

Brownfield Redevelopment Working Group

**ALBERTA BROWNFIELD REDEVELOPMENT
PRACTICAL APPROACHES TO
ACHIEVE PRODUCTIVE
COMMUNITY USE**

**Recommendations to the
Minister of Environment and
Water and the Minister of
Municipal Affairs,
Government of Alberta**

May 2011-April 2012

Brownfield Redevelopment Working Group

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PRACTICAL APPROACHES TO ACHIEVE PRODUCTIVE COMMUNITY USE

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1 Introduction

Early in 2011 Alberta Environment (now Alberta Environment and Water - AEW), Alberta Municipal Affairs (AMA) and the Alberta Urban Municipalities Association (AUMA) agreed to explore practical options to encourage brownfield redevelopment throughout Alberta. Terms of Reference were developed with the assistance of the Cities of Edmonton and Calgary and a Working Group of stakeholder representatives was established in May 2011 [Attachment A *Working Group Membership and Process*].

A brownfield site is defined as “an abandoned, vacant, derelict or underutilized property where past actions have resulted in actual or perceived contamination and where there is an active potential for productive community use including reuse and full redevelopment.”

The Working Group analyzed information from Alberta and other jurisdictions, identified issues, created and evaluated options to prepare recommendations and advice for the Ministers of Environment and Water, and Municipal Affairs.

The Working Group goal was “*To facilitate the redevelopment of brownfield sites in Alberta to a productive community use*”. The Working Group objective was stated as:

The recommendations put forward by the Brownfield Redevelopment Working Group will identify a number of tools which could include legislative and regulatory changes, program and policy development and financial support. Because each individual brownfield site will have a unique combination of challenges and barriers to its redevelopment, the recommended tools will be designed to be applied individually, or in combination. This approach provides flexible, stackable and integrated options to enable stakeholders to utilize the tool, or suite of tools, that will work best to facilitate brownfield redevelopment throughout Alberta.

The Working Group had tremendous support from all stakeholder groups, reflecting the partnership approach that is essential to successful brownfield redevelopment. The Working Group has benefited from the extensive work that has been done by stakeholders, other jurisdictions and researchers.

2 Why Brownfield Redevelopment?

Communities across our province are looking for ways to adapt to economic and cultural changes and create more vibrant social and economic hubs for our municipalities. In recent decades, development has expanded into suburban areas, affecting the vibrancy of downtown districts and mature neighbourhoods in large and small municipalities. It is therefore becoming increasingly important for municipal planning to incorporate use of existing infrastructure through adaptation, renovation and redevelopment of existing buildings and properties for new activities. As communities seek to adaptively reuse properties in developed areas, the issue of contamination from previous activities can arise. Properties where real or perceived environmental contamination hinders redevelopment goals are generally called “brownfields”.

The redevelopment of brownfield sites is a key to sustainability and the continued prosperity of Alberta’s municipalities. A commitment to the redevelopment of underutilized properties in the inner core or mature areas can lead to revitalization of these areas, improved walkability of neighbourhoods and vibrant community growth, all of which are required to meet long term economic, social and environmental sustainability goals for our communities. Making mature areas more livable and desirable will in turn reduce growth pressures in greenfield areas.

2.1 Where are Brownfields?

People often think of contaminated properties as large facilities in big cities or large facilities associated with the oil and gas industry in Alberta. Most brownfield sites, however, are small properties such as former gas stations, repair shops, and dry cleaners often located in urban centers or the downtown core of smaller municipalities. Sites are often in high profile locations along Main Street or in neighbourhoods identified by municipalities as priority redevelopment areas. In smaller communities the impact of these sites can be disproportionately large.

2.2 Brownfields Impact Community Vibrancy

Brownfields often pose a real obstacle to economic development in small and large municipalities alike. The impacts of brownfields extend beyond the boundaries of the specific property to affect the surrounding community and the environment. Left in their current state, these properties can:

- Pose potential risks to human health and the environment
- Become eyesores
- Limit economic growth and development for the entire neighbourhood
- Reduce employment opportunities and tax revenue for the site and surrounding properties
- Reduce surrounding property values
- Contribute to neighbourhood crime

2.3 Community Revitalization through Brownfield Redevelopment

The cleanup and redevelopment of a brownfield site can stimulate a community's economy, provide an opportunity for habitat restoration, and create public space. It can set the stage for business development and address community needs. Short term economic benefits from brownfield redevelopment consist of the immediate capital spending for cleanup activities, and infrastructure development. While this initial investment generates tax revenues, creates jobs, and results in indirect economic spin-offs within the community, it is the long term benefits that are more important to community revitalization. A brownfield redevelopment project can bring in higher property values, long-term tax revenues, and indirect spending stimulated by a revitalized property. This is further sustained by permanent job creation on the restored properties.

