector. This would have delayed the project by several years. As Dr. Geiger explains, “The window of opportunity for discovery in this area is now, delaying the project would have caused us to miss this window”.

Next Steps

Recruitment of world-class research talent is ongoing. The Centre houses researchers from all over the globe. Up to 8 different languages are spoken in the Centre on any given day.

To maintain and further establish its credibility within the research community, the Centre must continue to produce scientific discoveries. The ultimate goal is to develop strategic partnerships with established companies so that it can take the discoveries through the testing phase and to market. In the pharmaceutical industry, this commercialization process is long and expensive. It will take several more years before any of the discoveries made at the Centre reach this point.

Success Factors/Future Considerations

The success factors and future considerations identified in the development and implementation of this project include:

- **A synergistic project** - The Centre of Health Research on Aging is a collaborative research effort. The individual scientists within the facility benefit from synergies created because they are all working toward a common goal. These synergies include joint grant proposals, collaborative research projects, and sharing of laboratory space.
- **Positive working relationships** - The research has also been advanced due to the close relationship between the Research Centre and the clinical division of St. Boniface Hospital. This relationship allows some of the research to be validated on a clinical level prior to clinical trials.

Acknowledgements

Thank you to the following individuals who were able to provide valuable information and insight into this project.

- Harry Shultz, Director of Research Development, St. Boniface General Hospital Research Centre. Phone: (204) 235-3206.
- Dr. F. Amara, Researcher, Specializing in the Field of Alzheimer's Disease. Phone: (204) 235-3615.
- Dr. G. Pierce, Director, Stroke and Vascular Disease. Phone: (204) 235-3414.

8.0 CONCLUSIONS AND RECOMMENDATIONS

8.1 Conclusions

The purpose of this evaluation is to answer three broad based evaluation questions. These questions are identified below with our conclusion or assessment based on our evaluation.

Do WEPAs continue to be consistent with departmental and government-wide priorities and do the provincially based programs realistically address a need?

Conclusion #1

WEPAs have several important attributes, such as building co-operation and working relationships between federal and western provincial governments, flexibility, efficiency of administration and early indication of successful projects.

Conclusion #2

This most recent WEPA ending March 31, 2001 is out of step with the federal government's present emphasis on "managing for results". This policy identifies that the prime responsibility of public service managers is to define anticipated results, continuously focus attention toward results achievement, measure performance regularly, and learn and adjust to improve efficiency and effectiveness. WEPAs have focused on project selection, and implementation. Expected results, and methods to monitor outputs and identify results, are missing. In order to ensure that current policy is adhered to, both human resources and related budget will be needed.

Conclusion #3

With respect to the identification of need, our review has found evidence that the program addresses several needs. However, specific needs have not been identified, documented, and prioritized in advance and needs have not been considered using the direct input from stakeholders. Rather, the needs have been addressed on the basis of government knowledge of stakeholder requirements.

Have WEPA's been effective in meeting their objectives; within budget, and without unwanted outcomes?

Conclusion #4

WEPA's have been effective at meeting overall program objectives, within budget and with low administrative cost. No unwanted outcomes have been identified.

Conclusion #5

Additional human resources would allow for greater project monitoring and follow-up.

Are the most appropriate and efficient means being used to achieve WEPA's objectives, relative to alternative design and delivery approaches?

Conclusion #6

WEPA's represent a major change and shift along a continuum from past federal/provincial development programs. WEPA's focus primarily on indirect public benefits with projects sourced by government officials. By nature the impacts tend to be intangible and are difficult to measure reliably. With the limited emphasis on results generated by WEPA funding, it is difficult to judge whether WEPA's are the most appropriate and efficient means to achieve development objectives relative to alternative design and delivery approaches.

8.2 Recommendations for Consideration

The WEPA agreements have been useful, effective and successful tools for fostering federal/provincial partnerships and diversification of the western Canadian economy. Recommendations arising from the final evaluation of WEPAs can have direct application to the design and implementation of similar WEPA type agreements in the future.

The recommendations for consideration flow from the various avenues of data collection, research and analysis conducted during the evaluation.

Recommendation 1

Conduct broad-based consultations with government and industry stakeholders on economic development and diversification needs and priorities prior to implementation of future WEPA type agreements.

Rationale:

Many successful approaches to economic development and diversification in democratic societies involve public/private partnerships. In Canada, both levels of government cooperating, plus involvement of stakeholders equals successful economic development.

Interviews with sector representatives confirmed and emphasized the importance of consultation with key stakeholders on future strategic needs and priorities. Information on stakeholder needs may be available from other consultation processes (e.g., budget consultations, etc.) however, information derived from such processes is often too general for program design purposes. To achieve the best program design it is important to conduct targeted consultations. The purpose of consultations is to receive input and feedback from specific key stakeholder groups and organizations likely to need support to achieve their economic growth goals.

Such consultations should be held during the design and development phase for any new agreements. Consultations will help foster a better understanding by stakeholders of planned western economic diversification direction and proposed tools for fostering economic development and improved partnerships. Involvement of stakeholders will increase the relevancy of future WEPA style initiatives and help to foster stakeholder buy-in and cooperation.

Recommendation 2

WEPA style initiatives should, in the future, consider moving away from a project-by-project approach to a strategically targeted effort that focuses on advancement of a few key priority investments.

Rationale:

With several notable exceptions (e.g., fuel cells in British Columbia, health research facilities in Manitoba), WEPA spending was devoted to a wide range of different kinds of projects across western Canada. This was possible because WEPAs have embraced a broad-based definition of economic development that includes education, research and development, healthcare, etc.

In future, agreements designed to address issues of economic development and diversification should document and define the concepts as precisely as possible. What are the desired outcomes of economic development and diversification? Is it incremental employment, increased value added economic activity, new private sector investment, establishment of new industries, new research and development capacity, etc? Answering these questions will help to define the meaning of “economic development and diversification” and result in investments in fewer, more strategic initiatives.

Recommendation 3

Establish a common set of federal/provincial implementation procedures and protocols to ensure greater consistency in implementation of future WEPA type initiatives across western Canada.

Rationale:

Common implementation procedures should include delivery mechanisms, eligibility criteria, rating and selection factors, project assessment tools, and due diligence procedures.

There was inconsistency in the use of project eligibility and selection criteria across the four western provinces. Part of the difficulty of not using consistent eligibility criteria and rating systems is the risk of inadequate rationale for decisions and inconsistencies in decisions from province to province.

Recommendation 4

Develop and follow a detailed communications plan to guide a coherent and strengthened approach to communications, and visibility, with respect to future WEPA type initiatives.

Rationale:

There were strong indications of inconsistencies in the preferred WEPA profile across all western provinces, and the desire to share information with the public about WEPA investments.

Interviews with management officials confirms that WEPAs were not intended for broad, proposal-based access. There was a preference to maintain a relatively targeted approach to WEPA programming. It was felt that a broad-based appeal for proposal would lead to many requests for funding assistance that could not be met within the limited financial resources available.

At the same time, federal visibility requirements necessitated public announcements of new WEPA project investments that had the effect of drawing attention to the existence of WEPAs. Officials acknowledge receiving many calls from potential clients, after project announcements, requesting information about WEPA funding availability.

The best method of ensuring that all aspects of communications are handled consistently is the use of a coordinated communications plan, with clear communications objectives and periodic measurement of effectiveness of communications activities. This tool should be used during the implementation of any new agreements. More strategic investment in WEPA agreements in the future would facilitate creation of a more coherent communications plan.

Recommendation 5

Utilize a results-based management approach to future WEPA project implementation, including the use of reliable performance measures and corresponding data collection systems.

Rationale:

Prior to implementation, a program framework needs to be developed that will identify:

6. Clearly stated needs to be filled by the program (based on the consultation results from Recommendation 1).
7. Identification of program successes.
8. Performance measures and indicators of success.
9. Methods of data collection.
10. Responsibilities for data collection by applicants, program managers and program evaluators.

