

City of Richmond Evaluation of Policy Framework Options for Supporting Eco-Industrial Networking

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Table of Contents

1	Introduction.....	1
1.1	Background	1
1.2	Scope and Objective.....	2
1.3	Spontaneous Versus Strategic EIN.....	3
1.4	Context: EIN in the GVRD	4
2	Building on Strengths – Richmond’s EIN Toolbox.....	5
3	Setting the EIN Stage for Richmond: Recommended Changes to the Policy Framework.....	5
3.1	Existing Policy Framework Tools.....	5
3.1.1	General Action Items	5
3.1.2	BR+E Project	7
3.1.3	GIS Project	8
3.1.4	ICI Green Development Guide	8
3.2	Potential New Policy Framework Tools.....	9
3.3	Internal Capacity Building	9
4	Conclusions	10

Appendix A: Document List

Appendix B: Richmond Policy Framework Review & Action Items

Appendix C: EIN Case Studies Best Practices Review

Appendix D: Case Study Examples by Sustainability Objective

1 Introduction

1.1 Background

The City of Richmond has expressed interest in Eco-Industrial Networking (EIN) as a tool to support sustainability, especially with respect to commercial and industrial activity. This report presents opportunities for the City to use its policy framework to create a solid foundation for EIN in the community.

Sustainable commercial and industrial activity should:

- maximize business competitiveness and profitability;
- simultaneously meet job creation, environmental objectives, and community quality of life objectives;
- create a better place to work, maximizing community and employee health by providing community / employee facilities, amenities and programs;
- incorporate high performance (green) buildings, operations, and infrastructure;
- reduce or minimize impacts on local and global ecosystems;
- promote smart energy management, reducing energy costs and facilitating alternative energy use; and
- promote smart water and materials management, reducing costs and facilitating opportunities for conservation, recycling, reuse, and recovery

EIN represents the practical application of the principles of industrial ecology, and provides an effective framework for finding solutions to achieve sustainability. EIN is defined as the creation of collaborative relationships between businesses, governments, and communities to more efficiently and effectively use resources. Essentially, business to business, business to community or business to local government collaboration, cooperation, and creativity result in greater economic, social, and environmental benefits. The term “resources” refers to materials and energy, but also includes land, buildings, infrastructure, and people. In practice, EIN results in:

- Recovery and cycling of “wastes” for use by another organization;
- Efficient and ecological infrastructure systems
- Increased economic diversification and value-added manufacturing opportunities;
- Leveraged partnership opportunities between a variety of private and public organizations; and
- Integral consideration of ecological, social, and economic impacts

EIN can be applied within geographically bound areas, such as business parks, or over a wider, more dispersed scale. While co-location is common for businesses practising EIN, it is not required; EIN can refer to municipal or regional initiatives such as that being undertaken by the City of Richmond. EIN can be used to strengthen the performance of existing businesses (retrofit) or to improve the design and development of new businesses. EIN includes physical networking, such as the movement of a by-product material from one business to another, as well as virtual networking, such collaboration to reduce costs and improve the effectiveness of business operations, such as procurement, training, or logistics, which may not have physical manifestations. EIN also stresses eco-design aspects of the application, with green buildings and environmental site design practices playing a central role.

The degree to which sustainable industrial development is implemented depends on several factors, such as jurisdiction, staff and stakeholder capacity, cost and timing. General implementation tools for municipal governments include:

- **Education:** Checklists, educational guides, policy statements, and optional development guidelines can encourage sustainable measures or practices.
- **Statutory land use planning documents:** EIN-related objectives and language can be included in municipal documents such as Official Community Plans, zoning, and development guidelines.
- **Other plans and strategies:** EIN-related objectives and language can be incorporated into the myriad of plans and strategies used to guide municipal operations. Examples of these documents include: transportation plans; community energy plans; economic development strategies; and environmental management systems.
- **Professional service Terms of Reference (TOR):** When procuring services for professionals and/or construction, especially related to the creation or revision of plans and strategies, the TOR could be defined to consider EIN as a means of supporting business sustainability.
- **Active outreach:** This could include organizing / sponsoring workshops; offering technical support (in-house or contracted) to businesses / developers; or championing the establishment of multi-partner committees to pursue EIN initiatives.
- **Incentives & Formal Programs:** Land sale / lease agreements, revolving loan fund, or demand side management (DSM) programs could be developed to provide economic incentives for pursuing more sustainable practices.
- **Development of wholly or partly municipally-owned land, buildings, and infrastructure:** Municipalities can actively develop their own projects using an EIN approach, demonstrating leadership and increasing awareness of such practices in the private development community. Examples include the Town of Hinton Eco-Industrial Park (Alberta); the City of Vancouver's proposed district energy utility for Southeast False Creek; and Brazeau County's re-design of a new wastewater treatment plant to demonstrate green building practices and facilitate EIN with the private sector (Alberta).

1.2 Scope and Objective

The overall objective of this study was to evaluate Richmond's policy framework (including statutory documents such as plans and bylaws; strategies; programs; departmental work plans and processes, including business data management; and initiatives) to determine where changes could be made to help Richmond better set the stage for EIN in the community.

The City of Richmond is extremely active at the moment, and has a number of large and complex projects ahead of it (e.g., Olympic Oval). Therefore, staff capacity to actively lead an EIN project, such as developing municipally-owned land into an eco-industrial complex or park, is limited in the short to medium term. However, Richmond can still demonstrate leadership by creating a progressive policy framework that makes it easier for other champions in the community to undertake EIN.

The scope of this study included a review of Richmond's existing policy framework, including statutory plans, strategies, policies, projects, and initiatives. The policy framework review encompassed not just 'environmental' documents, but included documents from most of the key departments. A complete listing of the documents reviewed may be found in

Appendix A. The actual findings of the review and action items are listed in Appendix B. Potential action items were prioritized based on the following considerations:

1. Potential impact for achieving City's strategic objectives;
2. Level of effort / staff time required;
3. Cost of implementation;
4. Timeline issues e.g., when documents are due for revision.
5. Level of external stakeholder engagement required;

The study also included a review of EIN case studies from across North America, specifically focusing on the planning and policy related activities and strategies that were employed to facilitate EIN. Due to time and budget constraints, the case study review was limited to five case studies. Best practices from these case studies have been summarized in Appendix C. Case study examples were also presented in a matrix, broken down by sustainability objective, in Appendix D.

The original scope of the study included two small focus groups with staff and the presentation of the policy review findings in tabular format. It was later decided to forego the focus groups, and that time was re-allocated to the preparation of a brief report to complement the tabulated findings.

1.3 Spontaneous Versus Strategic EIN

It is important to understand that EIN opportunities can emerge spontaneously (spontaneous EIN) or after strategic data collection and analysis (strategic EIN). Spontaneous EIN often represents the 'low hanging fruit'. These opportunities often emerge during discussions with or between local businesses during meetings and networking events, although they can also emerge from a high level data collection and analysis. These opportunities generally require no or low capital investment, nor do they generally require detailed technical studies. Spontaneous EIN opportunities can be implemented almost immediately.

Strategic EIN opportunities generally only become evident after some more rigorous data collection and analysis. Such data usually relates to business and municipal resource consumption patterns and operational needs. Feasibility studies are usually required to flesh out an implementation plan, and some capital investment is generally required. These opportunities may be less obvious, or even counter-intuitive, but can also have more significant cost savings and paybacks. To demonstrate the counter-intuitive nature of some strategic EIN opportunities, consider that during the preliminary stages of the Ross Eco-Industrial Park project, data analysis revealed that trucking related businesses consumed more thermal energy than the manufacturing sector¹. This of course had implications for the direction that the project took and resulted in a focus on EIN opportunities for sustainable transportation in the park, which should maximize greenhouse gas emission reduction.

Spontaneous EIN generally includes bilateral exchanges or arrangements among a small number of firms which, in themselves, yield important triple bottom line benefits, creating early successes (case studies) that will help to engage more stakeholders. Strategic EIN requires a stronger systems perspective, engages more stakeholders, and offers larger, longer term wins. Because more rigorous data collection and analysis has occurred to

¹ Erin Consulting Ltd., Regina, SK and AMEC Earth & Environmental, Contemporary Information Analysis Ltd, Eco-Industrial Solutions Ltd. (2002). Preliminary Technical Study: Assessment of Eco-Industrial Networking Opportunities in an Industrial Area, Regina, SK. Prepared for: Environment Canada - Oil, Gas and Energy Branch.

generate strategic EIN opportunities, a solid business case can be articulated. This ensures that projects are successful and that their benefits are measurable and replicable in other communities. The following table provides further clarity regarding spontaneous versus strategic EIN opportunities.

Table 1: Spontaneous Versus Strategic EIN: Sample Opportunities

Spontaneous EIN	Strategic EIN
Three businesses send their waste to a local bioenergy company to augment the biodiesel manufacturer's feedstock.	Data reveals that there are 340 heavy duty diesel trucks operated by companies within a 10 km radius of the biodiesel plant. Further analysis of fuel consumption and greenhouse gas emissions is completed. A business case is developed and presented to all businesses. They agree to set procurement targets for the purchase of biodiesel. Their collaborative efforts help to secure public sector funding, which strengthens their business case to use biodiesel. It also becomes economically feasible for the group to hire a single auditor to verify greenhouse gas emission reductions. Within a year, the pilot project expands to include biolubricants. The project draws the attention of a food processor from a neighbouring community, who, needing to expand, sites its facility near the biodiesel manufacturer, to which it will send thousands of litres of waste cooking oil.
One business collects stormwater and sends it to its neighbour.	Long-range planning ensures that infill and re-development, and new development facilitate stormwater capture. Community zoning bylaws and development plans support shared, ecological stormwater treatment and distribution to several users.
Three businesses chatting at a breakfast meeting realize that they each plan to offer forklift training in the next 6 months. They co-ordinate this session.	A detailed training needs assessment is completed. Opportunities are identified, with business cases determined and presented to all businesses, even those not yet participating in the EIN partnership. Several more businesses co-ordinate worker health, safety, and environment training. The social networking that occurs between these businesses leads to additional spontaneous EIN opportunities.

1.4 Context: EIN in the GVRD

The Greater Vancouver Regional District (GVRD) anticipates that EIN will support its demand side management (DSM) objectives by reducing infrastructure demand and costs, and improving environmental quality. In addition to supporting EIN projects in Delta (Tilbury Eco-Industrial Partnership) and the District of North Vancouver (Maplewood Community Eco-Industrial Partnership Project), the GVRD has supported region-wide studies that evaluated the potential for EIN and the associated demand side management benefits. The earliest study examined EIN potential in the region's industrial areas, or clusters. Subsequently, the GVRD has supported a similar study to examine EIN potential (small-scale EIN opportunities) in the region's regional town centres; as well as a study examining eco-industrial opportunities for stormwater and wastewater management in the region. The cluster study identified Tilbury Industrial Park as having the highest EIN potential. The second study determined significant potential savings (to both businesses and the GVRD) from the implementation of stormwater recovery and reuse in industrial areas (from multiple industrial properties to other industrial users) and shared / distributed ecological wastewater treatment systems that would facilitate wastewater cascading among industries.

Findings from the GVRD studies are relevant to the City of Richmond. One of the most important findings was that the implementation of EIN opportunities (e.g. shared, ecological wastewater management systems) often requires municipal leadership and foresight, which manifests itself in EIN-supportive policy frameworks, as well as business and municipal data collection and management. For example, municipalities have a wealth of data, such as business license or water consumption, that could help to identify and develop business cases for various EIN opportunities. However, no municipality in the GVRD has a program

to use its data in this way. Furthermore, municipalities have policy tools at their disposal that could significantly affect the feasibility of various EIN opportunities. For example, one GVRD study concluded that future industrial stormwater recovery and re-use in the Maplewood area would likely only be viable if the District of North Vancouver acted now to ensure that a new business park being developed in the area was built out in such a way to encourage stormwater collection. Otherwise, the volumes of stormwater would not be significant enough to make recovery and reuse viable.

2 Building on Strengths – Richmond’s EIN Toolbox

Richmond’s municipal policy framework is rich; the municipality has many policy tools, such as an Industrial Strategy, that other municipalities do not. Some of the key strategies / plans / programs / policies are listed below:

- Environmental Management Strategy (Draft)
- Environmental Project Guidebook
- Sustainable High Performance Buildings Policy
- Water Services Best Practices & Benchmarking
- Sustainable Region Showcase (Goods Movement Project)
- Zoning Bylaw
- Bylaws re development permitting; DCC imposition
- Agricultural Viability Strategy
- Parks, Recreation and Cultural Services Master Plan
- Waterfront Amenity Strategy
- Economic Development Strategic Plan
- Economic Benchmark Reporting
- Criteria for the Protection of Environmentally Sensitive Areas
- Partners for Climate Protection / Climate Change (or GHG Reduction) Action Plan
- Departmental Work Plans (Sewerage & Drainage; Fleet Operations; etc)
- Geographic Information Systems
- City Centre Transportation Plan
- Official Community Plan
- Industrial Strategy
- Environmental Purchasing Guide
- Trail Strategy
- Corporate Plan
- Business Retention & Expansion Strategy

A detailed listing of all policy framework documents reviewed is presented as part of the tables in Appendix A.

3 Setting the EIN Stage for Richmond: Recommended Changes to the Policy Framework

3.1 Existing Policy Framework Tools

3.1.1 General Action Items

Each policy framework document was reviewed in detail, and the many findings and recommended actions have been tabulated in Appendix B. In many cases, the stated objectives already indirectly supported EIN, or, it was clear that by supporting EIN, the City would help to meet objectives outlined in the policy or program. It was important to highlight this, as it helps Richmond to develop its internal business case for broadly supporting EIN. In turn, the review helped to shape recommendations for policy and

program changes or action items that would result in the policy or program explicitly supporting EIN in the community.