The National Round Table on the Environment and the Economy report "Cleaning up the Past, Building the Future (2003)" cited one analysis which concluded:

"...that Canada's brownfield redevelopment cluster has the *highest output multiplier of any sector in the economy*. That is, funds dedicated to brownfield redevelopment would have a larger multiplier (or stimulation) effect on the Canadian economy than would investment in any other sector."

When we reviewed brownfield initiatives from other jurisdictions such as Washington, Oregon, British Columbia and Ontario, the Working Group found many examples that support this statement.

We must still ask questions such as what health and safety risks are present now or in the future, who will be liable for any consequent damages, and how long in the future will liability continue? The working group sees maintaining these questions going forward but they need to be placed into a context that also considers the social, economic and environmental benefits of brownfield redevelopment.

Properly done, the benefits to brownfield redevelopment can be substantial, outweighing the risks. Benefits include:

Economic

- Converts vacant land to a commercial, industrial or residential purpose
- Increases taxation from land use and commercial activity
- Improves values of other properties in the community
- Creates economic vibrancy in the area
- Utilize existing infrastructure rather than requiring new installations

Social

- Puts underutilized land into productive use
- Creates vibrant urban cores and safer communities
- Improves visual impacts
- Leads to the creation and retention of employment

Environmental

- Spurs active management and remediation that will lessen risk to human health and the urban ecology
- Raises awareness of the need to prevent future environmental damage
- Minimizes urban sprawl by intensifying development in mature neighbourhoods
- Reduces Green House Gas (GHG) emissions by reducing commute distances
- Minimizes requirement for greenfield development.

2.4 A New Policy for a New Generation

2.4.1 Early Policy—Focus on Pollution Prevention, Spill Cleanup and Liability

Over the years there has been a tremendous increase in awareness and concern by Albertans about the environment, translating into new demands on government and industry to prevent environmental damage and to take action on releases that result in contamination and potential brownfield sites. Early policy for brownfields focused on spill prevention, cleanup and the allocation of responsibility associated with spills. Alberta's **Environmental Protection and Enhancement Act** and underground petroleum storage tank management regulations under the **Alberta Fire Code** are examples of this policy (petroleum storage tanks have been associated with a large percentage of existing brownfield sites). The policy has had success in minimizing impacts of new activities on the environment.

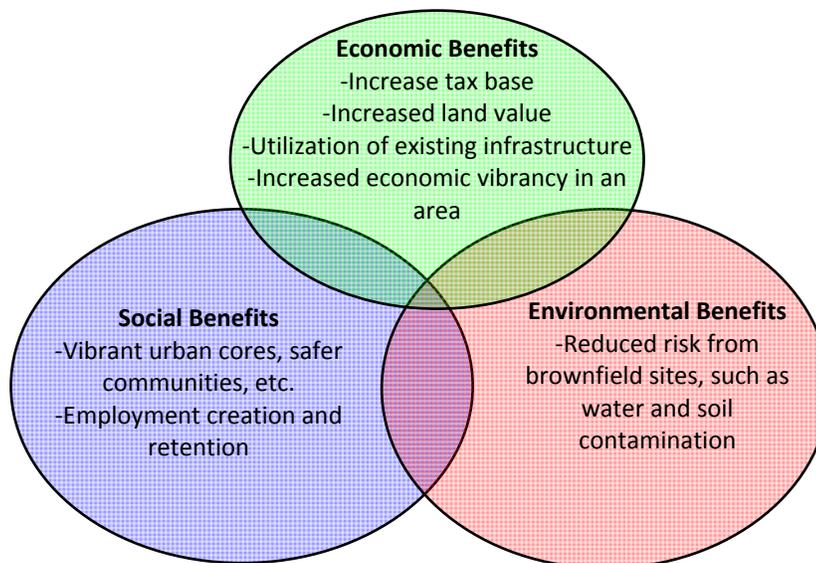
For example, in the 1980s, the continued use of leaky underground storage tank systems was identified as an activity that caused extensive damage. In 1987 the Canadian Council of Ministers of the Environment (CCME) unanimously agreed to adopt the Environmental Code of Practice for Underground Storage Tank Systems Containing Petroleum Products. In Alberta this translated into Alberta M.U.S.T. (Management of Underground Storage Tanks) program. The government created a database of existing storage tanks, and worked with industry and regulators to formulate recommendations for changes to Alberta Fire Code tank regulations and establish guidance for cleanup of previous releases. By 1991, Alberta had new guidance on the cleanup standard for underground storage tank facilities and by 1992 had adopted new standards in the Alberta Fire Code to increase the prevention of leaks and spills from petroleum storage tanks.

While this early policy helped to decrease new incidents causing environmental damage and possibly brownfield sites – particularly from petroleum storage tanks – it also has identified properties that were associated with industry as having the potential for having responsibility associated with environmental damage, and development on these sites has been inhibited.