Project applicants would be required to track outputs and reliable impact data as part of the contract requirements.

There will be additional costs to collect suitable data in order to effectively measure results and performance. Program funds will need to be allocated for this expense. However, the return on investment in data collection is more reliable information on the impact and success of the program (results). There is also a return from being better able to plan future projects that will provide the greatest return on public investment. Private sector spin-off investment and incremental employment numbers are examples of the types of data that could be collected more frequently and consistently to measure performance.

Use of performance indicators to measure impact and effectiveness should be a central part of the evaluation framework approved by the federal Treasury Board for a new WEPA type initiative. These indicators should be practical, useful tools that project proponents and program managers can use to measure progress over the longer term in relation to goals and objectives.

APPENDIX 1 - WEPA PROJECT FEEDBACK FORM

Western Economic Diversification (WD) has retained Garven & Associates, management consultants, to conduct an evaluation of the Western Economic Partnership Agreement (WEPA), a western Canadian federal/provincial Agreement designed to encourage the economic and regional development of each western province.

As part of the evaluation, we are conducting a survey of firms, associations, and/or agencies that have received financial assistance from the WEPA program. For evaluation purposes, Western Economic Diversification has provided your name to us. You will be asked to describe the objectives of your project and to quantify both the realized and forecasted outputs that will be generated as a result of the project.

Your responses to this survey are confidential. The survey results will be consolidated on an aggregate basis and used to generate a better understanding of the impact of WEPA funding.

The survey has been prepared for you in an electronic format for ease of reporting. You have the option of responding to the survey on-line at http://members.shaw.ca/garven_associates/WEPA_Evaluation.html or, you can print the survey and fax it to Garven & Associates at (306) 975-1075.

We need your response by March 22, 2002. Thank you very much.

Project Title: _____

Project Applicant's Name: _____

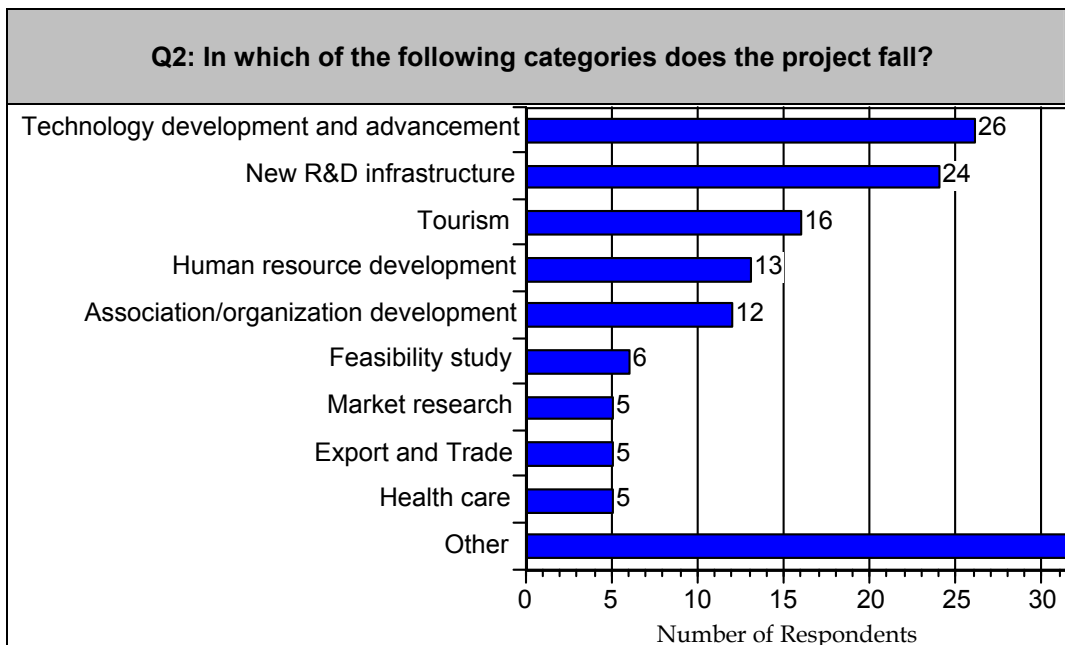
Name of the Survey Respondent: _____

Respondent's Role within the Project: _____

1. Please identify the primary objectives of the project that has received WEPA funding?

Objectives: Various Objectives

2. In which of the following categories does the project fall?



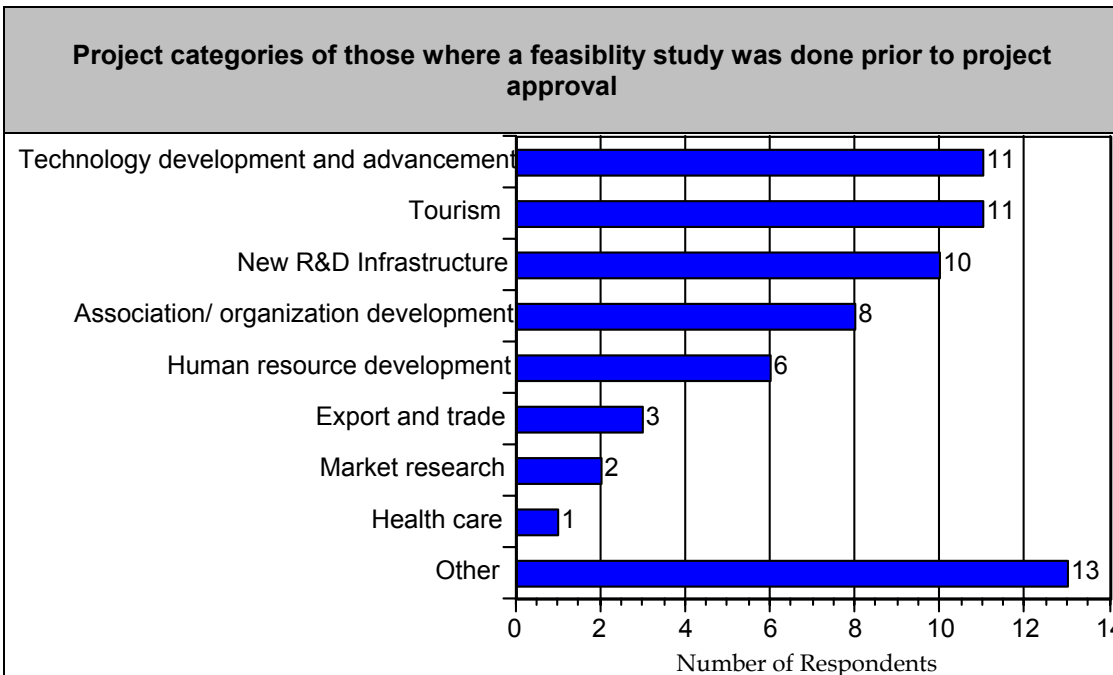
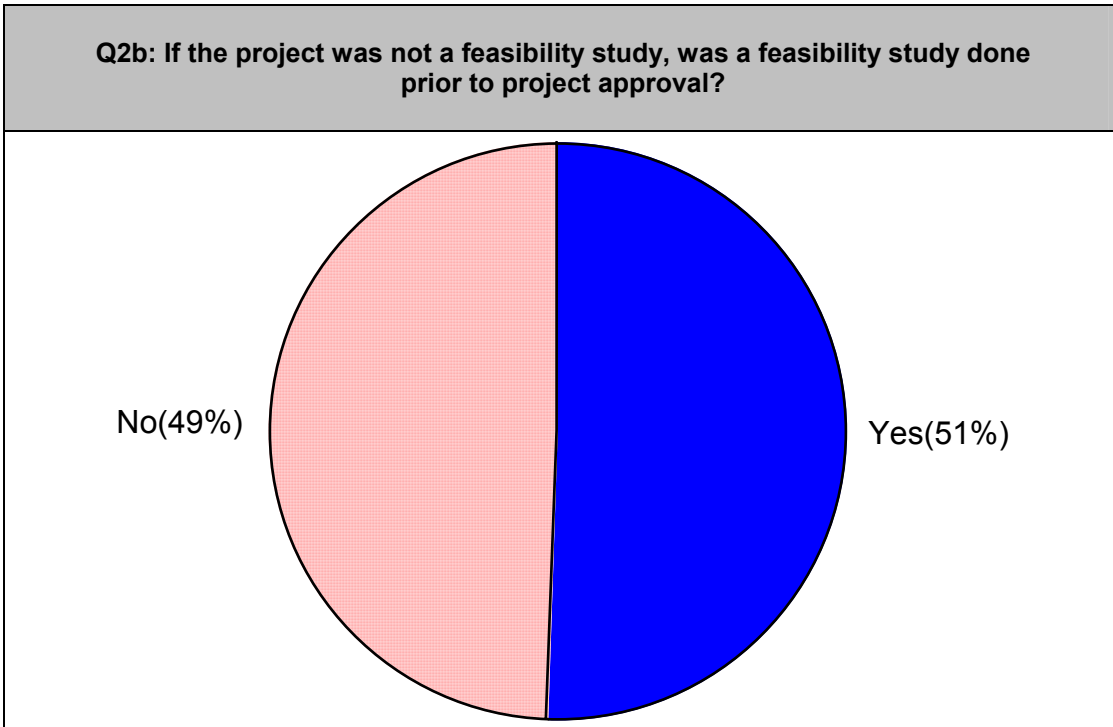
Q2: In which of the following categories does the project fall?	BC	AB	SK	MB	Total
	Number of Respondents				
Technology development and advancement	5	15	3	3	26
New R&D infrastructure	1	10	8	5	24
Tourism	0	0	6	10	16
Human resource development	0	8	3	2	13
Association/organization development	1	4	2	5	12
Feasibility study	0	1	1	4	6
Market research	0	2	1	2	5
Export and trade	2	1	1	1	5
Health care	0	4	1	0	5
Other	6	13	6	7	32