This section of the report provides an overview of some key action items. It is important to refer to Appendix B for a more comprehensive listing of opportunities and actions. There were three general areas in its policy framework through which Richmond could facilitate EIN: departmental work plans; plans and strategies; and education and outreach. Internally, Richmond has many programs, such as business licensing or the ongoing population of geographic information systems, that work to collect information that could help external parties identify and evaluate the business case for EIN opportunities. Departmental work plans and corporate policy can be altered to facilitate the management of this data so that it is readily available, in a practical and clear format. Language can be added to plans and strategies to ensure that EIN is not inhibited, and even to actively encourage or drive EIN. Existing education and outreach materials can be altered and/or new materials can be developed to provide staff and the public with information that will encourage them to support EIN.

One of the highest priority, and most straightforward action items, is the addition of explicit EIN language in the draft Environmental Management System, especially in Sections 5.1.4.1, 5.1.4.4, 5.2.1, 5.2.4.1, 5.2.4.4, 5.2.4.7, 5.3.4.2, and 5.4.4.1.

A second high priority and relatively simple medium-term action item would be to ensure that the terms of reference for the revision of the industrial strategy include promoting sustainable business activity through EIN. The current industrial strategy objectives are to ensure a supply of well-located and serviced industrial land; reserve strategic sites for port and water dependent industrial use; ensure City servicing infrastructure serves the needs of local businesses; ensure local transportation infrastructure services needs of industrial businesses and employees; and provide relevant, timely, cost-effective services (e.g. crime prevention, permit processing). As outlined in Appendix B, EIN could help the City to meet a number of these objectives. The resulting revised Industrial Strategy might include the promotion of an EIN approach for new / re-locating businesses or the identification of specific EIN strategies for meeting objectives e.g., collaboration between ag and food processing sectors. The revision process itself can be used as a catalyst to work with the GIS Department to create and maintain a database of potentially complimentary neighbouring business activities and/or sectors to work with the Richmond Chamber of Commerce and other partners to develop and deliver business sustainability / EIN workshops.

A third high priority item would be to ensure that the terms of reference for revising the economic development strategy also include promoting sustainable business activity through EIN. By improving business performance, EIN can help to retain and grow existing businesses. On the other hand, a sustainable business environment will help to attract business, as quality of life becomes a stronger business location criteria. EIN can also help to identify niche opportunities based on resources used or by-products produced by existing businesses that could help to focus business attraction efforts. Incorporating EIN into the terms of reference for the revision would allow for the new strategy to better support agriculture. The current strategy notes the dominant land use in the region is for agriculture, and while farmers are moving towards more value-added activities, business parks continue to grow. The terms of reference could include an EIN-based analysis of links between industry and agriculture to allow for business expansion without infringing on farmland, and to foster partnerships among different sectors - including high tech and agriculture, such as food processing, biotechnologies, etc. This approach also presents the City with an opportunity to meet its goals of strengthening existing collaborative

partnerships and building relationships with academic institutes. The revision process could also act as a catalyst for the City, building on existing EDS recommendations, to host an Economic Development Forum with the express purpose of assisting businesses in identifying EIN prospects that could be built into the revised strategy.

Among the remaining high priority items, several action items occurred multiple times and three distinct potential projects emerged:

- Using the pending BRE program to promote and facilitate EIN (BR+E Project);
- A cross-departmental collaboration to manage business-related data and strengthen the City's GIS tools (GIS Project); and
- The creation of an education package or Industrial / Commercial / Institutional Sector Green Development and Operation Resource Guide (ICI Green Guide Project).

These potential projects are described below.

3.1.2 BR+E Project

The City has a Business Retention & Expansion (BR+E) Strategy with the objectives to identify core BR+E issues facing the City's business community, conduct a Richmond business inventory, and evaluate alternative programs to achieve BR+E in Richmond. A key recommendation is to develop an ongoing BR+E Program which would include ongoing engagement of the business community. By reducing business costs; creating new revenue streams; increasing access to green technologies; and identifying new niche opportunities, EIN increases the profitability and competitiveness of businesses, directly supporting retention and expansion objectives. Therefore, by using an EIN approach to encourage businesses' progress towards sustainability, Richmond would be supporting the retention and expansion of local businesses. It is recommended that the BR+E program be designed to support sustainable business growth through EIN.

BR+E programs involve the creation and delivery of surveys. A traditional BR+E survey elicits information about the company itself (sector, location, outlook), perceptions of the community in which a business operates (e.g. fire protection, traffic conditions, education programs, etc) as well as the local business environment (e.g. property tax rate, regulations, utilities, etc). Much of this information overlaps with that required to identify EIN opportunities. For example, returned surveys might indicate that several businesses in an industrial park face challenges with transportation costs. This common issue becomes a starting point for collaboration and EIN, leading to solutions such as co-ordinated logistics or the use of shared shipping and receiving services.

Questions can also be added to the survey to increase its usefulness in fostering EIN. Generally, more information regarding energy, water, and materials use would be required. As noted in Appendix B, information could also be collected that would be useful to several other departments in the City. For example, the surveys could be used to identify companies with fleets, which might be targeted for alternative fuel or Intelligent Transportation Systems pilot projects.

In addition to proper survey design, short-term action items for a BR+E project include provision of EIN training to Economic Development staff; inclusion of EIN in BR+E Program Terms of Reference; and meeting with the Chamber of Commerce re structuring the BR+E Program with a key role for the Chamber and obtaining raw data from their survey.

3.1.3 GIS Project

A Geographic Information System (GIS) is an excellent tool for the management of business and community related data that supports the identification of strategic EIN opportunities. The City already recognizes the importance of GIS, having recently created a new GIS department, which could be an enormous potential EIN resource, and would also benefit from subsequent EIN initiatives. For example, EIN projects could help to gather data that would supplement Richmond's GIS data e.g., missing data on building footprints and impervious surface. On the other hand, maps and graphics produced by GIS could inspire the private sector to explore EIN e.g., maps of businesses by sector might encourage more collaboration.

The GIS is currently providing much of the information needed for Richmond's sustainability indicators reporting. A GIS & EIN Information Services Initiative might include a detailed review of existing City GIS data to determine which sustainable industries indicators could be calculated; ongoing collaboration with City departments to identify ways in which GIS could support various sustainability projects²; collaboration with GVRD and regional municipal GIS users to explore how Richmond's work might help other municipalities use GIS to support EIN; and collaboration specifically with Environmental Programs and Economic Development departments to create and maintain a database of potentially complimentary neighbouring business activities and/or sectors (this would include a list of in-house sector-related data e.g., land use, revenues, employees, water consumption). An interdepartmental sustainability measures group could also be established to co-ordinate data collection and use of indicators across departments. This will ensure that cross-departmental opportunities are not missed.

Richmond is already a leader in the municipal use of GIS. A project such as this would demonstrate further leadership, and would likely be of interest to other municipalities in the region.³

3.1.4 ICI Green Development Guide

Many of the action items relate to the opportunity to provide the general public and the private development sector with educational resources that will raise awareness and facilitate EIN projects. For example, the current economic development strategy articulates a need for leadership in identifying economic opportunities, facilitating development and fostering collaboration. Richmond can enhance its capacity to meet these goals by including a strong emphasis on developing and disseminating educational materials to business and other partners, highlighting the value of infill, green development, shared infrastructure and the financial merits of better land use.

The availability of educational resources would also demonstrate the City's support in principle for EIN initiatives. Educational resources could be compiled in an industrial / commercial / institutional sector guide to green development in Richmond. This could include existing information from documents such as the Criteria for the Protection of Environmentally Sensitive Areas. The guide could also include EIN-specific information, such as potential by-product synergies for various sectors, or an overview of site design principles to support business and industrial park planning that facilitates green infrastructure and synergies among businesses that operate there. The City could also offer

² For example, the GIS Dept could work with Hydro and Terasen to evaluate where efforts to manage energy should be directed.

³ The City of Greater Sudbury in Ontario is developing a GIS-based tool to help businesses to identify synergies. The project should be completed by fall 2006.

tips for businesses that would help to identify spontaneous EIN opportunities such as how to organize a networking session with neighbouring businesses. This would support most grass roots and spontaneous EIN among local businesses.

Some other pieces of the guide are already in place. For example, the City's existing **Environmental Projects Guidebook** already suggests an "Eco-Friendly Industrial Park" as a potential project. Richmond could update, clarify, and elaborate on the Eco-Friendly Industrial Park concept. (Note: The current write-up is not quite accurate.)

The current document Criteria for the Protection of Environmentally Sensitive Areas provides parameters and examples for development near ESAs. It is an excellent document, however, quite passive in its applicability (e.g. one would only refer to this if they were planning to develop on or near an ESA).

The Guide could be presented as a Green Development Resources section on the City's Business & Development website. This section would include additional research and case study compilation re: ecological protection and incorporation of eco-features in industrial and business parks. The current ESA Guide could also be posted here. (Note: Native Plants information is already available in this part of the City's website.)

Finally, the Guide could be a work in progress. To start, the City could pull together its existing information in one spot. Over time the City, possibly working with other partners like the GVRD or the Canada Green Building Council, could develop additional resources.

3.2 Potential New Policy Framework Tools

The following strategies / plans / programs / policies do not yet exist in Richmond but are being used in other jurisdictions to promote EIN.

- Community Energy Plans / Greenhouse Gas Reduction Strategies (e.g., City of Greater Sudbury)
- Economic Development Corporations (e.g., City of Greater Sudbury, Devens Enterprise Commission)
- Municipal utility corporations (e.g., City of Vancouver, and other cities supporting district energy, which is a good foundation for EIN)
- Green Business Advisory Committees (e.g., City of Greater Sudbury)
- Partnerships with third party service providers (e.g., Halifax Regional Municipality's support for the Eco-Efficiency Centre in Burnside Industrial Park)

More detailed investigation into these tools is outside the scope of this study. However, should Richmond decide independently to take action such as developing a community energy plan or exploring the establishment of an economic development corporation or utility to address other objectives in the City, it is important to remember that there would be a significant potential to further identify and evaluate EIN opportunities through such processes.

3.3 Internal Capacity Building

Regardless of the actions Richmond chooses to take, ongoing internal capacity building would be helpful. Some of this would occur "on-the-fly" as staff undertake their respective action items. However, a concerted, co-ordinated effort would also make sense, especially

since many of the action items require interdepartmental information exchange or even more active co-operation. Potential internal capacity building strategies might include:

- Create a compilation of EIN examples of interest for each department. For example, the Hinton Eco-Industrial Park zoning and development guidelines could be circulated to planning staff. (As a starting point, case study documents provided as part of this study could be circulated.)
- Provide annual staff EIN training seminars. (Annual delivery can address capacity changes due to staff transfers or losses.)
- Encourage staff to participate in external conferences and seminars e.g., Green Infrastructure workshops or International Society for Industrial Ecology workshops.
- Position Environmental Programs (or another suitable group) as the “go-to” staff for EIN. Environmental Programs is and will likely continue to function as the sustainability hub in the City. Foster a culture where staff automatically contact EP when new policies, programs, or projects are being scoped. In turn, EP can facilitate networking amongst City departments, ensuring that maximum value is achieved from all operations.

4 Conclusions

The City of Richmond is in an excellent position to foster EIN in the community. The City has already firmly placed its feet and is making progress on the path to sustainability. The City also has a rich policy framework that includes tools such as industrial, agriculture, and economic development strategies that many other municipalities are only now beginning to develop. This policy framework provides many opportunities for encouraging or facilitating EIN. EIN activities would also provide positive feedback to the City, helping it to meet many of its strategic objectives.

Each policy framework document was reviewed in detail, and the many findings and recommended actions have been tabulated in Appendix B. Several key action items emerged:

- Add explicit EIN language in the draft Environmental Management System
- Ensure that the terms of reference for the revision of the industrial strategy include promoting sustainable business activity through EIN.
- Ensure that the terms of reference for revising the economic development strategy also include promoting sustainable business activity through EIN

Among the many remaining high priority items, action items could be clustered into three projects: Using the pending BRE program to promote and facilitate EIN (BR+E Project); a cross-departmental collaboration to manage business-related data and strengthen the City's GIS tools (GIS Project); and the creation of an education package or Industrial / Commercial / Institutional Sector Green Development and Operation Resource Guide (ICI Green Guide Project).

Finally, it is noted that building internal staff capacity should be an ongoing endeavour.