2.4.2 New Policy for Brownfields - Focus on the Triple Bottom Line

While a comprehensive policy must still address spill prevention and cleanup and allocation of responsibility associated with spills, in order to address brownfields we must go beyond these policies. If we wish to see better use of historic brownfield sites, we need to also address the resulting uncertainty over responsibilities for the real estate and development markets and understand how these issues can stigmatize a brownfield site and prevent redevelopment.

To achieve this goal, we need to move public policy towards a more wholistic “triple bottom line” approach that integrates the environmental, social and economic benefits of a project as shown in Figure 1 (from Urban Systems, 2011) below.



The key to successfully transforming a brownfield property into an asset for the owner (private or public sector) as well as the community is the ability to develop an economic strategy for the property that creates a short-term and long-term value gain that more than offsets the liability. Successfully integrating the triple bottom line of environmental restoration, economic development, and social benefits leverages the investment of cleanup dollars and is in itself an economic development strategy.

In order to move towards this approach there needs to be an added emphasis on community development in brownfield redevelopment projects. This will involve building partnerships with provincial and local governments, nongovernmental site owners and other organizations that have an interest in land and development, community groups, educational institutions, and concerned citizens. These collaborations are necessary to promote development of public open

space, ensure historic and cultural preservation, enhance learning opportunities, and develop economic and land-use opportunities that align with the values of the community.

2.4.3 What are the Barriers to Brownfield Development Today

The two primary challenges to the cleanup and redevelopment of brownfield properties are liability concerns and cost.

In many cases uncertainty over liability has disproportionately increased the negative market perception of a brownfield property to the point that the economics of remediation and sale are not enough to outweigh the unknown of the extent of potential future liability. The National Round Table on the Environment and the Economy report “Cleaning up the Past, Building the Future (2003)” indicates within Strategic Direction #2:

“Uncertainty over liability affects every participant in brownfield redevelopment, from current owners and developers, to lenders, insurers and municipal governments. Until all governments recognize and address this challenge in a coordinated and fair manner, liability concerns will be enough to stall progress on too many of the country’s brownfield sites.”

Without some quantification of the current liability and certainty regarding future regulatory liability it is not possible to assess the financial feasibility of a project. The unknown risks of liability often create anxiety in current owners, potential purchasers or developers and lenders thereby limiting future potential for development.

In practice, whether or not sites are cleaned and reused usually comes down to financial feasibility—whether the potential revenues are greater than costs. This is particularly challenging with small brownfield sites, such as former gas stations or drycleaners, with limited development potential. Furthermore, due to its capital intensity, most real estate development is financed. Liability uncertainty can inhibit a lenders willingness to take the property as security or can only make funds available at high interest rates. Often, these situations will require some form of incentive to spur development. Specifically, brownfield redevelopment in Alberta can be limited by:

- Uncertainty with respect to current and future liability and level of risk
- Lack of clarity around the application of risk management (i.e. exposure control) and the ultimate acceptance of risk management plans of various stakeholders
- Inability to transfer liability to another party upon sale of a brownfield site
- Inability to terminate liability after remediating a brownfield site
- Regulations that do not reflect the brownfield complexities
- Lack of economic incentives
- Limited access to capital to fund redevelopment
- Wide range of site conditions and actions required to achieve redevelopment
- Lack of education and knowledge on how to proceed

2.4.4 How Can Renewed Public Policy Help?

The Working Group recognized that a practical approach to brownfield redevelopment that focuses on making positive, real change is required to address these concerns. This practical approach needs to ensure that brownfield redevelopment:

- Does not put human health and safety at risk
- Minimizes adverse effect to the environment
- Is economical
- Is not too time or resource consuming
- Makes a difference to the community, meets the needs of a community
- Clearly identifies how future risks can be managed
- Clearly terminates regulatory liability for the responsible party for an entire property when it is remediated to current regulatory standards

In this regard there are a number of actions that can be taken to tip the scale towards redevelopment while maintaining environmental outcomes. These include:

- Create more certainty regarding regulatory liability and risk. Concern about the risk of future regulatory liability is one of the major reasons why brownfield sites sit idle.
- Coordinate the provincial regulatory process, municipal planning approvals and the overall land development process including financing and land valuation. It is important to understand the links between the provincial regulatory process that focuses on contaminated sites management and the municipal planning approvals process which assesses suitability of land for its intended use. Understanding how the real estate market values property and how that value can decrease in response to contamination concerns even on remediated properties because of a perception of unknown future liability is important. Coordinating the regulatory approval process with financing needs can appropriately address this concern and mitigate its impact.
- Provide access to resources to conduct assessment of environmental contamination. This can decrease uncertainty with respect to overall costs of remediation or risk management on sites that do not currently have sufficient environmental information.
- Build capacity within the public and private sector to understand the unique nature of brownfields.
- Ensure that the social impact is factored into the equation. Local governments and community organizations are more often involved because brownfield redevelopment projects do not have great economic fundamentals but they are necessary for community revitalization. In these cases public partners are needed to move brownfield redevelopment forward. It is important for public regulators and funders to understand that the return on the investment accrues to the broader economy in the form of increased economic activity and improved social impact, far outweighing the commitment of public resources.