Q2 Other:

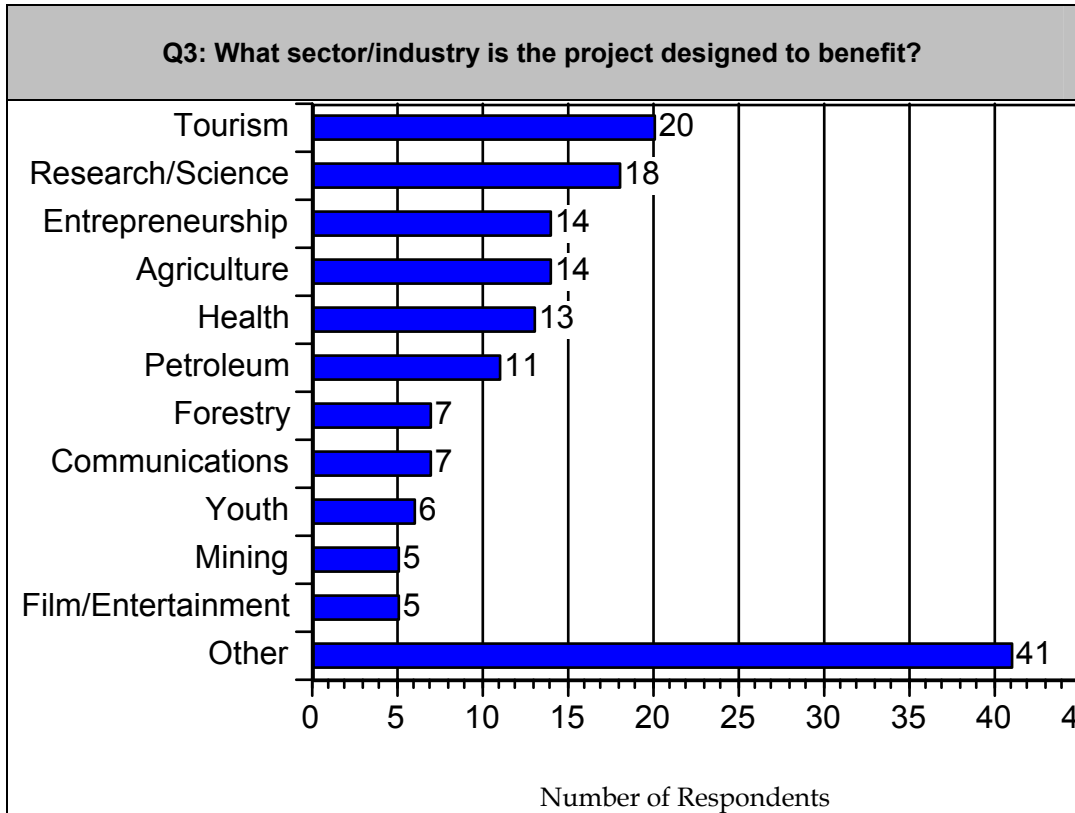
- Strategic Framework for Tourism Investment
- Marketing infrastructure
- Heritage Facility
- Coastal economic diversification

- Economic Development
- Planning & construction of community asset
- Improve access to technologies/Prepare graduates
- Education & heritage
- Economic development, though selection criteria may have used tourism
- Food Safety technology transfer
- Safety (trucking)
- Value adding
- Baseline data in support of northern economic development
- "counsellier aux enterprise"
- Design and Construction of 3rd Generation Synchrotron
- Resource evaluation
- Research in value-added agriculture
- Policy research and consensus building
- Resource Protection
- Enhancing Local Economy
- Form partnerships, develop databases
- Form partnerships, acquire databases
- Facility Improvement
- Note that CIC also does Market research, association development, human resource development, health
- Industry development and diversification
- Education
- Food Safety and Examination of Safe Food Production
- Economic development
- Increase awareness of economic and employment opportunities in an emerging sector
- Community revitalization
- Tourism Infrastructure
- Tech commercialization
- Competitive Intelligence Training & Development

If the project was not a feasibility study, was a feasibility study done prior to project approval?



3. What sector/industry is the project designed to benefit?



Q3: What sector/industry is the project designed to benefit?	BC	AB	SK	MB	Total
	Number of Respondents				
Research/Science	2	7	6	3	18
Tourism	2	1	7	10	20
Entrepreneurship	3	5	1	5	14
Agriculture	1	7	2	4	14
Petroleum	0	6	5	0	11
Health	0	11	1	1	13
Forestry	3	3	1	0	7
Communications	2	1	0	4	7
Youth	0	1	0	5	6
Mining	1	3	1	0	5
Film/Entertainment	0	0	2	3	5
Other	8	15	8	10	41

Q3 Other:

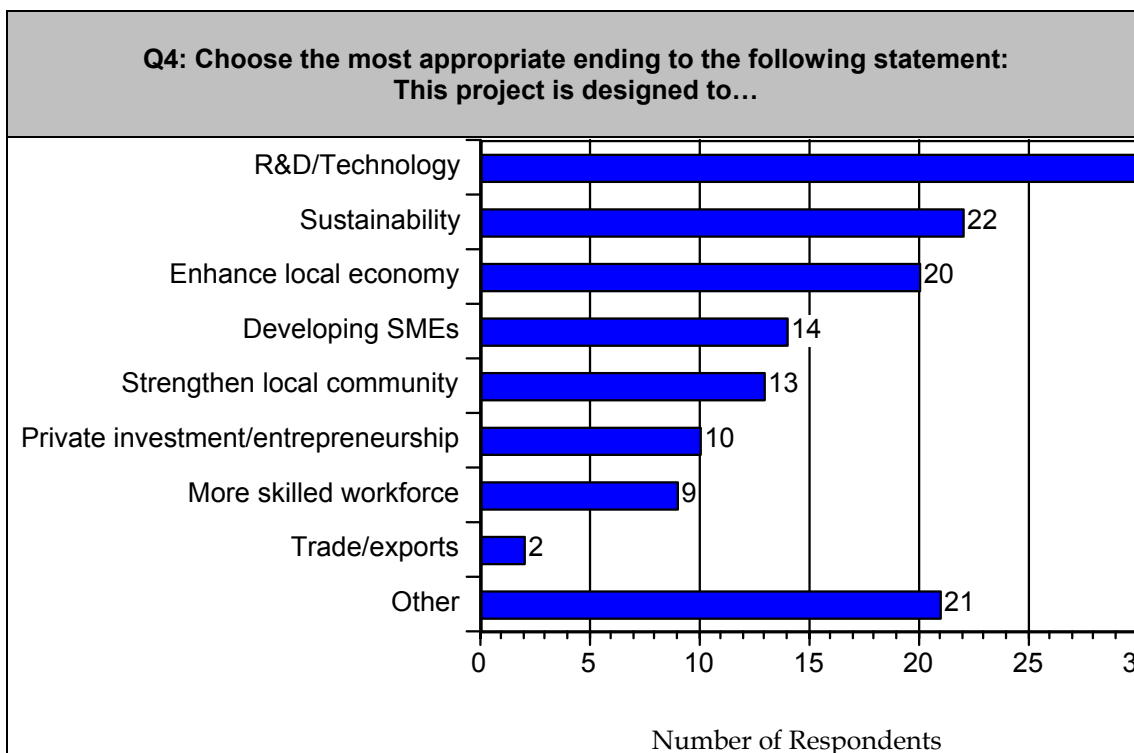
- Education

- Surface Freight Transport Sector (Trucking)
- Forest Products
- Commercial carrier industry
- Post-secondary
- Transportation/Economic Development
- Environment
- Aboriginal and Métis communities and resource development industries.
- Through technology commercialization in ICT, Biosciences, and Engineering Sciences
- All it is about Public access through libraries to information
- Commercial
- Western Canada's import / export trade and tourism industries
- Community Development
- New Media
- Business Community
- Multi-sectoral benefits
- Commercial vehicle operations
- We are R&D consultants for a variety of industry sectors.
- Energy; Commerce and transportation Sectors of the MB-NU MOU for Cooperation & Development (See Attached).
- Heritage Preservation
- We are R&D consultants for a variety of industry sectors
- Fishing, Recreational
- Local business (economic development)
- "Economie du savoir"
- Aboriginal employment and urban renewal
- Education of the history of the Province of Manitoba and western Canada and bringing forth the heritage and culture of the Aboriginal people, the Selkirk and Red River Settlers and the fur-traders, Métis, French, English and Dutch, and the role of Anglican Missionaries in the original (agricultural) Indian settlement of Western Canada.
- Human resources in several sectors
- Energy and environment
- Ag Manufacturing
- Local Economy
- Information and communications technology
- Information and communications technology
- Sewn products manufacturing
- Energy sector including electrical generation.
- Advanced technology, e.g. information & communications tech, biomedical, advanced manufacturing (to a minor degree)

- All sectors
- All natural resource sectors
- Community revitalization
- Trade

**4. Choose the most appropriate ending to the following statement:
This project is designed to . . .**

Q4: This project is designed to...	BC	AB	SK	MB	Total
	Number of Respondents				
Encourage research and development and to promote the application of technology. (R&D/Technology)	1	17	7	5	30
Support ongoing and future sustainability of economic development. (Sustainability)	7	6	1	8	22
Enhance the local economy. (Enhance local economy)	4	4	5	7	20
Contribute to the creation, expansion, and modernization of small- and medium-sized businesses. (Developing SMEs)	1	6	4	3	14
Build on the strengths of the local community. (Strengthen local community)	1	2	3	7	13
Create opportunities for private sector investment and entrepreneurship. (Private investment/entrepreneurship)	1	5	1	3	10
Develop a more skilled workforce. (More skilled workforce)	1	2	3	3	9
Encourage trade in products and services in new markets. (Trade/exports)	0	0	0	2	2
Other	4	8	5	4	21

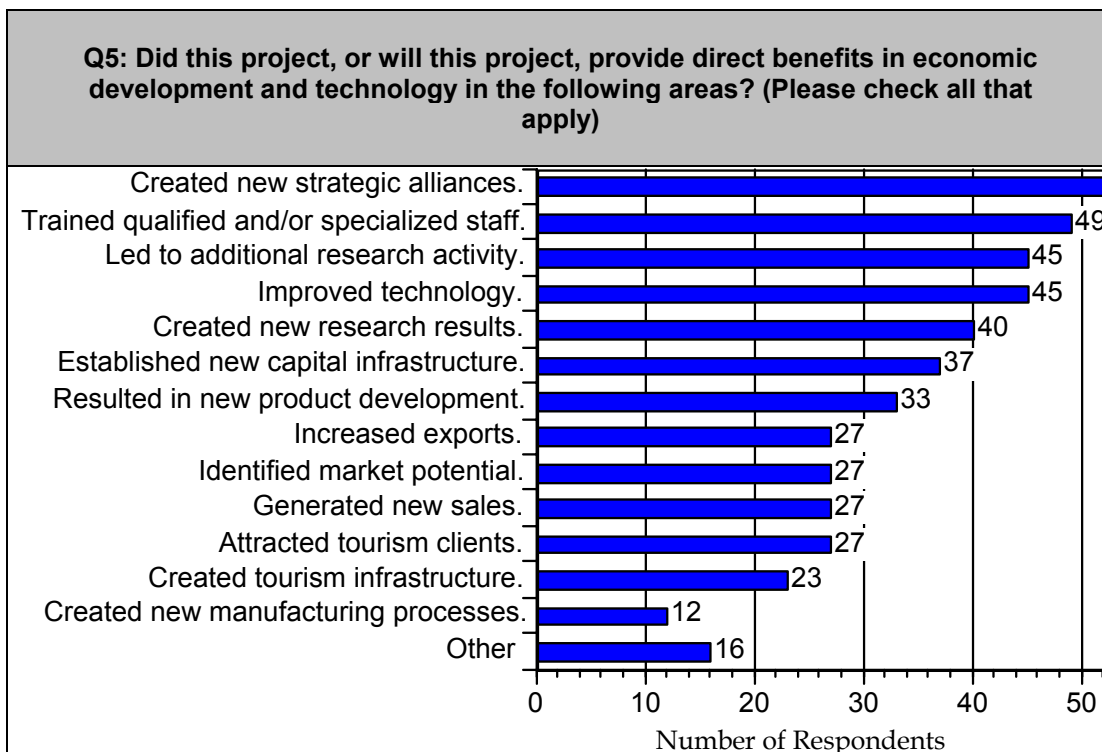


Q4 Other:

- All of the above... a Framework Study
- Enhance the local economy and promote national and international trade.
- Generate increased tourism traffic for communities, businesses and attractions.
- Support ongoing and future sustainability of economic development.
- Transportation has 2 roles: As a facilitator of trade / tourism: As an economic generator in its own right.
- Bring improved technology, operating efficiencies, sales and profits to wood products manufacturing businesses in Northern BC.
- Create a single business identifier to facilitate government and business interactions.
- Promote tourism, education & heritage through the re-established operation.
- Increase value added utilization of Abs Forest Resources.
- All of CDEM's efforts are toward the above stated objectives. WD has been very supportive (financially) of CDEM's objectives.
- Provide a research facility to science and industry.
- Encourage industry compliance so as to create an efficient, equitable transportation system and help protect the infrastructure.
- Create a more equitable education system in the area.