APPENDIX A: DOCUMENT LIST

Author	Year	Title1	Department/Division	Title2	#Pages	HardCopy Only?	Comments
City of Richmond	Dec-02	Long Term Financial Management Strategy	All Division Heads			Y	
City of Richmond	Sep-03	Long Term Financial Management Strategy	All Division Heads	Report to Council	2		
City of Richmond	Dec-04	2004 Annual Report	Corporate Programs & Olympic Business		67	Y	
City of Richmond	2003	Corporate Plan 2003-2005	Corporate Programs & Olympic Business	Strategic Team and Divisional Work Programs			<i>Since changed due to changing priorities</i>
City of Richmond		Corporate Plan 2004-2005	Corporate Programs & Olympic Business				
City of Richmond		Corporate Plan 2004-200?	Corporate Programs & Olympic Business				
City of Richmond (Urban Development Division: Development Application Division)	Mar-01	Criteria for the Protection of Environmentally Sensitive Areas	Development Application	A Design Manual for Developers, Conservationists, and Designers who are working in or near Richmond's Natural Areas	29		
City of Richmond		Economic Development Strategic Plan Implementation Program Status Update	Economic Development				
City of Richmond	Oct-04	Economic Advisory Committee Terms of Reference	Economic Development	Report to Committee	4		
City of Richmond	Apr-04	Economic Advisory Task Force Report Work Plan	Economic Development	Report to Committee	17		
City of Richmond	2005	City of Richmond Economic Benchmark Report (Draft)	Economic Development		27		
City of Richmond	Feb-02	City of Richmond Economic Development Strategic Plan	Economic Development (most relevant)		114		
City of Richmond	Feb-05	Richmond Business Retention & Expansion Strategy	Economic Development (most relevant)		87	Y	
The Richmond Chamber of Commerce	2005	Richmond Business Assessment Survey	Economic Development (most relevant)	Vision 2005	31		
City of Richmond	Dec-04	Sustainable "High Performance" Building Policy - City Owned Facilities	Engineering - Facilities Planning & Construction	Report to Committee	22		<i>Policy never adopted</i>
GVRD	Jun-04	Stormwater Source Controls Preliminary Design Guidelines	Engineering - Facilities Planning & Construction (most relevant)	Interim Report	43	Y	
City of Richmond	Sep-96	Bylaw No. 6530 - Provision of Works & Services Upon Subdivision of Land	Engineering Planning (most relevant)	To regulate the provision of works and services upon subdivision of land.			
City of Richmond	Jul-04	Infrastructure Review	Engineering Planning (most relevant)	Report to Committee	5		
City of Richmond		Environmental Management Strategy (DRAFT)	Environmental Programs		32		
City of Richmond	2005	Departmental Work Plan 2005	Fleet Operations	Public Works - Fleet	2		
City of Richmond	Mar-05	National Guide to Sustainable Municipal Infrastructure	Operations - general	Report to Committee	5		
City of Richmond	Jan-01	Richmond's Environmental Project Guidebook	Parks	A Community Guide of Environmentally Oriented Projects	81		
City of Richmond	Mar-01	Urban Forest Management Strategy	Parks		27		
City of Richmond	2005	DCC Development Cost Charge	Parks	Parks Land Acquisition & Development	49		

APPENDIX A: DOCUMENT LIST

Author	Year	Title1	Department/Division	Title2	#Pages	HardCopy Only?	Comments
City of Richmond	2002-2003	Parks, Recreation and Cultural Services	Parks, Recreation and Cultural Services	Master Plan			
City of Richmond	Apr-00	2010 Richmond Trail Strategy	Parks, Recreation and Cultural Services	Linking People, the Community and Nature	119		
City of Richmond	Jan-03	The Waterfront Amenity Strategy	Parks, Recreation and Cultural Services	Report to Committee	28		
Catherine Berris Associates Inc	Jan-03	Review of Environmentally Sensitive Areas	Policy Planning		33	Y	
City of Richmond	Feb-01	Environmental Purchasing Guide	Policy Planning				
City of Richmond		Environmental Terms and Conditions of Contract	Policy Planning				
City of Richmond	Oct-99	Richmond Industrial Strategy	Policy Planning		56	Y	
City of Richmond	Nov-04	West Cambie Plan: Proposed Preferred Land use Option	Policy Planning	Report to Committee	13		
City of Richmond	Dec-01	State of the Environment 2001 Update Report	Policy Planning	2001 Update Report	154	Y	
City of Richmond		2005 State of the Environment Update	Policy Planning	Request for Proposal	17		
City of Richmond & Richmond Farmers Institute	Jan-02	Agricultural Viability Strategy	Policy Planning		90		
City of Richmond	Apr-04	Draft Light Industrial Management Policy for the London-Princess Area and Trites Area	Policy Planning	Report to Committee	8		
City of Richmond	Jan-05	Agricultural Advisory Committee 2004 Annual Report and 2005 Work Program	Policy Planning	Report to Committee	6		
City of Richmond		Project Review For ESA Development Permits	Policy Planning				
Barbara A Everdene	Jun-05	Taking Responsibility for Sustainability: The Sustainability Performance Management System Model Applied to Three Local Governments & One Regional Government in Greater Vancouver	Policy Planning (most relevant)	UBC - Master of Arts Thesis			
City of Richmond	2005	Departmental Work Plan 2005	Sewerage and Drainage	Sewerage and Drainage	4		
City of Richmond	Sep-04	Sanitary Sewer Connection Policy	Sewerage and Drainage	Report to Committee	5		
City of Richmond	Jan-05	East Richmond Irrigation and Drainage Study	Sewerage and Drainage	Report to Committee	4		
City of Richmond	Feb-04	"Why Not" Initiative - Report on Progress	Urban Development - general	Report to Committee	8		
City of Richmond	Jun-04	Sustainable Region Showcase for Greater Vancouver	Urban Development - Transportation	Report to Committee	5		
City of Richmond		Transportation Department Work Plan 2005-2007	Urban Development - Transportation		10		
City of Richmond		Transportation Department Work Plan 2005 Proposed Staff Report Submissions to Committee/Council	Urban Development - Transportation		2		
City of Richmond		City Centre Transportation Plan	Urban Development - Transportation		6	downloaded	
City of Richmond	2005	Departmental Work Plan 2005	Water Services	Water Services	5		
City of Richmond	Mar-05	BC Community Water Improvement Program Grant Applications	Water Services	Report to Committee	9		
City of Richmond		City of Richmond Zoning Bylaw Update	Zoning	Request for Proposal	4		
City of Richmond	Jun-02	Bylaw No. 7273 - Development Permit, Variance Permit, and Temporary Commercial and Industrial Use Permit Procedure	Zoning	Development permit, development variance permit and temporary commercial and industrial use permit procedure.	16		
City of Richmond	May-04	Bylaw No. 7676 - DCC Imposition	Zoning	Development cost charges imposition.	10		

APPENDIX A: DOCUMENT LIST

Author	Year	Title1	Department/Division	Title2	#Pages	HardCopy Only?	Comments
City of Richmond	May-05	Draft Zoning Bylaw Update	Zoning		81		
City of Richmond	1999	Richmond Official Community Plan	Zoning		230		
City of Richmond	Jun-05	Monthly Key Indicators			1		
GVRD	Feb-01	Building Deconstruction Master Specification			13	Y	
GVRD	Apr-98	Project Waste Management Master Specification			6	Y	
Stantec	Jan-05	Proposal for City of Richmond Zoning Bylaw Update				Y	
City of Richmond	Aug-05	Richmond Economic Development Review 2005	Economic Development				
City of Richmond	Jan-02	Training and Development - Training Categories	Human Resources	Policy Manual - Admin Procedure 6010.01	3		
City of Richmond	Aug-05	Rich Thomas Portfolio - HR Strategic Issues for Consideration <i>Draft</i>	Human Resources		1		

Department / Division	Your Objectives	What EIN Can Do For You (Strategies)	How You Can Support EIN (Strategies)	Actions	Effort	Priority
	<ul style="list-style-type: none"> (Milestone 1): complete inventory of current emissions 	energy options that other City projects [or private partners] could benefit from, supporting a collaborative effort?)		emissions reducing cooperative opportunities.		
Facility Planning & Construction	Sustainable High Performance Buildings Policy <ul style="list-style-type: none"> LEED™ standards for new buildings and major renovations Foster awareness and innovation among employees 	<ul style="list-style-type: none"> Could identify synergies to further improve performance. Supports local high performance commercial & industrial building practices as living case studies for staff. 	<ul style="list-style-type: none"> Encourage exploration of EIN with nearby buildings / operations e.g., local waste heat source? 	<ul style="list-style-type: none"> Add language encouraging exploration of EIN to policy 	M	L
Operations						
Overall	<ul style="list-style-type: none"> Support the National Guide to Sustainable Municipal Infrastructure (InfraGuide); Staff will review, and where practical, implement the best practices contained in the Guide 	<ul style="list-style-type: none"> EIN approach can increase value from investment (e.g., new revenue streams at Brazeau County WWTP); facilitate uptake of green infrastructure; reduce demand on infrastructure (extend life and reduce O&M) 	<ul style="list-style-type: none"> In partnership with other InfraGuide municipalities, Richmond could develop best practices related to EIN 	<ul style="list-style-type: none"> Forward any Richmond EIN tools that emerge practices (including tools such as education kits) to InfraGuide for circulation to member communities and posting on website Make someone in Operations with checking with EP quarterly (or even bi-annually) to see if there is anything to report 	L	M
Sewerage & Drainage	Department Work Plan <ul style="list-style-type: none"> Energy: Investigate possible use of solar energy in Drainage Pump Stations (e.g. lighting); work in conjunction w/facilities mgmt on other potential energy saving programs.; Investigate use of LED lighting in drainage pump stations. Well Managed - Performance Mgmt & Best Practices: Complete National Water and Wastewater Benchmarking 	<ul style="list-style-type: none"> EIN approach could help identify businesses exploring similar ideas. Group pilot project more likely to get grants, plus raises profile (contributes to Richmond demonstrating leadership) and could reduce costs. EIN initiatives rely on resource analysis, which may feed into benchmarking, reducing data 	<ul style="list-style-type: none"> Make sure business community knows what Richmond is exploring (work with Ec Dev and EP to communicate?) EIN Best Practices collected by other departments e.g. EP, could be incorporated into benchmarking and 	<ul style="list-style-type: none"> Send progress email to Ec Dev and EP Meet with Ec Dev and EP to explore how they might help to engage businesses interested in solar energy, too <ul style="list-style-type: none"> e.g, BRE surveys. Quarterly reports: Richmond is reviewing feasibility of LED lighting in drainage pump stations and would be interested in meeting with businesses who might have the same issue. Richmond plans to purchase LED technology after determining there is a 5 year payback for energy savings. Any businesses interested in purchasing similar equipment should contact the city. Send progress email to Ec Dev and EP Meet with Ec Dev and EP to explore 	L	L

Department / Division	Your Objectives	What EIN Can Do For You (Strategies)	How You Can Support EIN (Strategies)	Actions	Effort	Priority
	<p>Program including identification and review of other jurisdictions</p> <p>Irrigation and Drainage Study</p>	<p>collection and analysis needs.</p> <ul style="list-style-type: none"> Irrigation & Drainage Study - Apply EIN to stormwater mgmt (green infrastructure). EIN supports stormwater mgmt features e.g. infiltration rain gardens, which can add much need green space and double as buffer zones in industrial areas. 	<p>best practices.</p> <ul style="list-style-type: none"> Industry Canada has developed indicators to measure sustainable industries, including implementation of EIN. The indicators could be incorporated and piloted (currently draft) Put the already-completed regional EIN studies to good use e.g. industrial clusters; stormwater / wastewater management Involve EP – in ESA analysis, include criteria for infiltration / permeability 	<p>how they might help with benchmarking and best practices</p> <ul style="list-style-type: none"> Meet with other groups working on performance measurement (Ec Dev, EP, SOE, etc) to co-ordinate benchmarking. Explore DSM initiative: baseline indicators, set targets, develop EIN education package to encourage businesses to reduce wastewater generation. Ensure TOR includes classifying industrial areas suited for infiltration. For those that are, study should evaluate how co-ordinated stormwater management might assist e.g., where co-op of multiple owners is required. For areas where infiltration not desired (or not likely to be retrofit) evaluate options for stormwater collection and reuse (refer to previous GVRD study) 	H	M
Water Services	<p>Best Practices & Benchmarking Program: Benchmarking doesn't appear to be related to efficiency or DSM.</p>	<ul style="list-style-type: none"> If DSM and resource efficiency were objectives, then EIN could help achieve those objectives wrt water use by businesses. Best practices should look at encouraging water DSM in industry, which usually results in energy savings. 	<ul style="list-style-type: none"> EIN Best Practices collected by other departments e.g. EPs, could be incorporated into benchmarking and best practices. Industry Canada has developed indicators to measure sustainable industries, including implementation of EIN. The indicators could be incorporated and piloted (currently draft) 	<ul style="list-style-type: none"> Send progress email to Ec Dev and EP Meet with Ec Dev and EP to explore how they might help with benchmarking and best practices Meet with other groups working on performance measurement (Ec Dev, EP, SOE, etc) to co-ordinate benchmarking. 	L	L
Fleet Operations	<p>Department Work Plan</p> <ul style="list-style-type: none"> Biodiesel Assoc of Canada: Participate & contribute to the establishment of fuel quality standards; Electric Cars: Review & complete business case on use of electric vehicles; Participate in the Nat'l Fleet Smart Program; Communicate & Educate the public about our service 	<ul style="list-style-type: none"> Applying EIN approach ensures that all potential stakeholders are involved. This can improve business cases for new, innovative technologies, by, for example, leveraging funding. EIN also facilitates data collection and sharing. 	<ul style="list-style-type: none"> Engage private fleets to encourage them to co-operate re: cooperative biodiesel procurement targets and pricing; joint electric car projects; co-ordinated FleetSmart training (e.g., Ross EIP, Regina) Leverage off municipal leadership to change private sector behaviour and facilitate transportation-related EIN, reducing overall ghg emissions from 	<ul style="list-style-type: none"> Meet with Ec Dev to keep Ec Dev up to date re: local biodiesel initiatives (may inform BRE Program, which could id companies with significant diesel purchases) Meet with EP to keep EP up to date: biodiesel work could inform GHG Reduction Plans Work with EP to develop education and outreach materials 	L L M	H M M