- Encourage conservation.
- Build an infrastructure for the company's IT, accounting and call centre operations.
- Many of the above apply through technology commercialization in ICT, Biosciences, and Engineering Sciences.
- Finance tourism visitation to the church through preparing and distributing tourism brochures, coordinating marketing with the Red River Greenway/Rivers Wets and Manitoba Tourist Information Centres and progress in the development of Chief Peguis Heritage Park.
- Create increased visitor demand for tourism products and services.
- Provide Public access to electronic information to assist with community, economic and social development.
- Increase opportunities for local employment and business benefits from new sector.
- All of these.
- Improve & enhance competitive of SMEs.

5. Did this project, or will this project, provide direct benefits in economic development and technology in the following areas? (Please check all that apply.)



Q5: Did this project, or will this project, provide direct benefits in economic development and technology in the following areas?	BC	AB	SK	MB	Total
	Number of Respondents				
Created new strategic alliances	11	17	14	11	53
Trained qualified and/or specialized staff	6	19	13	11	49
Led to additional research activity	5	25	8	7	45
Improved technology	9	21	7	8	45
Created new research results	5	21	6	8	40
Established new capital infrastructure	9	8	8	12	37
Resulted in new product development	6	12	9	6	33
Increased exports	8	8	4	7	27
Identified market potential	3	9	7	8	27
Generated new sales	4	6	6	11	27
Attracted tourism clients	5	2	7	13	27
Created tourism infrastructure	4	3	7	9	23
Created new manufacturing processes	1	4	4	3	12
Other	3	8	4	1	16

Q5 Other:

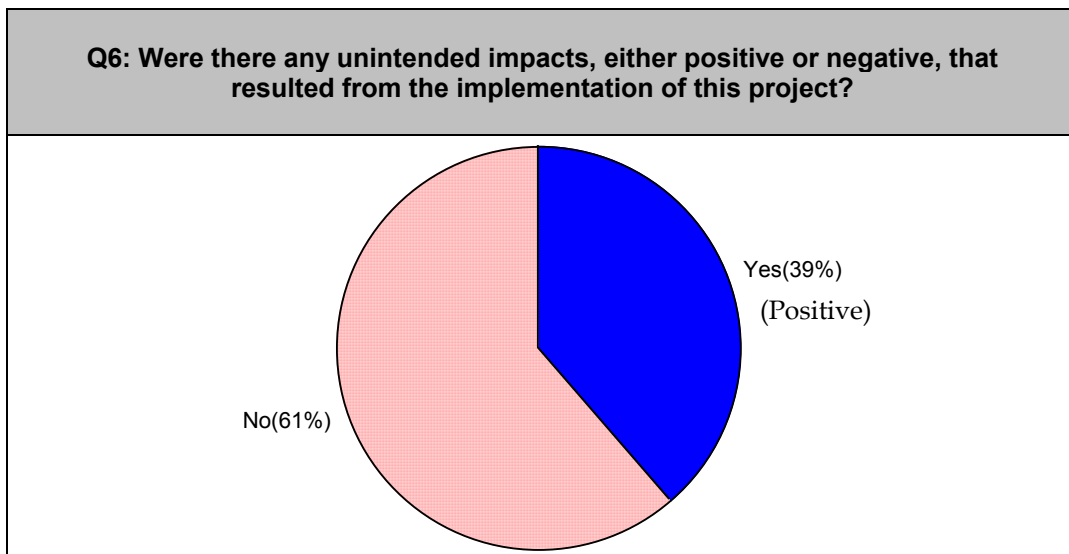
- Exposed potential for reduced costs and increased quality and quantity of goods and services to Nunavut residents in the Kivalliq Region. Examples include electrical power transmission and conversion; fibre optic linkage; freight hauling innovations; and increased trade between Manitoba and Nunavut, to the social and economic benefit of both jurisdictions.
- Transportation has 2 roles: As a facilitator of trade / tourism: As an economic generator in its own right.
- Encouraging regional residents to collaborate in sectoral planning.
- Reduce time and costs associated with meeting government requirements.
- Increased value added wood products
- Attracted four ag/bio companies to Saskatoon
- Led to more technology commercialization
- Allowed students to access education at affordable costs while remaining in their communities.
- More trained adults.
- Enhance protection of natural resources.
- Provide infrastructure for development of the film industry.
- Enhanced transportation system
- Electronic communication capacity increased in rural and remote Alberta.
- Potential for new products development.

- Increased mutual awareness of industry and community needs.
- Creating new information management practices.

Given the direct benefits that you have identified in Question #5 above, please describe the specific outcomes that substantiate your benefit statements. (i.e. number of tourism clients, value of export sales, description of new technology, etc.)

Various

6. Were there any unintended impacts, either positive or negative, that resulted from the implementation of this project?



If yes, please describe these impacts:

Positive	
Greater than expected impact on the local community	9
Greater than expected impact on the international community	4
Greater than expected impact on the national community	2
Greater than expected employment	1
Complementary Infrastructure	1
Strategic Alliances / Collaboration	9
Business Benefits	7

Skilled Workforce	4
Greater than expected Leveraged Dollars	1
Increased Awareness	10
Negative	
Project didn't go as planned	2

Details:

- A positive and negative result was that users became dependent on the increased bandwidth of the wireless wide area network and demanded even more bandwidth to meet their requirements. The wireless radios that were initially installed outgrew their capacity within 2 years and we had to upgrade them to higher models. I.e. the success of the project led to such demands that we had to upgrade the equipment to satisfy our users. Because of our venture into wireless networks, we have established a partnership with a local wireless communications provider to provide us with wireless connectivity for all of Peace River School Division.
- A Canadian company has approached us to license the design of the pilot plant. This company's business is to construct and sell pilot plants world-wide. A U.S. company has contracted for \$260,000 in research using the pilot plant. This company would normally conduct this research in the U.S. The research results are directly applicable to Canadian bitumen and heavy oil.
- Complemented other initiatives (i.e., CyberCity in Grande Prairie, AB). Provincial organizations and businesses will be better prepared to take advantage improved infrastructure - SuperNet initiative in Alberta.
- Several small new facilities are adopting standards that are more intensive than the minimum standards.
- Enhanced training and performance of in-house staff to carry out better "smarter" enforcement.
- As the technology was rapidly improving at reduced cost, it was possible to extend videoconferencing systems beyond the original plan. This has greatly improved the delivery of long-distance education within the region, and demonstrated the potential of this technology.
- The unintended positive impact of the international interest in our E-bulletin is the greatest surprise (see range of countries above). We did not expect to receive such international interest in the work of the CCSE.
- The project is being observed nationally and internationally. (Great Britain, USA, Finland, Australia)

- Positive: IHE has become a model for the formal organization of intersectoral collaboration for other groups across the country.
- When the IBD was founded through the funding acquired from CFI, WEPA and IIPP, none of us then could have foreseen its subsequent evolution into the major research engine of Project CyberCell. Project CyberCell has recently been awarded funding through CFI with excellent prospects of funding (\$34 million) from Genome Canada. Its focus is the creation of a virtual cell. The project is of international scope with numerous commercial potential in the areas of Drug Design and Genetic Engineering. For more information, see www.projectcybercell.com.
- Several Aboriginal communities have decided to get together to discuss these issues as a result of the contract, which in some cases has never happened before. It is likely that as a result of this project, Aboriginal and Métis communities will be more aware of economic opportunities.
- This was all in essence in the original understanding
- Creation of Strategic Alliances. AAL is currently negotiating with Exsenser to combine to make a unique product.
- Impacts intended and unintended were: 1) High learning curve for staff; 2) Huge staff time commitment; 3) Increased perception of the value of the library; 4) Increased perceived value of library staff both to staff and public; 5) Increased knowledge base in rural Alberta with regard to technology; 6) Increased skill for public; 7) Increased sense of community between libraries as they worked together; 8) Increased patron traffic to libraries; 9) Non-traditional patrons coming to use the library for first time; 10) Increased sense of pride in library and community. They were no longer poor rural cousins but participating in the big leagues.
- A course was offered in propoecting because of the interest in this sector.
- As a consequence of the WEPA funding, the Centre has been able to access the programs and opportunities as listed above, in addition to increasing revenues from its ongoing services.
- Project not yet implemented
- IPOST 's activities have highlighted the huge need for enlightened economic planning in BC's coastal economies.
- Our association with the above-mentioned security system manufacturer has opened an opportunity to develop a co-location data-storage facility for his clients use. We anticipate that this will create additional jobs and financial benefits. Without the project funded by the WEPA agreement, the security company would have been forced to outsource this opportunity to another region -- perhaps even the US -- as there is no such facility here other than ours.