Department / Division	Your Objectives	What EIN Can Do For You (Strategies)	How You Can Support EIN (Strategies)	Actions	Effort	Priority
			Richmond	re: using EIN to move towards more sustainable transportation for businesses (collaboration to increase technology uptake, reduce costs, share logistics, etc)		
GIS & Urban Development						
Geographic Information Systems (new dept)	General Mandate Manages and integrates data, largely from Engineering and Policy Planning.	<ul style="list-style-type: none"> EIN initiatives could help to gather data that would supplement Richmond's GIS data e.g., missing data on building footprints and impervious surface. 	<ul style="list-style-type: none"> Maps and graphics produced by GIS could inspire private sector to explore EIN e.g., maps of businesses by sector might encourage more collaboration. Many businesses are unaware of what businesses nearby do. Data and analysis could shape EIN policies to support EIN e.g., land use planning, SOE reporting 	<ul style="list-style-type: none"> Review GIS data to determine which sustainable industries indicators could be calculated. Meet with SOE team to evaluate which sustainable industries indicators should be included. Calculate sustainable industries indicators. Work with EP and Ec Dev (and maybe Chamber of Commerce?) to communicate these results in a way that might motivate businesses to work to improve these values. Work with Ec Dev to see where BRE surveys might help to collect data so that additional indicators could be measured, supporting baselines, targets, and action. Meet with GVRD and regional municipal GIS users to explore how Richmond's work might help other muns use GIS to support EIN. 	<p style="text-align: center;">Done</p> <p style="text-align: center;">Done</p> <p style="text-align: center;">M</p> <p style="text-align: center;">H</p> <p style="text-align: center;">H</p> <p style="text-align: center;">M</p> <p style="text-align: center;">H</p> <p style="text-align: center;">M</p> <p style="text-align: center;">H</p>	<p style="text-align: center;">Done</p> <p style="text-align: center;">Done</p> <p style="text-align: center;">H</p> <p style="text-align: center;">H</p> <p style="text-align: center;">H</p> <p style="text-align: center;">H</p>
Development Applications	Criteria for the Protection of Environmentally Sensitive Areas Provides parameters and examples for development near ESAs	<ul style="list-style-type: none"> EIN supports land use that protects local ecology and reduces development footprint. In particular, collaborative planning across several sites may make some solutions more feasible e.g., shared parking with adjacent site reduces footprint making it easier to protect nearby ESA. 	<ul style="list-style-type: none"> Excellent document, especially appendices. Unless development is in a sensitive area, though, access to guide is passive. It should be made publicly and widely available. Guide could be expanded to include case studies of ecological protection and incorporation of eco-features in industrial and business parks. 	<ul style="list-style-type: none"> Create a Green Development Resources section on website under Business & Development. Post ESA guide there. (Note: Native Plants info already there). Complete additional research and compile case studies re: ecological protection and incorporation of eco-features in industrial and business parks. 	<p style="text-align: center;">L</p> <p style="text-align: center;">H</p>	<p style="text-align: center;">H</p> <p style="text-align: center;">M</p>
Transportation	Sustainable Region Showcase (Goods Movement Project): <ul style="list-style-type: none"> Request that the GVTA consider the Fraserport industrial lands in SE Richmond for the proposed Goods 	<ul style="list-style-type: none"> EIN supports efficiency, co-ordinated logistics, efficient land use planning, alternative fuel / 	<ul style="list-style-type: none"> Encourage businesses to take EIN approach to reduce their truck trips, manage logistics, etc. 	<ul style="list-style-type: none"> Meet with Tilbury Eco-Industrial Partnership and Fraser Lands reps to discuss co-operation (could only 	<p style="text-align: center;">M</p>	<p style="text-align: center;">M</p>

Department / Division	Your Objectives	What EIN Can Do For You (Strategies)	How You Can Support EIN (Strategies)	Actions	Effort	Priority
	<p>Movement Efficiency & GHG Study. (It appears that Burnaby & Surrey were selected, but based on recent conversations with GVTA re: Tilbury, this may be flexible)</p> <p>City Centre Transportation Plan:</p> <ul style="list-style-type: none"> Balance automobile usage with other means of travel, with an emphasis on transit Make roads work for pedestrians, cyclists, and transit, not just cars Encourage people to make transportation choices which curb traffic growth Implement improvements to take advantage of opportunities created by new development. <p>Transportation Dept 2005-2007 Work Program:</p> <ul style="list-style-type: none"> Intelligent Transportation Systems (ITS) explore innovative technologies to maximize effectiveness of existing infrastructure, networking with municipal, regional, and provincial counterparts Transportation Demand Management (TDM) Initiatives: Developing implementation strategies to improve alternative transportation modes (transit, cycling, walking, carpool, development requirements), "green" funds Community Liveability and Urban Design Integration: incorporation of urban design into transportation improvements in addition to movement of vehicles goods, and 	<p>vehicle technology uptake, all of which support efficient goods movement & ghg reduction. Note: Tilbury Eco-Industrial Partnership may be approaching GVTA to tie in their EIN initiative to the Showcase. Using EIN to support sustainable transportation is key for Ross Eco-Industrial Park in Regina.</p> <ul style="list-style-type: none"> EIN approach can facilitate relationship building and collaboration needed for carpooling, shift (and commute) management, as well as other transportation discussed above. EIN approach is relevant to town centres (GVRD study and LeBreton research) Through collaboration, businesses can: <ul style="list-style-type: none"> Inform land use planning to improve the flow of materials, increase road use efficiency, and reduce road operating and maintenance costs Co-ordinate public transit programs for employees Co-ordinate logistics, including exploration of more rail and barge use (reduced truck trips by 20% in one EU park) Share shipping and receiving services and facilities Improve performance, reduce resource use, and increase green technology use in transportation-related businesses and activities 	<ul style="list-style-type: none"> Encourage Urban Development to take EIN approach to look at strategies such as geographic clustering and land use patterns that facilitate alternative transportation (e.g., Maplewood Project) Explore opportunities to still link with this study, maybe in partnership with Delta and the Tilbury Project. Facilitate relationships between city centre businesses Support education & awareness re: small scale EIN For those ITS technologies and practices of interest to Richmond, explore whether any businesses are also interested in collaborating on pilot projects (reduce costs, leverage additional funds, share risk, achieve greater benefits like ghg reduction). Ec Dev may be able to provide liaison with businesses. For TDM, consider initiative with an industrial or business park (note: Green Municipal Funds have special Eco-Industrial Park category) Consider facilitating shared shipping and receiving, loading, warehousing, storage etc to reduce transportation needs in City Centre. Consider Industry Canada draft Sustainable Industries 	<p>incl. data provision) re: supporting GVTA Showcase.</p> <ul style="list-style-type: none"> Meet with Ec Dev to see how BRE Surveys might collect info to support better goods movement through EIN strategies such as geographic clustering and land use patterns that facilitate alternative transportation (e.g., Maplewood Project) Obtain GVRD Small Scale EIN Study and LeBreton paper. Distil for education and outreach and disseminate internally and publicly (web, mail out, etc) Ask Ec Dev to incorporate transportation questions into BRE Survey so that companies with fleets can be flagged as ITS partners. Meet with City Centre planning team to discuss incorporation of EIN to manage transportation Meet with Tilbury Eco-Industrial Advisory Partnership to discuss common objectives. (see http://www.dr society.bc.ca/TEIP_in dex.htm) Meet with Ec Dev, EP, and Development to discuss TDM project for business and industrial parks (could be co-ordinated with Tilbury project in Delta. If interest is there, convene meeting with 	<p>L</p> <p>M</p> <p>L</p> <p>L</p> <p>M</p> <p>H</p>	<p>H</p> <p>M</p> <p>H</p> <p>M</p> <p>M</p> <p>M</p>

Department / Division	Your Objectives	What EIN Can Do For You (Strategies)	How You Can Support EIN (Strategies)	Actions	Effort	Priority
	<p>people, special focus on densification of City Centre and neighbourhood service centres</p> <ul style="list-style-type: none"> State of the Environment Update: update of transportation-related indicators in 2001 SOE for 2005 SOE, evaluate new transportation-related indicators, develop benchmarks and targets for indicators 	<ul style="list-style-type: none"> Jointly support pilot projects for alternative fuel / technology vehicles Co-ordinate commuting (adjust shifts, facilitate car pools, help Translink understand localized transit needs) 	<p>transportation-related indicators for SOE</p> <ul style="list-style-type: none"> Maintain communications with Corporation of Delta and City of Regina, both of which are supporting EIN projects with transportation focus 	<p>main logistics companies, GVRD, Fraser Port Authority, etc. If partners are supportive, develop TOR and secure funding/</p>		
Zoning	<p>Official Community Plan (OCP):</p> <ul style="list-style-type: none"> Develop economically and environmentally sustainable infrastructure Develop energy efficient communities Protect & recognize key areas for industrial uses & activities Support more light industrial / business park activity Address industrial land shortages 	<ul style="list-style-type: none"> EIN establishes co-operative, mutually beneficial relationships that could reduce water consumption; reduce wastewater generation; reduce solid waste generation; facilitate recycling; and reduce transportation. Infrastructure itself can be part of EIN e.g., new Brazeau County, AB WWTP, where treated wastewater will be sold to industry to displace potable water. EIN builds relationships that facilitate energy sharing and conservation, support for alt. energy pilot projects." EIN supports ecological design principles into bldg design, site design, process operations. EIN improves environmental performance of businesses, making them better neighbours to other land uses (so maintaining industrial activity is more accepted) EIN improves financial performance of existing companies, making it more likely they will stay and grow. Several of the proposed I2 and I3 zones are near the city centre. Because EIN improved environmental performance of businesses, industrial activity can 	<ul style="list-style-type: none"> Explicitly support EIN approached in OCP Consider impact of EIN initiatives on long-term planning (e.g., extending life of infrastructure, facilitating industrial densification / infill development) 	<ul style="list-style-type: none"> Use Local Plan and OCP renewals processes to raise awareness re: EIN as means for achieving greener infrastructure, improving energy efficiency, optimizing land use. (Research. Develop materials. Ensure proper facilitation. Consider tools like design charrettes.) Add language re: supporting EIN approach or at least components e.g., clustering that facilitates synergies, shared infrastructure, etc. (note Corp of Delta draft revised OCP contains specific EIN language) 	<p style="text-align: center;">H</p> <p style="text-align: center;">M</p>	<p style="text-align: center;">M</p> <p style="text-align: center;">H</p>

Department / Division	Your Objectives	What EIN Can Do For You (Strategies)	How You Can Support EIN (Strategies)	Actions	Effort	Priority
	<ul style="list-style-type: none"> Preserve farm land / support for agriculture industry <p>Zoning Bylaw</p> <ul style="list-style-type: none"> Defines different land uses and defines what is allowed in those land uses, and how development must occur (e.g., setbacks, parking, floor space ratio) Recent update completed to implement the City's OCP, Area Plans, Sub Area Plans and Develop Permit Guidelines; benchmark Richmond against at least 3 other municipalities; create new standard zones to reduce need for new CD zones; and generally modernize standards. 	<p>be more accommodated in a mixed use setting.</p> <ul style="list-style-type: none"> By identifying synergies, EIN supports geographic clustering of businesses By supporting green buildings, green site design, green infrastructure, and shared materials and services, EIN can reduce businesses' spatial requirements, EIN helps to identify niche value-added opportunities, can create linkages between ag and other industries like high tech, and supports sustainable bldg/site design to protect farm land. <ul style="list-style-type: none"> EIN approach can support more sustainable land use and operations, especially in industrial, commercial, institutional, and agricultural areas. 	<ul style="list-style-type: none"> In general, sustainability not addressed in zoning bylaw update. Next time, could require consultant with green dev experience, benchmark sustainability & zoning in other jurisdictions, explicitly require EIN in Industrial zones, performance-based rather than prescriptive requirements, and consider in context of other tools / policies e.g., EMS, incentives. Some suggestions <i>might</i> be to: <ul style="list-style-type: none"> Make utilities an allowable use in more (most) zones (distributed green infrastructure usu. Important for EIN e.g., several businesses sharing a wastewater treatment system); Support multi-objective utility corridors to facilitate district energy systems, recovery of heat from wastewater, etc. Exclude green roofs, PV area from density calculations. 	<ul style="list-style-type: none"> Draft language for future TOR to incorporate EIN into Zoning Bylaw - would include focus groups and consultation as market acceptance key Compile case studies of zoning bylaws (and associated Development / Design Guidelines and Standards) from jurisdictions supporting EIN (in progress). Re: case studies: Circulate amongst zoning staff. Assign responsibility for making an annual update. 	<p>H</p> <p>M</p> <p>L</p>	<p>M</p> <p>H</p> <p>H</p>

Department / Division	Your Objectives	What EIN Can Do For You (Strategies)	How You Can Support EIN (Strategies)	Actions	Effort	Priority
	<p>Bylaw 7676 DCC Imposition: Sets rates for development cost charges. For industry, these are per foot plus per acre charges for roadworks, waterworks, drainage, sanitary sewer, parks.</p> <p>Bylaw 7273 Development Permits: To outline development permit, variance permit and temporary commercial and industrial use permit procedures.</p>	<ul style="list-style-type: none"> Data collected in EIN projects can support more accurate and triple-bottom line accounting for the true cost of infrastructure in industrial and business park areas. EIN approach can help developers to green their projects e.g., stormwater retention ponds that store water for industrial re-use, or waste energy recovery, that can help their developments meet any existing sustainability objectives. 	<ul style="list-style-type: none"> Be flexible with setbacks, massing etc if this makes synergies feasible. Create an eco-industrial zone or integrate eco-industrial principles in standard designations. Be flexible with uses and scales (EIN supports innovative zoning that facilitates more uses esp. supporting mix of company sizes & opportunities for niche green businesses). In theory, industrial and business park developers could use EIN to reduce infrastructure demand (e.g., road area) and negotiate a lower DCC (bylaw would have to be revised to include new rate). In practice, such a process is not likely to be undertaken. Should any EIN related guidelines or standards be adopted, then some training / capacity building of the Development Permit Panel would be required. 	<ul style="list-style-type: none"> None required at this time. In the long-term, as green infrastructure becomes more common, including DSM, DCC's may reflect actual infrastructure demands more accurately and may be used as incentives. None required at this time. 	H	L
Policy Planning	<p>Richmond Industrial Strategy</p> <ul style="list-style-type: none"> Ensure a supply of well-located and serviced industrial land Reserve strategic sites for port and water dependent industrial use. Ensure City servicing infrastructure serves the needs of local businesses. Ensure local transportation infrastructure services needs of industrial businesses and employees. Provide relevant, timely, cost-effective services (e.g. crime prevention, permit processing). 	<ul style="list-style-type: none"> Supports and fosters better land use planning strategies such as densification, and brownfield redevelopment, as well as operational strategies such as shared facilities (e.g. parking), all of which increase industrial land availability. Identifies the most appropriate land uses, by accounting for ecological, economic, and social objectives, as well as nearby business activities. Reduces impact of businesses, 	<ul style="list-style-type: none"> Revised Industrial Strategy could <ul style="list-style-type: none"> encourage developers and re-locating businesses to explore site-scale EIN opportunities (e.g. sharing parking) that would reduce developed area needs and maximize land use efficiency support identification of complimentary neighbouring business activities (promotes various shared land uses, which also frees up industrial land). support an EIN approach to 	<ul style="list-style-type: none"> Draft TOR for updating the Ind. Strat. that include adding EIN / industrial sustainability language. Possible additions include: <ul style="list-style-type: none"> Promotion of EIN approach for new / re-locating businesses. (where can you reduce costs by sharing?) research of other municipalities' green infrastructure case studies and/or guidelines for industrial developments. 	L	H

Department / Division	Your Objectives	What EIN Can Do For You (Strategies)	How You Can Support EIN (Strategies)	Actions	Effort	Priority
	<p>State of Environment Report</p> <ul style="list-style-type: none"> To present updates of 23 indicators (net changes since 1998; direction of change; adherence to existing standards; achievement of targets; and comparisons with other communities). 	<p>making better interface with adjacent land use, which could facilitate preservation of strategic sites such as port and waterfront lands</p> <ul style="list-style-type: none"> Reduces infrastructure demand, extending capacity of existing systems. Facilities shared, distributed (and usually green) infrastructure and utilities (e.g., municipal and private) and multi-objective approach can help get more value from infrastructure investments (e.g., treated wastewater as revenue stream) Results in growth of "re" industries, such as recycling and reprocessing, which can reduce community solid waste disposal needs. Promotes sustainable transportation strategies including TDM. Encourages more coordinated business activities that can reduce automobile/truck travel Facilitates the protection and enhancement of open space and ESAs Support progress wrt environmental protection, resource use 	<p>develop cost-effective and environmentally appropriate infrastructure upgrades.</p> <ul style="list-style-type: none"> support working with businesses to reduce their transportation requirements. Promote other tools such as "Design Criteria for Envmt Sensitive Areas" to businesses developing waterfront property. Provide sustainability / EIN education and capacity building opportunities for local businesses (ultimately reduce water/energy consumption, wastewater/solid waste generation, etc) Foster partnerships among those businesses that can share utilities or underutilized space Motivate community groups and private sector to take EIN actions to score higher. Include more indicators relevant to EIN (and industrial / business activity in general): energy and ghg, broken down by industrial use; track water conservation efforts, especially ICI; pervious surface in industrial areas; tonnes of "waste" diverted and used instead. land-use related Sustainable Industries indicators; green purchases made by the City; # of "re" and "green" companies (linked with BRE data) Examine potential for knowledge 	<ul style="list-style-type: none"> Identification of specific EIN strategies for meeting objectives e.g., collaboration between ag and food processing sectors <p>Work with EP and Ec Dev on the following:</p> <ul style="list-style-type: none"> Work with GIS Dept to create and maintain a database of potentially complimentary neighbouring business activities and/or sectors. (see Sudbury EIN Strategy RFP) Work with Richmond Chamber and other partners to develop and deliver business sustainability / EIN workshops. Work with Richmond Chamber and other partners to develop an EIN / Sustainability tool kit for developers (incl. Design Criteria for ESAs; site-scale EIN opportunities, etc). Develop an EIN initiative that assists businesses with finding other companies to add value to their "wastes". Revise SOE TOR to include new "look and feel" so that the information is more motivating for private sector / NGOs. Review internally available data to determine which indicators could be tracked with minimal effort Revise SOE TOR to include calculation of additional indicators. Work with Ec Dev to develop a few questions for BRE surveys that would support additional or increase the accuracy of indicator use. (Also could use Business License Renewals) 	<p>M</p> <p>M</p> <p>M</p> <p>H</p> <p>M</p> <p>Done</p> <p>H</p> <p>L</p>	<p>H</p> <p>M</p> <p>H</p> <p>L</p> <p>M</p> <p>H</p> <p>H</p>

Department / Division	Your Objectives	What EIN Can Do For You (Strategies)	How You Can Support EIN (Strategies)	Actions	Effort	Priority
			and awareness indicators that measure sustainability awareness in business (linked with BRE data)			
Policy Planning	Ag Viability Strategy: <ul style="list-style-type: none"> • Ensure that city-wide decisions consider the impacts on agriculture. • Meet water, drainage, sewerage, transportation needs of the ag sector • Ensure that dominant use of the ALR is viable and sustainable agriculture • Minimize and address potential conflicts along ag-urban interface • Encourage environmental management that doesn't impact negatively on normal farm practices • Raise the awareness of the general public to better understand the ag industry in their community • Support economic growth and diversification in the ag industry • Create an Agricultural Advisory Committee. 	<ul style="list-style-type: none"> • Attract additional partners, including academic institutions and seemingly unrelated industries such as high tech (automated control systems, irrigation, biotechnology) • Facilitate pilot projects (collaborative approach maximizes benefits, reduces costs, can leverage more funds, reduce risk, increase uptake) • Promote sustainable design, supply chain management, and by-product sharing to increase the efficiency and sustainability of existing agricultural production and processing operations • Develop niche production and processing opportunities. Bio-based products include processed foods; bio-fuels and bio-lubricants; bio-chemicals and bio-plastics; and nutraceuticals. • Develop value-added strategies for agricultural wastes. Bio-based wastes are often the easiest to return to the processing chain, making EIN, agriculture, and value-added agricultural production and processing a good partnership. • identify compatible (and sustainable and profitable) activities, as proposed in the Agricultural Edge Strategy. • Increase opportunities for integration of production, processing, marketing, and education initiatives. • Integrate city-wide management plan strategies: Rather than seeing these initiatives operate in 	<ul style="list-style-type: none"> • Engage Ag Advisory Committee in supporting EIN. • Build EIN into each of the City-Wide Management Strategies in the draft Ag Viability Strategy. • Include EIN in next revision of Ag Viability Strategy. 	<ul style="list-style-type: none"> • Prepare and deliver presentation on EIN to Ag Advisory Committee. • If response is positive, revisit EIN ideas in previous study. Establish AAC sub-committee to develop EIN implementation plan. • Make sure TOR for next Ag Viability Strategy includes requirements to examine ops for EIN (whether referred to explicitly or implicitly) 	<p style="text-align: center;">M</p> <p style="text-align: center;">H</p> <p style="text-align: center;">L</p>	<p style="text-align: center;">H</p> <p style="text-align: center;">H</p> <p style="text-align: center;">H</p>

Department / Division	Your Objectives	What EIN Can Do For You (Strategies)	How You Can Support EIN (Strategies)	Actions	Effort	Priority
	<p>West Cambie Plan To set out a preferred land use and road pattern for the long-term redevelopment of the Alexandra Area of the West Cambie area.</p>	<p>parallel, an EIN approach would highlight areas where these initiatives intersect (i.e., niche agricultural production, plus associated value-added processing adjacent to the ALR, plus co-operative work experiences for local youth, plus a green infrastructure pilot for managing stormwater).</p> <ul style="list-style-type: none"> Increase land use efficiency and sustainability of redevelopment 	<ul style="list-style-type: none"> Consider design to promote small-scale EIN opportunities for commercial development (shared loading; joint green purchasing / marketing) Use the redevelopment to showcase distributed, alternative infrastructure (e.g. geothermal under parks to heat adjacent buildings) that could be adaptable in other commercial and industrial areas. 	<ul style="list-style-type: none"> Complete a review of infrastructure needs and flag where green infrastructure may be encouraged, especially where infrastructure could meet multiple objectives and demonstrate EIN (waste = food, shared services and facilities, technologies that could be adapted by other operations) Scope pilot projects for the green infrastructure. Seek funding e.g., GMF. Implement. 	M-H	M
	<p>Light Industrial Management Policy (London-Princess & Trites):</p> <ul style="list-style-type: none"> Options to retain a specified amount of light industrial land in the Steveston Area for the long term. Highlights conflicts between residential and light industrial use. 	<ul style="list-style-type: none"> Partnership approach with systems, multi-objective, ecological thinking reduces land use conflict (e.g. as seen in Maplewood Project) 	<ul style="list-style-type: none"> Educate building owners and developers re: potential for EIN approach to retain light industrial activity and/or maximize the benefits of relocation. 	<ul style="list-style-type: none"> Develop education materials for building owners and for potential developers in the area. If possible, support education materials by completing a small study to scope specific potential EIN ops in the neighbourhood. 	M	H
	<p>Environmental Purchasing Guide:</p> <ul style="list-style-type: none"> To stimulate market development opportunities for environmentally preferred products. To support Richmond staff in procuring more environmentally friendly products. 	<ul style="list-style-type: none"> Could help local businesses adapt their processes to make products that meet Richmond's standards. 	<ul style="list-style-type: none"> Adapt guide so that it is relevant for private sector procurement. Support private sector green purchasing group (indirect support for EIN as an approach that could reduce waste, toxic materials consumption, in local businesses) 	<ul style="list-style-type: none"> Work with Ec Dev to develop question(s) for BRE Survey to gauge local business interest in supplying / procuring green products. If response is good, consider co-ordinating a green purchasing group as partnership between city and local businesses, or <ul style="list-style-type: none"> at least developing generic education materials to distribute to businesses e.g, 	H	M
				<ul style="list-style-type: none"> Work with Ec Dev to develop question(s) for BRE Survey to gauge local business interest in supplying / procuring green products. If response is good, consider co-ordinating a green purchasing group as partnership between city and local businesses, or <ul style="list-style-type: none"> at least developing generic education materials to distribute to businesses e.g, 	L	H
				<ul style="list-style-type: none"> If response is good, consider co-ordinating a green purchasing group as partnership between city and local businesses, or <ul style="list-style-type: none"> at least developing generic education materials to distribute to businesses e.g, 	M	L

Department / Division	Your Objectives	What EIN Can Do For You (Strategies)	How You Can Support EIN (Strategies)	Actions	Effort	Priority
Parks Recreation & Cultural Services						
Overall	Parks, Recreation and Cultural Services Master Plan (2002-03) <ul style="list-style-type: none"> To provide market, program, facilities, and financial profiles for each of the City's 15 planning areas. Supports acquisition plan (as outlined in DCC Parks Land Acquisition and Development 2005) 	<ul style="list-style-type: none"> Lack of green space, somewhere to go for a walk at lunch is a common complaint in industrial and business parks. Green spaces can also double as bike routes (think linear parks). EIN supports increased densification, smarter building massing, and ecological design which facilitates synergies and can help to increase economic activity while protecting greenspace. EIN approach would support multiple businesses jointly purchasing / managing a Privately Owned, Publicly Accessible Open Space Area (POPA) or naturalizing their lands (e.g. East Cambie, Gilmore, Fraser Lands, Shellmont) There may also be opportunities for community gardens in industrial and business parks (Burnside was exploring this). Partnerships between multiple businesses and NGO would support this. Recreation facilities and parks could be part of EIN e.g., geothermal fields under open space that provides heating to nearby buildings. These facilities can also demonstrate EIN e.g., waste heat recovery from ice arenas, used to heat nearby operations. Parks can partner with local businesses to purchase items such as biolubricants (EIN & green purchasing). 	<ul style="list-style-type: none"> Engage businesses in parks planning and acquisition and build awareness of EIN. 	<ul style="list-style-type: none"> Prepare education materials re: EIN, green space, stormwater management, trails in industrial and business parks. Post on website. Create initiative to engage local industrial land owners and businesses to work together to create more open space, trails, etc 	M L H	H H L
Recreation & Cultural Services	Trail Strategy <ul style="list-style-type: none"> To plan a comprehensive network of trails in the City (green corridors, 'blueways', linkages to key destinations, safe and easy 	<ul style="list-style-type: none"> Waterfront access key, but so is preserving waterfront industry. Maplewood project, especially advisory committee, stakeholder 	<ul style="list-style-type: none"> Engage businesses in parks planning and acquisition and build awareness of EIN. 	<ul style="list-style-type: none"> Prepare education materials re: EIN, green space, stormwater management, trails in industrial and business parks. 	M	H

Department / Division	Your Objectives	What EIN Can Do For You (Strategies)	How You Can Support EIN (Strategies)	Actions	Effort	Priority
	<p>circulation).</p> <ul style="list-style-type: none"> Continue to work with private development, transportation planning and engineering to ensure that the trail standards are applied when new construction occurs along a route. 	<p>engagement, and charrette, helped to identify several solutions meeting both objectives. Partnership approach could also help to secure funding.</p> <ul style="list-style-type: none"> Partnership approach helps to engage those that live AND work in Richmond. EIN supports more ecological stormwater management, which can help to protect landscape (greenways and trails very interconnected) 				
Recreation & Cultural Services	<p>Waterfront Amenity Strategy</p> <ul style="list-style-type: none"> To establish a vision for the City's waterfront land use that includes sustainable development and economic development. 	<ul style="list-style-type: none"> Reduces impact of businesses, making better interface with adjacent land use, which could facilitate preservation of strategic sites such as port and waterfront lands EIN supports ecological stormwater mgmt - protects landscape while enhancing recreation opportunity and allowing continued business activity. 	<ul style="list-style-type: none"> Engage businesses in parks planning and acquisition and build awareness of EIN. 	<ul style="list-style-type: none"> Prepare education materials re: EIN, green space, stormwater management, trails in industrial and business parks. 	M	H
Policy & Business Advisory Services; Corporate Programs & Olympic Business; Major Projects						
Corporate Programs	<p>Corporate Plan 2004-2007 & Corporate Plan 2004-2005</p> <ul style="list-style-type: none"> Community Livability and Sustainability is one of the cornerstones / themes, and departments are asked to build on the themes through new initiatives, process and work enhancements One recommendation is to Hold a Strategic Workshop Indicators of success include a healthy economy and environment. Continued use of strategic teams 	<ul style="list-style-type: none"> As discussed elsewhere in this document, EIN approach could help departments support sustainability, especially where business / industry / infrastructure are concerned. 	<ul style="list-style-type: none"> Use specific language encouraging EIN as an approach to achieve sustainability for programs, policies, etc that relate to business / industrial / infrastructure. Raise awareness of EIN across departments (would reduce load on Environmental Programs as only holder of EIN knowledge) 	<ul style="list-style-type: none"> Adopt EMS (with new EIN language added) Hold interdepartmental strategy session on sustainable business or some similar theme, where EIN could be highlighted. Make sure facilitation is such that interdepartmental info exchange happens. 	L H	H H
Economic Development	<p>Economic Development Strategic Plan</p> <ul style="list-style-type: none"> Create an environment that is supportive of economic development 	<ul style="list-style-type: none"> Reduce business operating costs, attract progressive companies, help niche opportunities emerge, reduce environmental impact Supports better land use, reduces infrastructure demand, improves business performance, and reduces environmental impact 	<p><u>FOR ALL OBJECTIVES</u></p> <ul style="list-style-type: none"> EDS could address green / sustainable ec dev, with implications for creating innovative, efficient business base Co-ordinate municipal support for EIN projects; actively promote EIN 	<ul style="list-style-type: none"> Develop language for TOR for new Ec Dev Strategy to explicitly include creating a more profitable and sustainable business community and encouraging EIN as means to achieve this. Also take EIN approach to id new ec dev niches e.g., green building 	L	H