- The project has become the focal point for various re-vitalization activities in Vancouver's Chinatown and has united the three levels of government, business and community groups in a common cause to bring about meaningful change.
- The majority of work on the project has not yet started
- Positive Impact. Securing the funds to undertake the feasibility study allowed the Foundation to secure the funding to establish the technical equipment for the Media Studio.
- These were pre-feasibility studies; now that energy and road links appear feasible, more study is required on environmental and social impacts, plus route(s) selection.
- The Bay Downtown has benefited from the re-location of the museum facility within their retail space. Traffic and sales have increased marginally and the HBC, as our new landlords, seem to appreciate this synergy more than our former landlords at the Johnston Terminal at The Forks.
- Agencies/members that previously worked in isolation or antagonistic to one another are realizing the benefits of coordination and cooperation.
- Le changement de mentalité fare au développement économique - tres positif!
- The community is empowered to advocate for the various sectors in the community.
- This project is just getting underway in terms of actual construction, but we now anticipate that it will act as a catalyst to attract other training institutions (I.e University of Manitoba, Red River college) to the area, as well as other businesses and cultural organizations. In the future, we can see Selkirk Avenue in Winnipeg becoming one of the focal points for local tourism and increased economic activity.
- Local organizations contacting the SMARTpark seeking opportunities to become involved in the project, eg. Ducks Unlimited entered into discussions about utilizing native grasses on the berms.
- This project is scheduled to begin in April, 2002. We expect this heritage building will attract visitors interested in Aboriginal tourism and "non-consumptive" eco-tourism/heritage tourism and will attract school tours and bus touts and will positively impact on educating people including First Nations youth on their history and heritage.
- Sales at CraftSpace have well exceeded the projected 25% increase. CraftSpace is reporting a consistent 100% increase in sales as a direct impact of this project.
- Due to lack of awareness of Association, we had to develop a new advertising product, a tourism magazine, to pull together business and attractions.
- Unfortunately, there is a lack of available qualified personnel to undertake research work. It is very difficult to hire individuals from outside the region, as

housing would be a problem, as well as the lack of communications infrastructure that would allow a stranger to conduct work adequately. When hiring less-qualified local residents, these individuals are often subject to personal attacks by other local residents who do not understand the situation. More specifically, those hired are ridiculed, as is the hiring organization. Yet, those same people would also criticize any outsider who might have been hired. On a positive note, more work and planning will have been accomplished than if we had not tried at all. At the conclusion of the project, the planning report will be completed. The information will be available for implementation. It is our opinion that much sectoral planning has already been spurred on by the fact that the oil sands research is being done.

- Better than expected attraction of out-of-province companies to Saskatchewan
- The research project has attracted considerable attention from various private and public organizations. We may have to expand our research activities to facilitate these requests and go back to WEPA for the incremental support.
- Communities throughout the province are partnering up to develop the Saskatchewan Birding Trail. We can now offer guided tours to groups of 2 to 25 people. We have seen community groups, local, provincial and federal governments, conservation groups and local volunteers come together and support this project.
- Construction has not yet begun.
- As noted above, technology-related challenges were not expected. They have had a negative impact on our ability to implement this program to date, but will be overcome. Another unintended impact was creating a heightened awareness around the challenge and requirements to successfully create and implement learning technologies.
- Increased level of awareness of the University of Regina in the international scientific community.
- A positive working relationship with Washington State has been developed and leveraged value added information exchange for compliance activities undertaken by ICBC.
- Unaware of unintended impacts, because project will not be completed until Spring of 2003.
- Ongoing community consultations respecting specific uses in development area.
- Not able to assess until end of the project.

7. What has been the direct impact and what is the forecasted impact of this WEPA funded project?

	Total Realized to Date	Total Forecast over Next Five Years (Cumulative)
1. (a) Number of new, full-time equivalent positions created.	<u>719.5</u>	<u>3902.5</u>
(b) Salary and wages.	<u>\$27,501,922</u>	<u>\$157,873,321</u>
2. Capital investment in buildings and equipment.	<u>\$251,937,528</u>	<u>\$488,165,000</u>
3. Amount of dollars leveraged from private sector investment.	<u>\$39,934,240</u>	<u>\$239,963,500</u>
4. Number of new business starts.	<u>64</u>	<u>307</u>

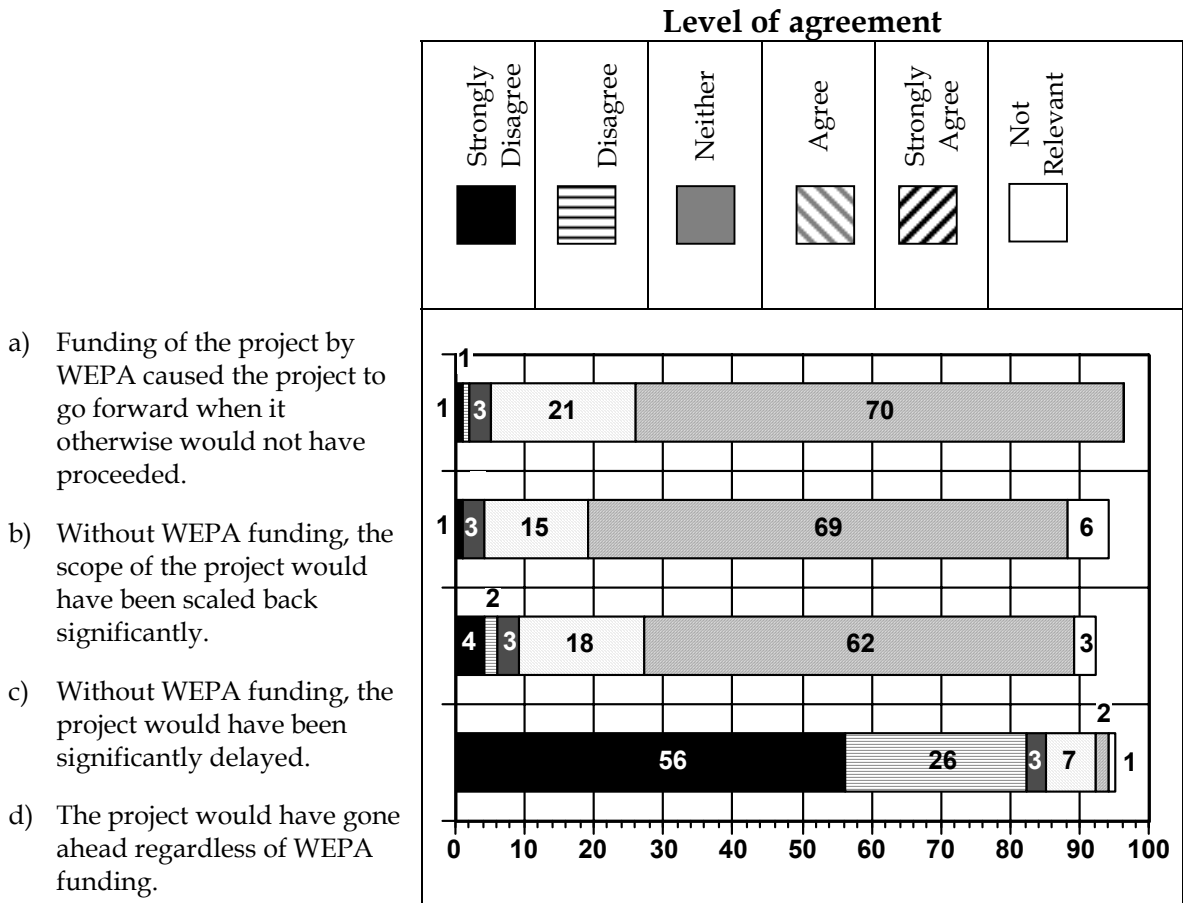
*** 52% of projects, representing 58% of WEPA's investment responded to the survey. Of those respondents, 45% answered this question.**