Department / Division	Your Objectives	What EIN Can Do For You (Strategies)	How You Can Support EIN (Strategies)	Actions	Effort	Priority
	<ul style="list-style-type: none"> Encourage continued clustering of industrial firms 	<ul style="list-style-type: none"> Complements clustering by encouraging mutually beneficial business relationships and layers a systems, strategic approach that creates further cost-saving synergies 	<ul style="list-style-type: none"> Ensure sustainability is part of any cluster studies Create EIN info to circulate to existing clusters in Richmond 	<p>materials cluster?</p> <ul style="list-style-type: none"> Take leadership to approach other departments where this document indicates they should meet with Ec Dev With GIS, create list of sector related data accessible in-house (e.g., land use, revenues, employees, water consumption) <i>in progress</i> Compile and analyse GIS data (via maps and spreadsheets) Complete study compiling EIN best practices for these sectors Prepare educational material and disseminate (website, mail out, etc) to relevant private sector groups 	M	H
	<ul style="list-style-type: none"> Encourage more value-added agricultural activity (action includes targeted advertising and cooperation with Ag Canada, food processing businesses) 	<ul style="list-style-type: none"> Create industry-ag links and encourage more value-added business (e.g., Ottawa EIN & Biobased Industries) 	<ul style="list-style-type: none"> EDS analysis could look at existing ag & industry links e.g., food processing Economic Development Forum could have an ag-theme one year 	<ul style="list-style-type: none"> Work with Ag Advisory Committee to strengthen ag & other industry ties With GIS, create list of sector related data accessible in-house (e.g., land use, revenues, employees, water consumption) <i>in progress</i> 	L	H
	<ul style="list-style-type: none"> Support high tech and encourage partnerships between high tech business and research & education 	<ul style="list-style-type: none"> Foster collaborative partnerships to bring high tech to ALL sectors, strengthening existing business and encourage more tech business, and to build relationships with academic institutions 	<ul style="list-style-type: none"> Use Economic Development Forum to foster relationships 	<ul style="list-style-type: none"> Gather data to identify potential technology solutions for Richmond sectors (see BRE section) Plan economic development forum to match environmental & energy technology providers with local sectors 	M	H
	<ul style="list-style-type: none"> Maintain extensive infrastructure as advantage 	<ul style="list-style-type: none"> Supports DSM and collaboration which would reduce business and municipal cost for infrastructure 	<ul style="list-style-type: none"> Encourage Engineering & Public Works staff to consider EIN for infrastructure projects & provide links to related business stakeholders 	<ul style="list-style-type: none"> Develop education package as part of business location services re: green infrastructure Meet with E&PW, EP, and GVRD to secure buy-in for their support in principle for private green infrastructure projects e.g., backing GMF applications Assign a staff point person for green infrastructure (could be GVRD)? Refer any businesses interested in 	H	M
					M	H
					L	H
					L	M
					L	M

Department / Division	Your Objectives	What EIN Can Do For You (Strategies)	How You Can Support EIN (Strategies)	Actions	Effort	Priority
	<ul style="list-style-type: none"> Accommodate increased demand for business parks 	<ul style="list-style-type: none"> Support green buildings and design that would give competitive advantage. Support more efficient land use to accommodate business land use AND other uses like ALR 	<ul style="list-style-type: none"> Work with other relevant departments e.g., Development, to create incentives & outreach to encourage infill and more dense business development, as well as “green” greenfield developments Create education package for businesses documenting financial benefits of better land use planning 	<p>green infrastructure to point person.</p> <ul style="list-style-type: none"> Create education package as part of business location services to outline benefits of infill and how EIN approach can reduce developed footprint. Meet with staff from relevant departments to gauge buy-in for exploring incentives Develop TOR for study to explore incentives <ul style="list-style-type: none"> - case studies, industry focus groups, draft language, etc. 	M	H
	<ul style="list-style-type: none"> Encourage development Fraser Richmond Lands 	<ul style="list-style-type: none"> Increase value & profile from development 	<ul style="list-style-type: none"> Communicate with development team the benefits of EIN 	<ul style="list-style-type: none"> Get update on status of Fraser Richmond lands Arrange meeting with Fraser Port Authority and other depts to discuss how EIN can be encouraged 	L	M
	<ul style="list-style-type: none"> Support interdepartmental team approach 	<ul style="list-style-type: none"> Foster collaboration and multi-objective systems thinking 	<ul style="list-style-type: none"> Continue to liaise with other departments 	<ul style="list-style-type: none"> At a minimum, continue working with EP on initiatives relevant to both e.g., education & outreach, integrating EIN into BRE, etc. 	M	M
	<ul style="list-style-type: none"> Deliver an Economic Development Forum 	<ul style="list-style-type: none"> Multi-stakeholder approach could increase benefits of forum 	<ul style="list-style-type: none"> Use forum to specifically foster EIN, help businesses identify spontaneous EIN ops 	<ul style="list-style-type: none"> Create TOR for Ec Dev Forum that encourage EIN 	M	M
	<ul style="list-style-type: none"> Monitor performance 	<ul style="list-style-type: none"> Data collected for EIN projects can inform performance measurement 	<ul style="list-style-type: none"> Use performance measures to support EIN e.g., there are ## “green” businesses Work with GIS to identify and calculate related indicators Co-ordinate performance measurement with SOE and EMS 	<ul style="list-style-type: none"> TOR for BRE surveys should facilitate data collection to feed into performance measures (some of which could motivate EIN) Create a list of data available from GIS to support measures (<i>in progress</i>) Establish interdepartmental sustainability measures (implicitly includes EIN) group to co-ordinate data collection and use of indicators across departments 	L	H
	<ul style="list-style-type: none"> Build reliability of power supply 	<ul style="list-style-type: none"> Supports distributed, renewable / alt generation and co-ordinated peak load management which can reduce costs AND create new business opportunities Facilitate distributed, renewable / alternative generation. Foster 	<ul style="list-style-type: none"> Work with BC Hydro and GIS / IT to determine where energy-related EIN might be 	<ul style="list-style-type: none"> Encourage GIS to work with Hydro and Terasen (Ec Dev not really lead on this) to evaluate where efforts to manage energy should be directed 	M	H
					M	M

Department / Division	Your Objectives	What EIN Can Do For You (Strategies)	How You Can Support EIN (Strategies)	Actions	Effort	Priority
	<ul style="list-style-type: none"> Issue: job creation more linked to services than goods producing Issue: industrial land prices high 	<p>collaboration including co-ordinated peak load management.</p> <ul style="list-style-type: none"> Identify new service niches AND support goods producers by reducing costs, identifying new opportunities EIN can reduce spatial needs, promote infill, efficient land use, reduce operating costs to offset higher land prices. EIN could address issues of land availability / cost by encouraging more efficient development 	<ul style="list-style-type: none"> Use BRE survey responses to identify niche opportunities Encourage development industry (and major commercial and industrial property owners) to take EIN approach to find shared facilities, etc to reduce land use requirements 	<ul style="list-style-type: none"> Draft questions for BRE Survey Create education package for business owners, developers, site location specialists Disseminate information package (website, mail-out, Ec Dev Forum, etc) 	M	H
	<p>Economic Development Strategic Plan Implementation Program Status Update</p> <ul style="list-style-type: none"> Prepare and implement marketing plan with industry-specific advantages (esp. value-added ag, high tech, value-added fish) 	<ul style="list-style-type: none"> EIN can help to identify specific advantages e.g., for heavy water consuming sectors, the availability of X businesses with treated wastewater for sale 	<ul style="list-style-type: none"> Compile data needed to identify these types of advantages 	<ul style="list-style-type: none"> Work with GIS to create list of data available in-house to support this (in progress) Draft questions for BRE survey to collect supplemental info to support this 	M	M
	<ul style="list-style-type: none"> Host Economic Development Forum (Economic Advisory Task Force was formed instead) 	<ul style="list-style-type: none"> EIN approach could help businesses attending forum identify EIN opportunities (e.g., Ross Industrial Park Trade Show) 	<ul style="list-style-type: none"> Structure forum to maximize relationship-building and information exchange to lead to EIN Use forum to disseminate info about EIN 	<ul style="list-style-type: none"> Develop TOR for Ec Dev Forum 	M	M
	<ul style="list-style-type: none"> Create a larger supply of readily available industrial land Incorporate ec dev performance measures into City's Vibrancy Indicators <p>Business Retention & Expansion (BRE) Strategy:</p> <ul style="list-style-type: none"> Maintain an ongoing BRE program 	<ul style="list-style-type: none"> See above re: industrial land supply See above re: Monitor Performance 				
		<ul style="list-style-type: none"> Increase synergies between existing businesses, making it more likely they will stay and grow Supports a progressive, competitive, attractive business environment (improve industrial performance; better ""interface"" relations; increase industrial 'character) 	<ul style="list-style-type: none"> Existing BRE report and Chamber business survey contains good statistics / data re: Richmond businesses, their needs, opportunities → seek EIN opportunities / levers now BRE surveys could encourage EIN and sustainability BRE surveys can help get data needed to identify EIN 	<ul style="list-style-type: none"> Include EIN in TOR for BRE Surveys Incorporate EIN into TOR for overall BRE program Provide EIN training for Ec Dev staff Review GIS / IT data to see what data already available (in progress) Meet with Chamber re: structuring BRE Program with key role for Chamber and obtaining raw data 	L L M	H H H

Department / Division	Your Objectives	What EIN Can Do For You (Strategies)	How You Can Support EIN (Strategies)	Actions	Effort	Priority
	<ul style="list-style-type: none"> Ensure business land availability and value Preserve actual and effective ag land area 	<ul style="list-style-type: none"> Encourage infill, better land use, shared infrastructure and services to reduce cost of doing business Reduce business environmental impact and facilitate synergies that support better ag-ind interface 	<ul style="list-style-type: none"> opportunities (e.g., Delta – Tilbury) See BRE Program (Surveys could gather data on current / desired land use and infrastructure needs) Target ag & related businesses for early BRE Surveys Engage Ag Advisory Committee in BRE partnership 	<ul style="list-style-type: none"> from their survey See BRE Program 		
	<ul style="list-style-type: none"> Improve transit 	<ul style="list-style-type: none"> Facilitate collaboration to support better transit planning, more greenways, bike paths, car pooling 	<ul style="list-style-type: none"> See BRE Program (Surveys could gather data on current / desired transportation issues and needs) 	<ul style="list-style-type: none"> Get data from GIS / Business Licenses re: ag & related businesses Meet with Ag Advisory Committee rep to discuss cross-participation between BRE program and AAC Get data from GIS re: greenways, bike paths etc. in business areas. Tie with BRE Survey. Use results of GIS analysis and BRE Survey to craft a strategy to improve transit. Support with research such as recent articles proving bus parks near transit have lower vacancy 	M	H
	<ul style="list-style-type: none"> Involve established industries in community planning proves 	<ul style="list-style-type: none"> Fosters stakeholder engagement, builds relationships 	<ul style="list-style-type: none"> Build BRE Advisory / Partner Committee that includes external business reps AND internal department reps e.g., Transportation 	<ul style="list-style-type: none"> Develop list of potential members for BRE Advisory / Partner Committee with interest in sustainability 	L	H
	<ul style="list-style-type: none"> Request more reliable power services 	<ul style="list-style-type: none"> Supports distributed, renewable / alt generation and co-ordinated peak load management which can reduce costs AND create new business opportunities Facilitate distributed, renewable / alternative generation. Foster collaboration including co-ordinated peak load management. Data from EIN projects could help to calculate these and additional benchmarks (e.g., from Sustainable Industries draft indicators) 	<ul style="list-style-type: none"> Engage BC Hydro on BRE Advisory / Partner Committee 	<ul style="list-style-type: none"> Explore interest of these people / orgs in supporting BRE Project 	M	H
	<p>City of Richmond Economic Benchmark Report Provide information around attracting investment, generating employment, increasing the tax base, and enhancing quality of life.</p>		<ul style="list-style-type: none"> Information in report can inform EIN initiatives e.g, Richmond has one of the most diverse economies → diversity has been shown to support synergies, especially of by-products 	<ul style="list-style-type: none"> See Economic Development Strategy Monitor Performance 		

Appendix C

EIN Case Studies Best Practices Review

Eco-Industrial Networking (EIN) Best Practices Review

Policy-Related Tools and Strategies Supporting EIN

August 16, 2005

Prepared for: City of Richmond

Prepared by: Eco-Industrial Solutions, Ltd. (Vancouver)



Introduction

This document provides a brief overview of several North American EIN projects in which municipal policies and programs have played a role in supporting EIN. Particular attention was paid to the following types of policies and programs most common to municipalities:

- Official Community Plans (or equivalent)
- Zoning / Land Use Bylaws
- Design & Development Standards and Guidelines
- Economic Development Strategies
- Master Plans / Local Plans (or equivalent)

This document is not meant to be a comprehensive analysis of these policies and programs. This report provides detail related to five (5)

communities practising EIN: Halifax Regional Municipality; Hinton; Londonderry; Devens; Cape Charles. The reader is referred to attached documents and other references for further information, including websites for policy-related documents from communities practising EIN but not reviewed in detail here.