Extrapolating this data over 100% of respondents shows the following direct impact and forecasted impact:

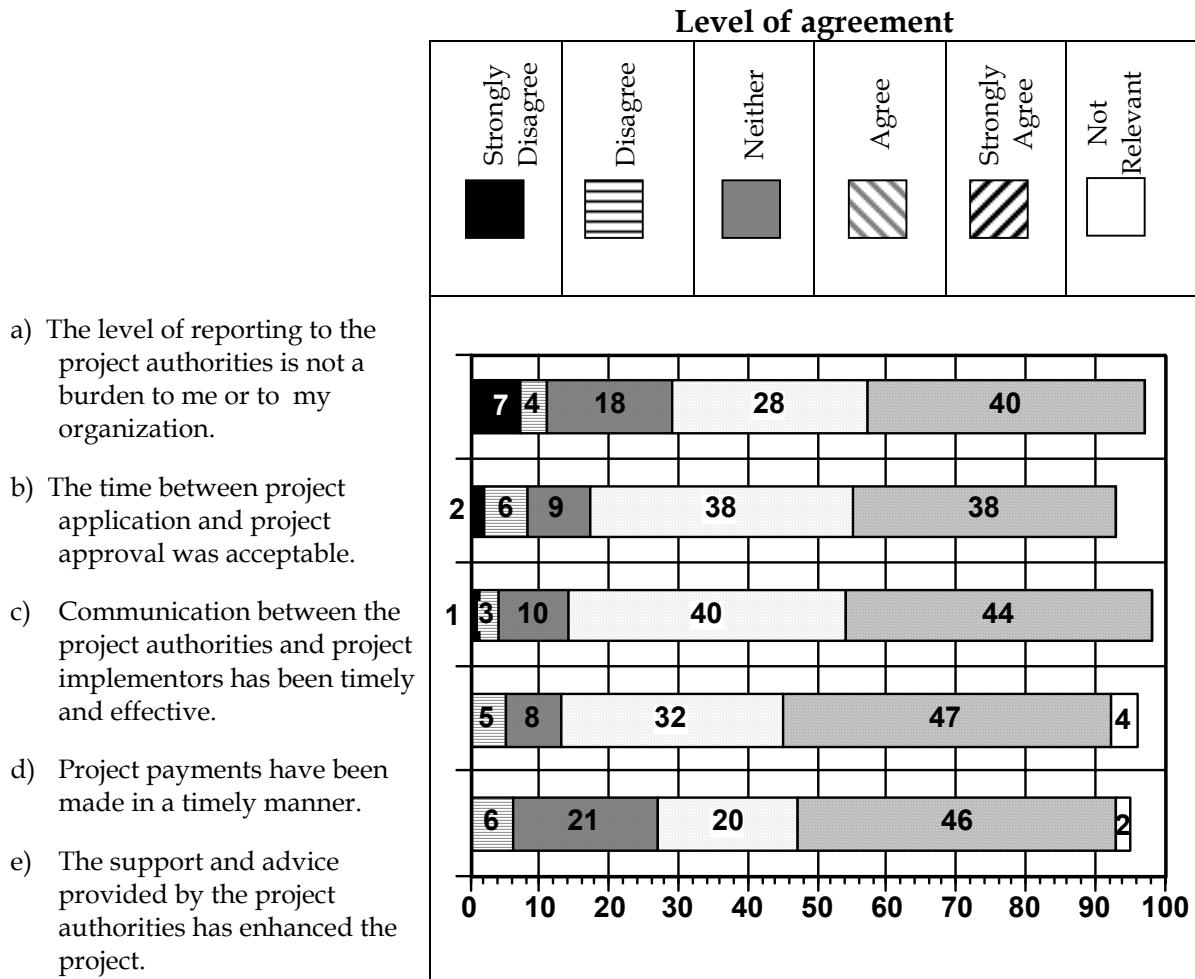
	<u>Extrapolated Total Realized to Date</u>	<u>Extrapolated Total Forecast over Next Five Years (Cumulative)</u>
1. (a) Number of new, full-time equivalent positions created.	<u>1,374</u>	<u>7,450</u>
(b) Salary and wages.	<u>\$52,503,669</u>	<u>\$301,394,522</u>
2. Capital investment in buildings and equipment.	<u>\$480,971,644</u>	<u>\$931,951,364</u>
3. Amount of dollars leveraged from private sector investment.	<u>\$76,238,095</u>	<u>\$458,112,136</u>
4. Number of new business starts.	<u>122</u>	<u>586</u>

8. Consider your situation prior to the approval of the project. How strongly do you agree or disagree with each of these statements?

Please indicate your opinion by using the following scale where 1 is strongly disagree and 5 is strongly agree. Choose the last box if you think the statement does not apply to your project.



9. Given your experience with the WEPA project, how strongly do you agree or disagree with the following statements:



APPENDIX 2 – INTERVIEWS WITH MANAGEMENT AND ADMINISTRATION – RESPONSE SUMMARY

Methodology for Selecting Interview Sample

Personal interviews were held with 25 federal and provincial officials involved in the management and administration of WEPA. The goal was to interview the 2 federal/provincial co-chairs and the 2 federal/provincial co-secretaries in each province. This sample of 16 interviews forms the basis for the summary of responses, weighted equally by province. With the following adjustments, the sample is considered to fairly reflect all responses received during the management and administration interviews.

Saskatchewan was the only province where both the current federal and provincial co-chairs could not be interviewed due to timing. Instead, the former federal co-chair and acting co-chair were each interviewed separately with responses grouped into one federal co-chair response. The responses of the Saskatchewan provincial co-secretary were given a double rating in compiling the summary to substitute for the provincial co-chair. For Alberta, the current federal co-chair and the former acting federal co-chair were interviewed separately and responses combined into one response.

Usually provincial interviews were conducted individually but sometimes several persons were interviewed at the same time. Responses, other than responses of the provincial co-chairs (which were counted separately), were grouped under the responses of the provincial co-secretary (e.g., Alberta and Manitoba).

In all regions, additional WED officials were interviewed with respect to the payments system, decision processes, aspects of several unique projects and historic WEPA perspectives. Where responses repeated responses by the federal co-secretaries, they were not counted in the summary totals. Where responses were not mentioned by the co-secretary, they were added to the appropriate co-secretary's responses. Three individuals from WED headquarters, Edmonton were interviewed with respect to corporate and western regional economic aspects. Because their responses focussed more on provision of background information, they are not included in the summary.

Interview Questions and Responses

Total Responses

Program Relevance

1a. How were WEPA objectives/priorities established?

- established in consultation with WED/econ dev/intergovernmental officials	11
- no general call/request for proposals	11
- prov priorities reflected by prov minister/budget/throne speech	9
- agreement/some components had to be implemented quickly/initially funded infrastructure projects already in pipeline	8
- project proposals examined on individual merits	8
- emphasis on innovation - central WED priority across west	6
- no/little direct consultation with stakeholders	6
- developed a strategic framework for some/all aspects	6
- change of provincial government affected priorities/timing	6
- limited background analysis/environ scan on potential priorities/throne speech	6
- projects reflected agreed joint fed/prov priorities/principles	6
- federal priorities reflected by regional ministers/throne speech	5
- consulted with other fed/prov departments/agencies	4
- already knew priorities so didn't need to consult with stakeholders	4
- used rating/screening system for some/all project selection	4
- targeted consultations with local organizations/sectors/industries	3
- limited ideas from private sector	3
- some central WED direction on priorities/business plan	2
- was a good fed/prov process for selection of priorities/projects	2
- call for proposals for some aspects	1

1b. What would you do differently to improve the objectives/priority setting process?