During the course of this research, we discovered that very little “meta”-analysis of EIN policy tools has been completed. It appears that further research is merited. The results of such a comprehensive study would likely be useful to Richmond as well as other communities in Greater Vancouver and across Canada.

Overview

The Town of Hinton is the location of the **Hinton Eco-Industrial Park**, which will be planned, designed, developed and operated to promote a profitable, competitive, progressive business environment. Features include a high profile location, innovative and efficient infrastructure systems, strong community support and leadership from the Town of Hinton. The EIP is designed to minimize operating costs and maximize business opportunities, and allows the Town of Hinton to support economic development and environmental protection.

The Town of Hinton has completed a **Conceptual Plan** for the EIP. The Conceptual Plan included the conceptual site plan, preliminary business plan and implementation strategy for development of the EIP. A more detailed business plan was recently finalized, describing the Town's business case for supporting the EIP. Target sectors, market issues and opportunities, site-specific factors, alternative development arrangements, and scenario / sensitivity analyses were also illustrated.

Hinton is now moving into the implementation phase, with detailed design planned for fall 2005 and construction commencing in 2006. In addition to the design work, Hinton is creating an innovative **revised policy framework** to better support green industrial development. The policy framework includes a **new zoning designation**, EIP. The EIP zone will be supported by **development guidelines** for the eco-industrial park. Some properties will also have restrictive covenants placed on them, largely related to preserving some of the site's ecological infrastructure. The Town

considered impacts on the project's marketability when deciding which objectives to meet via covenants, zoning, guidelines, or incentives. The town will also be making small amendments to its Municipal Development Plan (similar to BC's Official Community Plan). The Town also considers its tender documents part of its policy toolbox. The Town will be developing **innovative RFQ / RFPs** to select and retain integrated green infrastructure design services. Finally, the Town's own **subdivision plan** for the EIP will demonstrate to the private sector what the planning and design for an EIP might look like.

Parallel to the EIP planning, the Town has also drafted a new **Green Purchasing Policy**; a **Sustainable Building Policy**, which commits the town to reducing resource use in its operations and to using proven sustainable design best practices; and **Environmental Policy**, which includes demonstrating stewardship

Thoughts for Richmond

- Hinton's policy framework documents should be public by the end of the year. Although the regulatory requirements are slightly different in AB than BC, there will likely be language that can be adapted to Richmond.
- Hinton demonstrates that a municipality can determine the vision for an EIN project, and then enact policies as needed. This is opposite to the usual approach in BC, where sustainability policy frameworks are usually well developed prior to major projects being undertaken.

References / Attached Documents

See www.eip.hinton.ca for business plan. The RFQ should be issued within the next 4-6 weeks. The draft zoning and guideline documents should be public within the next 2 months.

Contact

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Overview

Halifax Regional Municipality (HRM) is home to **Burnside Industrial Park**, one of the largest industrial parks in Canada, with approximately 1,400 businesses. HRM is the main landowner. Burnside was not developed as an eco-industrial park, but businesses, HRM, and Dalhousie University have been working together to **retrofit eco-industrial principles** into the park.

These partners supported the creation of the **Eco-Efficiency Centre**, which has played an important role in greening Burnside businesses and establishing material and energy synergies. The Centre has full-time staff. By-product synergy has been supported by **provincial landfill bans**, forcing companies to find innovative solutions for solid waste e.g., palette cascade among Burnside businesses.

HRM has developed **Site Development and Building Standards** specific to Burnside Industrial Park. One objective is "...to create an attractive and efficient business environment through sound land use, planning, and environmental management standards". Potential purchasers and leasees must complete a Site Development Proposal that demonstrates adherence to these Standards. There are 38 clauses. The Standards do not directly promote sustainability or EIN, although the Standards do support green building and site design aspects of EIN indirectly. For example, the Site Development Design Standards "...underline a commitment to the enhancement of individual business investments with particular reference to landscaping and respect for the natural environment, including watercourses." The Standards do not promote green infrastructure, by-product synergy, or shared business services. The Standards include 30 **restrictive covenants** applicable to development on certain streets. Only one pertains to environment: "The grantee (Purchaser) covenants and agrees not to damage any lake within the Park...".

The draft **Regional Municipal Planning Strategy** (similar to the GVRD LRSP) proposes several policies generally supportive of EIN, such as commitments to water conservation to reduce wastewater infrastructure demand or to develop a Wind Energy Generation Master Plan. Under Business and Industrial Parks, the plan recommends more integrated land uses, noting that "Medium to high residential land uses can compliment the business park allowing easy access to employment for residents and reducing commuting costs to the individual and the municipality as a whole." Finally, via a **Business Parks Development Functional Plan**, HRM plans to outline infrastructure needs for Burnside, including more amenities, improved bus service and pedestrian transportation, and facilitating rail access for manufacturing areas.

Overall, there is still a disconnect between the efforts in Burnside and the policy framework in HRM. For example, while there is a significant preamble and vision re: sustainability, sustainability and industry or business are not discussed together. Nor is there any strategic support for using EIN in other business and industrial parks.

Thoughts for Richmond

- By raising general environmental awareness, EIN becomes more likely.
- The Eco-Efficiency Centre model is adaptable. Vancouver, DRS Earthwise (Delta), and Whistler are considering similar centres. More EIN emphasis is needed, as opposed to single company efficiency.
- The Site Development Standards demonstrate how a municipality can encourage certain types of development in industrial parks. The Standards could be adapted to more directly support sustainability.
- Much of the policies are equivalent to GVRD level. Richmond and the GVRD could work together to create policies that facilitate EIN.

References / Attachments:

- <http://eco-efficiency.management.dal.ca/>
- <http://www.halifax.ca>
- Ray Cote, Personal Communication, August 9, 2005
- HRM Regional Municipal Planning Strategy for Public Consultation (Working Draft April 26, 2005)
- Site Development & Building Standards Burnside Industrial Park

Contacts

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Port of Cape Charles, Virginia, USA

Overview

The Cape Charles Sustainable Technologies Industrial Park is a 155-acre brownfield site that formerly contained a municipal dump, dockside, rail yard site and the remains of abandoned industrial operations. The project includes the eco-industrial park, restored wetlands, a nature trail and environmental education facility and a tertiary sewage treatment system.

The eco-park was originally leased to the **Joint Industrial Development Authority (IDA)** who managed the park. Over time, the IDA board membership changed, and new Board members were not informed about eco-industrial parks, and were therefore not supportive. In 2004, the Park was sold to a private developer. Overall, the project is considered to be a mixed success. The project involved the successful remediation of a large brownfield, and succeeded in attracting much attention. At one point, there were reports of a \$7.5 million investment in a wind farm and turbine factory. By mid-2004, though, there was only one tenant.

The Town of Cape Charles created a **custom mixed use zoning designation** called Planned Development - Sustainable Technologies Industrial Park (PD-STIP). The PD-STIP covers permitted uses, which are extremely broad, lot, yard, height, and density requirements; and offers some parking, driveway, and buffer conditions. There are no explicit environmental or sustainability regulations, although the overall Zoning Ordinance contains some e.g., Wetlands Ordinance.

The park is in a **HUBzone, Foreign Trade Zone (FTZ)**, and a **Virginia Enterprise Zone**. The HUBzone program stimulates economic development in communities by providing federal government contracting preferences to small businesses in the zone. The FTZ offers businesses a host of options to facilitate exports. The Virginia Enterprise Zone offers three financial incentives: General Income Tax Credits; Real Property Improvement Tax Credit; and Job Grants.

In consultation with the public, the IDA developed **codes, covenants and restrictions** for the STIP, primarily focused on supporting environmental *technologies*, for prospective companies in the Park. As part of the application process, potential park occupants must achieve a satisfactory ranking on the CC&Rs sustainability matrix, which comprises over fifty environmental, social and economic sustainability criteria.

Thoughts for Richmond

- The IDA Board began with a multi-stakeholder board committed to the principles behind the EIP. Over time, members changed and this support was eroded. Richmond has already seen how support for EIN can drop if key staff depart. EIN should be embedded in corporate training, with periodic refreshers. This is a challenge for many communities. Groups like the GVRD and EIDC may be interested in partnering with Richmond to develop municipal staff EIN training.
- Although many countries in the world use export zones to facilitate exporting from industrial clusters, Canada has not taken this approach.
- The idea of a custom zoning designation to support EIN is transferable to Richmond. (see also Hinton)
- The Codes, Covenants & Restrictions are more applicable to municipally-owned industrial and business parks, which Richmond does not have.
- The checklist / matrix approach encourages businesses to at least consider EIN. A performance-based list could be tied to development permit applications, and would help to raise awareness in the development industry, as well as directly encourage EIN.
- Consideration of market acceptance is key. For example, Hinton will be implementing much more of its EIN objectives via guidelines, whereas a more progressive, urban jurisdiction like Vancouver can mandate things like LEED certification.

References / Attachments:

- <http://www.sustainablepark.com/>
- Handbook on Codes, Covenants, Conditions, and Restrictions for Eco-Industrial Parks, Cornell Center for the Environment
- Declaration of Covenants and Restrictions for the Port of Cape Charles Sustainable Technologies Industrial Park
- Adopted Zoning District Designation as an Amendment to the Accawmacke Plantation P.U.D. Port of Cape Charles

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Londonderry, New Hampshire, USA

Overview

The **Londonderry Eco-Park** is a **privately developed** eco-park comprising 100 acres. The Town of Londonderry, one of New Hampshire's fastest-growing communities, supports eco-industrial development to address the negative effects of rapid growth, and to preserve the town's agricultural heritage. The Londonderry Eco-Park falls under the Town's overall **Sustainable Londonderry initiative**, which includes efforts to clean up brownfield sites; support for an ecological industrial park; and increased recycling.

The Sustainable Londonderry Initiative includes the development of an **EMS**. The EMS is supported by an Environmental Policy, adopted by the Department of Public Works. The policy outlines roles and responsibilities, as well as legal requirements. The policy led to the establishment of targets and objectives for the EMS. The Londonderry EMS team recommends that existing initiatives be incorporated into the EMS process.

The Town's 2004 **Master Plan** references the Eco-Industrial Park as part of its **economic development objectives**. The Town worked with community groups to establish a vision for the development: "The Eco-Park recognizes as its primary function developing systems and processes which minimize the impact of industry and business on the environment, improve the economic performance of the member companies and strengthen the local economy. Through modeling the Park's industrial systems on natural ecosystems, decreased environmental impact will be realized." The Town then worked with the private developer to create the tools needed to ensure that vision was implemented. The Park has attracted AES, a power company that has developed a 720 MW combined cycle natural gas power plant for the site. The plant uses treated

wastewater pumped from the City of Manchester's Waste Water Treatment Facility. In order to meet the Park's environmental standards, which are overseen by a **citizen committee**, the company has revolutionized environmental design of power plants.

The Town and the EIP Advisory Board made a conscious decision to use **covenants** as an enforcement tool for assuring that the park is developed as an ecological industrial park. A **municipal policy** called "Sustainable Londonderry" supported their efforts. The **use of existing tools and existing zoning** was designed to make the park easily replicable for use as a model. The covenants included **performance requirements** for EIP tenants, such as: development of an Environmental Management System, resource use tracking, setting environmental performance goals, third party ecological audits, a commitment to seek synergies, and progress reports to the Park Association (a self management board to be composed of park tenants, the developer, town, citizen and environmental representatives). Other strategies included **purchasing agricultural development rights** to ensure the properties remain in agricultural use; and establishment of a **Green Design Fund** (earmarked from a portion of land development permitting fees) to provide incoming companies with access to an ecological design team's services.

Thoughts for Richmond:

- Londonderry is one of the only examples of a municipal government clearly influencing private development to become eco-industrial. Londonderry Eco-Park is the most successful EIP in the U.S.
- Londonderry's eco-industrial park is an integral part of Londonderry's overall sustainability efforts. It runs through economic development, public works, and planning.

References / Attachments:

- http://www.londonderry.org/page.asp?Page_Id=525
- Sustainable Development with a Local Focus: Sustainable Londonderry. Proceedings of the 1998 National Planning Conference.
- EIN & Planning: Londonderry & Devens. 2004 Eco-Industrial Networking Roundtable
- Best Practices Guide: Application of ISO 14000 Environmental Management Systems (EMS) for Municipalities US Agency for International Development.

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Devens, Massachusetts, USA

Overview

Sustainable Devens began with the need to redevelop a former air force base. Devens comprises 4,400 acres with proposed mixed use development (industrial & residential); protection and enhancement of ecological resources (1,300 acres open space); and 2 million ft² of building space available for reuse. More than 75 businesses and other organizations are now operating at Devens, representing business and industry, government, educational institutions, recreational developments, and residential communities.

A design charrette was conducted, during which all teams agreed on protecting the aquifer at Devens, cleaning up the site, implementing sustainable agriculture, and implementing a comprehensive recycling strategy. This work culminated in the **Devens Reuse Plan** (1994) which created the "**Devens Enterprise Zone**", which encompasses the entire site. Goals of this plan included: a diversity of uses, articulation of the interdependence of economic development and environmental protection, and a balance of local, regional, and state interests. This broad, holistic perspective closely matched previously discussed definitions of sustainability. The **Devens By-Laws** build upon the sustainability goals and objectives set forth in the Reuse Plan. Principles of sustainability were woven into various aspects of the by-laws: **zoning**, density, dimensional requirements, floodplain, water resource, historic district, signage, and wetland protection provisions. For example, the **Environmental Business Zoning District** was created with language that specifically supported eco-industrial development (e.g. ordinance calls out and encourages by-product or process exchanges). The **Devens Enterprise Commission** was chartered by the State and given the mandate to oversee implementation of the plan and bylaws. The DEC has 6 directors from the three local towns and 6 directors appointed by the State.