- focus on strategic priorities	13
- take more time for analysis/consultations	8

- build on WED pan-western pillars to reflect federal priorities	5
- establish front-end consultative process	2
2a. Upon reflection, was WEPA relevant to needs?	
- yes, was relevant to needs targeted, given limited resources	14
- no comment	0
2b. Was the rationale sound?	
- yes, rationale sound for needs/priorities targeted	12
- not particularly sound	3
- no comment	0
2c. Did WEPA achieve its objectives?	
- achieved fed/prov cooperation/coordination	15
- effective tool as one of several tools for econ dev/diversification	10
- incremental prov funds not provided/prov funds rearranged	7
- less successful at achieving strategic objectives/planning	7
- less successful in rural/northern/aboriginal objectives	6
- balanced mix of project sizes/social/cultural/socio-econ develop	6
- achieved strategic innovation objective	5
- incremental fed/prov funds provided	5
- balanced regional distribution of funds	3
3. What driving factors or needs, if any, have changed since inception of WEPA?	
- economic diversification/dev needs still very strong/stronger	10
- provincial priorities changed/climate change/hard/soft econ dev	7
- tighter provincial budget/declining provincial resources	6
- rural economic situation has deteriorated	2
- economy shifting research and development to commercialization	1
- no comments	1
4. What will be your priorities under a new WEPA or similar agreement?	

- systemic/horizontal econ dev support for businesses/communities	11
- env infrastructure/training/research & dev/critical mass	11
- emphasize strategic WED pillars/innovation/pan-western approach	8
- emphasize social dev re northern/aboriginal/youth/health/urban	8
- there should be dedicated incremental funds in future	8
- more focus on regional direction from national/corporate priorities	7
- focus on linked strategic project clusters/capacity building	7
- additional funds should be provided in future	6
- emphasize rural revitalization/community econ develop/leverage	6
- won't be/don't know if will be future dedicated incremental funds	4
- similar to past priorities but packaged differently	3
- help increase positive attitude to econ development	3
- provide no sector/industry specific support	2
- emphasize value-added processing/commercialization	2
- use priorities approved in provincial departmental business plans	2
- need more federal alignment with provincial priorities	2
- less support for social development	1
- limit amount of funding per project/focus on smaller projects	1

Program Benefits/Impacts/Indicators of Success

5a. What, in your view, are the key WEPA regional economic impacts/benefits? (i.e., thinking of quantification of benefits/impacts or indicators of success)

- leveraged investment by private, public sectors	9
- need more time to measure economic impacts/lag effect	9
- difficult to meaningfully quantify/attribute WEPA benefits	6
- enhanced/addressed horizontal integration/issues	6
- funds were spent/projects successfully completed/accelerated	6

- built economic infrastructure/research & development capacity	4
- increased value/new/expanded sales/established new industries	2
- fostered systemic improvements/better information	2
- increased direct/indirect employment numbers	0
- increased value added activities	0
- increased value of spin-off impacts (e.g., investment, new research)	0
 6a. How has WEPA improved intergovernmental consultation, cooperation and coordination?	
- provided a unique forum for coordination of other programs	14
- fostered internal coordination/path-finding within fed/prov systems	12
- helped develop/improve economic development strategies	12
- helped strengthen fed/prov relations/synergies	7
- forum to share with provinces what's happening across Canada	2
 6b. Will these trends continue after WEPA ends?	
- formal/informal fed/prov coordination would decline/die	11
- no comment	4
- risk of increased overlap/duplication without WEPA	3
- informal fed/prov coordination would continue	1
 7. Did WEPA have any unintended or unexpected impacts or consequences?	
- no negative unintended or unexpected impacts/ any were positive	7
- didn't cover all priorities due to poor applications/insufficient funds	4
- don't appreciate unexpected federal announcements	1
- some projects failed/under achieved due to insufficient operating funds	1
 8. What lessons were learned in terms of what factors make WEPA projects successful?	
- should have strategic priorities/themes/categories	13

- provided maximum funding flexibility to address opportunities	11
- focus on strategic project clusters, rather than specific projects	10
- need project specific milestones/success indicators/attribution	10
- use outcome/results-based perform measures, not activity based	10
- too much promotion could raise unrealistic expectations	9
- strike realistic balance in communications/visibility/promotion	8
- projects evaluated on own merits	8
- should have targeted industry/sector/municipal consultations	7
- need transparent eligibility guidelines/principles for good projects	7
- don't compromise critical flexibility characteristic	7
- could provide timely response to needs	7
- need to look at projects in context of big picture/strategic direction	7
- should make full use of pre-feasibility/planning/scanning studies	6
- filled strategic investment gaps/no commitment to operating funds	6
- having dedicated incremental WEPA funds are very important	6
- strong demand continues for WEPA funding	6
- played catalytic role in economic development/diversification	5
- could take calculated risks in project investment	5
- provided seed capital at critical stages	5
- need strong proponents/share risks by investing own funds	5
- need full package of analysis/consultation/due diligence/evaluation	5
- need to track utilization of new facilities/capacity	4
- should have transparent project screening/selection criteria	3
- fed/prov should be viewed as equals in decisions	3
- need more transparent decision-making process	3
- work more with potential clients to develop better proposals	3
- creating future wealth should be the key performance measure	3
- funding too small to be an application-driven program	2
- should be effective 'firewall' for decision-making	2
- used a point rating system for project selection	2
- don't need dedicated WEPA funds/use existing department funds	2
- too many small, non-strategic projects	2
- should use request for proposals in some cases	1

- should use client satisfaction measures 1

Cost Effectiveness

9a. Are WEPAs the most cost-effective way to encourage economic and regional development in each province?

- WEPA very low cost to deliver/little bureaucracy 12
- too few resources for due diligence/performance measurement/project planning/coordination 10
- delivered with existing resources 8
- WEPA provided province with additional delivery funds 7
- reporting/claims payment processes very efficient/effective 6
- no comment 3

9b. What other ways should be considered?

- increase program delivery resources/performance measurement 9
- examine fed/prov model for infrastructure program delivery 7
- no better way of delivering joint econ dev/diversification funding 6
- joint federal/provincial decisions/single window delivery/single client agreement/ common files/data base/joint publicity/visibility 6
- long-term financial commitment (A-base)/3-year priorities review related to needs/opportunities/MOU framework with flexible targets 4
- transfer funds to province for transparent/accountable delivery 3
- consider more industry association/third party program delivery 3
- deliver funds through existing WDP if no incremental prov funds 3
- increase field staff involvement in project development 2
- use tax measures/regulatory relief rather than specific programming 2
- look at ways of freeing co-chairs to manage 1
- consider if feasible to deliver over Internet 1
- don't support unilateral federal program delivery 1
- no suggestions 1

9c. What's more effective – dealing with associations or directly with companies?

- can't subsidize companies for policy/trade reasons 10
- look at systemic/pre-commercial ways of assisting industry 10
- help industry/business associations build capacity for full industry 6
- look at environmental/infrastructure/planning for businesses 5
- public opposed to financial assistance to companies 3
- more private venture capital available/less public support needed 1
- no comment 1

10a. Are WEPAs the most cost-effective way to achieve effective federal-provincial consultation, cooperation and coordination of regional economic development in the province?

- provided effective fed/prov cooperation/coordination/best way 15
- effective because both parties have money at table/WED must have money because has no regulatory/legislative clout 11
- facilitated advocacy of strategic priorities/projects 6
- public expects federal/provincial cooperation/collaboration 2

10b. What other ways should be considered to improve partnerships?

- no better ways to improve partnerships 9
- no suggestions 5
- look at parallel fed/prov spending without agreement 2
- involve other econ dev departments/on management committee 1