Devens **Industrial Performance Standards** (part of its **Rules & Regulations**) include air quality, noise and vibration, wetlands protection, earth removal, stormwater management, water resource protection. Water harvesting is encouraged under stormwater management. There is also a clause for Innovative and Planned Use Development: "The Devens By-Laws (Article III, Section F.) require the Commission adopt Regulations that encourage the use of 'innovative development strategies, including, but not limited to, clustered development, condominium development, and planned unit development methods.' "

The **EcoStar™ Program**, launched in January 2005, was created to publicly recognize Devens businesses for environmentally sound practices. Businesses must reach 15 environmental standards in order to become an EcoStar achiever. The Commission is also planning to complete a **Solid Waste Master Plan** by end of 2005. The Plan will examine the provision of collective waste disposal, *by-product exchange facilitation*, and reuse/recycling services to all businesses and residents of Devens. Devens has also established **sustainability indicators**, some of which are impacted by EIN e.g., renewable energy use or solid waste recovery.

Thoughts for Richmond:

- Although the Commission isn't technically a municipal government, for all intents and purposes, it functions as one. Therefore, the tools and programs developed here could be adapted to Richmond, especially the Environmental Business District zoning.
- Devens is inspirational with respect to the scale at which the Commission is tackling sustainability, including EIN. The "big picture" approach makes it more likely that synergies between residential, agricultural, and industrial activity will be identified.
- An EcoStar-type program could be supported by Richmond.

References / Attachments:

- Sustainable Devens: <http://www.devensec.com/sustain.html>
- *EIN & Planning: Londonderry & Devens, 2004 Eco-Industrial Networking Roundtable, District of North Vancouver, BC. Sept 17-18, 2004.*
- Devens Bylaws - <http://www.devensec.com/bylaws/bylawstoc.html>
- Devens Rules & Regulations: <http://www.devensec.com/rules-regs/decregstoc.html>
- Devens Sustainability Indicators Table

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APPENDIX D
EIN Case Study Examples by Sustainability Objective

Sustainability Objective (for Business / Industrial Activity in Communities)													
Types of Policy / Program	Green Infrastructure (Distributed, efficient, renewable, flexible, adaptable, multi-objective, shared)						Integrated and Ecological Land Use	Green Operations					
	General	Energy	Transportation & Logistics	Water	Wastewater	Stormwater		Resource Cycling (By-Product Synergy)	Products & Processes (Manufacture)	Training	Procurement,	Economic Development	
	Examples →	Businesses jointly purchase green energy certificates	Businesses co-ordinate shipping and receiving to reduce truck traffic.	Businesses share costs of water audits. Co-ordinate purchase of low-flow fixtures.	Treated wastewater from several businesses displaces potable water at another business	One constructed wetland collects sw from all businesses in a small industrial area. One of these businesses periodically uses the water for truck washing	The developers of a new industrial park find a way to protect a sensitive area AND meet their \$ objectives	Instead of sending waste to landfill, businesses find other businesses who can use this material as a feedstock.	An industrial park institutes a voluntary ban on toxic solvents, and members get a discount on water-based solvent purchases	Businesses reduce costs by co-ordinating their training needs	The municipal government and several large businesses jointly purchase biodiesel. Their demand attracts a producer to the community.	Municipality's economic development officer is able to attract progressive businesses by touting an eco-industrial park in town	
Regulatory Tools	Regulations (Bylaws, permits, bans, etc)	Burnside – HRM's Site Development & Bldg Standards specific to Burnside. Support green bldg and site design aspects of EIN. Hinton – New industrial zoning designation (EIP) Hinton – some amendments to Municipal Dev. Plan (equiv to BC's OCP) Cape Charles – created Planned Dev – Sustainable Technologies Industrial Park (PD-STIP) zone.	Hinton – Dev Guidelines for new EIP zone – consider shared energy / heating / cooling systems; onsite generation from renewable sources, etc	Devens – Zoning bylaw – specific language for shared parking Hinton – Dev Guidelines for new EIP zone – accommodate range of transport modes; connectivity to trail system; permeable surfaces, etc.	Devens – industrial performance stds include encouragement of water harvesting Hinton – Dev Guidelines for new EIP zone – integrate design of water, wwt, and storm water mgmt throughout parcels.	Hinton – Land Use Bylaw requires water and ww mgmt plan. Hinton – Dev Guidelines for new EIP zone – integrate design of water, wwt, and storm water mgmt throughout parcels. Cape Charles – overall zoning ordinance includes regulations for Wetlands.	Devens – industrial development stds include requirements for SW mgmt Hinton – Dev Guidelines for new EIP zone – integrate design of water, wwt, and storm water mgmt throughout parcels.	Devens – industrial development stds' clause for Innovative Planned Use Development.	Burnside – provincial landfill bans force companies to find innovative solid waste solutions (e.g. palette cascade) Hinton – Dev Guidelines for new EIP zone – consider ww cascading; district energy system.			Hinton – Dev Guidelines for new EIP zone – maximize energy efficiency; consideration of alternate energy sources, non-potable water for appropriate uses, etc.	Hinton – new industrial zone (EIP) based on industrial profiling, targeting value-added wood and related sectors (discretionary uses).

Sustainability Objective (for Business / Industrial Activity in Communities)													
Types of Policy / Program	Green Infrastructure (Distributed, efficient, renewable, flexible, adaptable, multi-objective, shared)							Integrated and Ecological Land Use	Green Operations				
	General	Energy	Transportation & Logistics	Water	Wastewater	Stormwater	Resource Cycling (By-Product Synergy)		Products & Processes (Manufacture)	Training	Procurement,	Economic Development	
Plans & Strategies	<p>Hinton – revised policy framework to better support green industrial development.</p> <p>Londonderry – Eco-Park is park of Town’s overall Municipal Policy: <i>Sustainable Londonderry</i> incl brownfield cleanups and increased recycling.</p>	<p>Burnside – Regional Municipal Planning Strategy: commitment to develop a Wind Energy Generation Master Plan.</p>	<p>Burnside – Regional Municipal Planning Strategy: recommends more integrated land use (e.g. residential closer to business park), which supports reduced commuting costs.</p> <p>Burnside – Business Parks Development Functional Plan: outlines infrastructure needs for Burnside – improved bus & pedestrian transportation; facilitating rail access.</p>	<p>Burnside – Regional Municipal Planning Strategy: commitments to water conservation.</p>	<p>Burnside – Regional Municipal Planning Strategy: commitments to water conservation (reduce ww infrastructure demand).</p>		<p>Burnside – Regional Municipal Planning Strategy: recommends more integrated land uses (‘residential uses can compliment business park’).</p> <p>Hinton – Sustainable Building Policy; Environmental Policy.</p>		<p>Londonderry – Sust. Lon. Initiative includes development of EMS, which is supported by the Dept of Public Works’ Environmental Policy.</p> <p>Hinton – Sustainable Building Policy</p>		<p>Hinton – Green purchasing policy</p>	<p>Cape Charles – located in <i>HUB Zone</i> (provides federal gov contracting preferences to small businesses); <i>Foreign Trade Zone</i> (facilitates exporting); <i>Virginia Enterprise Zone</i> (offers financial incentives e.g. tax credits & job grants).</p> <p>Londonderry – Town’s 2004 Master Plan references the Eco-Park as part of its economic development objectives.</p>	

Sustainability Objective (for Business / Industrial Activity in Communities)												
Types of Policy / Program	Green Infrastructure (Distributed, efficient, renewable, flexible, adaptable, multi-objective, shared)						Integrated and Ecological Land Use	Green Operations				
	General	Energy	Transportation & Logistics	Water	Wastewater	Stormwater		Resource Cycling (By-Product Synergy)	Products & Processes (Manufacture)	Training	Procurement,	Economic Development
Contracts (Servicing agreements, covenants)	Burnside – Site Dev & Bldg Stds include 30 restrictive covenants for certain streets within the park.	Cape Charles – Covenants for occupant buildings & site to meet environmental criteria (mostly LEED)	Cape Charles – Covenants for occupants to meet sustainability criteria – points for % of employees who commute with public transit	Cape Charles – Covenants for occupant buildings & site to meet environmental criteria (mostly LEED)	Cape Charles – Covenants for occupant buildings & site to meet environmental criteria (mostly LEED)	Cape Charles – Covenants for occupant buildings & site to meet environmental criteria (mostly LEED)	Cape Charles – Covenants for occupant buildings & site to meet environmental criteria (mostly LEED)	Cape Charles – Covenants for occupants to meet sustainability criteria – must keep inventory of wastes, points for % byproducts reused Londonderry – covenants included performance requirements such as a commitment to seek synergies.	Cape Charles – Covenants for occupants to meet sustainability criteria – points for ratio of un-recyclable to recyclable wastes generated Londonderry – covenants included performance requirements such as development of EMS, resource tracking, 3 rd party ecological audits, progress reports.			

	Green Infrastructure (Distributed, efficient, renewable, flexible, adaptable, multi-objective, shared)							Green Operations				
<u>Types of Policy Tool</u>	General	Energy	Transportation & Logistics	Water	Wastewater	Stormwater	Integrated and Ecological Land Use	Resource Cycling (By-Product Synergy)	Products & Processes (Manufacture)	Training	Procurement	Economic Development
<u>User Fees</u> (DCCs, tipping fees, parking meters, etc)	Cape Charles – reductions in rent for occupants who exceed minimum sustainability requirements	Cape Charles (see General)	Cape Charles (see General)	Cape Charles (see General)	Cape Charles (see General)	Cape Charles (see General)	Cape Charles (see General)	Cape Charles (see General)	Cape Charles (see General)			
<u>Procurement & Investment</u>	Hinton – Developing innovative RFQ / RFPs to select and retain integrated green infrastructure design services. Burnside – Eco-efficiency Business Assistance Program Londonderry – established Green Design Fund – a port of land development permitting fees to give incoming companies access to green design team's services.	Hinton (see General)	Hinton (see General)	Hinton (see General)	Hinton (see General)	Hinton (see General)	Hinton (see General)					Hinton – Developing innovative RFQ / RFPs to select and retain sales & marketing services (proponent must have some 'green marketing' experience) Londonderry – purchase of agricultural development rights to ensure some properties remain in ag use.
<u>Partnerships & Demonstration Projects</u>	Cape Charles – Created the Joint Industrial Development Authority to manage the industrial park Hinton – Developing an EIP with support from Green Municipal Funds					Burnside – Engineered Wetland – graduate student research projects.						Cape Charles – Created the Joint Industrial Development Authority to manage the industrial park

		Green Infrastructure (Distributed, efficient, renewable, flexible, adaptable, multi-objective, shared)						Integrated and Ecological Land Use	Green Operations				
<u>Types of Policy Tool</u>	General	Energy	Transportation & Logistics	Water	Wastewater	Stormwater	Resource Cycling (By-Product Synergy)		Products & Processes (Manufacture)	Training	Procurement,	Economic Development	
Informational Tools	<u>Stakeholder Engagement</u> (Consultations, workshops, charettes)	Hinton – conceptual & business plan based on industrial & community profiling (focus groups) and community open house feedback.	Hinton (see General)	Hinton (see General)	Hinton (see General)	Hinton (see General)	Hinton (see General)	Hinton (see General)	Hinton (see General)	Hinton (see General)	Hinton (see General)	Hinton (see General)	Cape Charles – codes, covenants, and restrictions developed with public consultation – primarily focused on supporting environmental technologies companies in the park.
	<u>Public Education & Informational Materials</u>	Hinton – Hinton EIP website (www.eip.hinton.ca) –educational / interpretive signage as part of EIP trail system Burnside – Eco-efficiency Centre – Eco-business Program raises awareness of waste reduction & resource conservation.	Hinton (see General)	Hinton (see General)	Hinton (see General)	Hinton (see General)	Hinton (see General)	Hinton (see General)	Hinton (see General)	Hinton (see General)	Burnside – Eco-efficiency Centre – Eco-business Program – includes eco-audit.	Hinton (see General)	Hinton – selected marketing / sales person will develop marketing materials (brochures, pamphlets, etc).
	<u>Awards/ Recognition</u>	Devens – EcoStar Program – Publicly recognizes businesses for environmentally sound practices. Burnside – Eco-business program ‘success stories’ published online, & Annual Environmental Excellence in Business Awards Breakfast.	Devens- EcoStar Program. Firms must meet 15 of 25 environmental standards – energy efficiency included	Devens- EcoStar Program. Firms must meet 15 of 25 environmental standards – transportation included	Devens- EcoStar Program. Firms must meet 15 of 25 environmental standards – water conservation included		Devens- EcoStar Program. Firms must meet 15 of 25 environmental standards – ecological landscaping included	Devens- EcoStar Program. Firms must meet 15 of 25 environmental standards – ecological landscaping included	Devens- EcoStar Program. Firms must meet 15 of 25 environmental standards – materials reuse included	Devens- EcoStar Program. Firms must meet 15 of 25 environmental standards – product design & packaging included Burnside – Environmental Supply Chain Mgmt Pilot Project	Devens- EcoStar Program. Firms must meet 15 of 25 environmental standards – employee training included	Devens- EcoStar Program. Firms must meet 15 of 25 environmental standards –	

<u>Research & Feasibility Analysis</u>	Hinton – pre-feasibility analysis of several development & design options (e.g. energy, ww, storm water mgmt systems), tenant identification, etc.	Hinton (see General)	Hinton (see General)	Hinton (see General)	Burnside – Engineered Wetland – graduate student research projects.	Hinton (see General)	Hinton (see General)	Hinton (see General)	Hinton (see General)	Hinton (see General)	Hinton (see General)	Hinton – conceptual planning included detailed market assessments, resulting in EIP targeting the value-added wood sector.
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