In keeping with these principles, the working group has developed a number of recommendations to aid in the development of a brownfield policy for Alberta. The Working Group's recommendations:

- Ensure a coordinated, efficient, and effective process
- Provide a flexible set of stackable tools to facilitate redevelopment including funding, specialized certificates and approvals, flexible taxation, and
- Broaden knowledge and capacity through education and communication.

3 Recommendation Framework

Recommendations are organized into four clusters: **liability closure, financial incentives, coordination and education, and risk management and registration.**

The Working Group envisions the acceptance of all recommendations as the most ideal way to approach the brownfield strategy, however the Working Group also recognized that there were several recommendations that will be the most effective in furthering brownfield development and should receive the highest priority for implementation. This section summarizes the Working Group priorities for implementation - more details are provided in chapter 8.

Liability closure was identified as being critical to the success of the strategy and the Working Group recommends that the two recommendations within this cluster be given the highest priority for implementation:

- #1 - Implementation of the Site-Based Remediation Certificate (SBRC), and
- #2 – Implementation of the No Further Action Certificate (NFAC)

Development of financial incentives was second in priority. The Working Group recommends that the highest priority be given to programs that are easy to access and that come in the early stages of site assessment and development. Therefore, the Working Group placed particular emphasis on:

- #3 - property tax cancellations, deferrals and reductions, and
- #4 - Environmental Site Assessment grants.

Coordination and education was seen as the third priority by the Working Group. Under this cluster, recommendation #7 - the establishment of a provincial Brownfield Coordinator Office - is recommended as the highest priority for implementation. While this recommendation was seen as important to ensuring ongoing program success, it was noted that unless higher priority recommendations are implemented, this office will have a limited role to play.

The remaining recommendations in the Risk Management and Registration cluster were regarded as important but of lower priority, namely:

- #5 – remediation grant where economics of development are marginal
- #9 – clarifying process for risk management plans
- #10 – registration of risk management plans on title
- #6 – grant to offset costs of preparing remediation, risk management plan
- #11 – require registration on a publicly accessible registry
- #8 – province wide education program for stakeholders

The recommendations for practical brownfield redevelopment are in the form of tools that can be combined or used on their own to address the requirements of specific brownfields. The tools address the primary barriers to redevelopment. The Working Group also acknowledges that the federal government has some tools – typically in the form of grants – that may be combined with the Working Group’s recommended tools to aid in brownfield redevelopment.

The current brownfield redevelopment process in Alberta has been summarized by the Federation of Canadian Municipalities (FCM) and published as the Alberta Brownfields Roadmap: Legislation and Funding Programs, in March 2011. The roadmap describes the interface between Alberta’s current legislative steps, the generic brownfields redevelopment steps, and funding/incentive programs [see Attachment B].

The following table illustrates the relationship of the phases of the Working Group’s recommended brownfield redevelopment process to the recommended redevelopment tools. This workflow is further described in Attachment C – Brownfield Redevelopment Process.

Phase	Process	Tools
Site assessment	Providing assistance funding for Phase 2 Environmental Site Assessments (ESA). Brownfield sites can apply for an ESA Grant if they have not yet done the appropriate site assessments.	Phase 2 ESA Grant – Recommendation #4
Planning	If the site contains contamination, it will require a Remediation Plan or Risk Management Plan; provide assistance funding for the development of either of these plans	Remediation Plan/Risk Management Plan Grant and clarifying of process for Risk Management – Recommendations #6, 9
Remediation	If a Remediation Plan or Risk Management Plan involves actual remediation of the soil and/or groundwater, provide assistance to the direct project work.	Remediation Grant – Recommendation #5
Closure	Filing relevant information of the site with the Environmental Site Assessment Repository (ESAR) Separates Tier 1 and Tier 2 sites from exposure control/risk managed sites [see Endnote 6 for explanation of Tiers]	Site-Based Remediation Certificate (SBRC) or a No Further Action Certificate (NFAC) - Recommendations #1 and 2 NFACs are awarded for sites that comply with the Tier 1 or Tier 2 standards and have not performed remediation, whereas SBRCs are awarded to those who have. Risk managed sites will need to register the acceptance and conditions on title – Recommendation #10
Development	Sites that are made ready for redevelopment may benefit from various tax incentives through municipalities, as a part of the municipal development process.	Tax incentives (municipal) – municipal tax alteration – Recommendation #3
Monitoring	Ongoing reporting in conjunction with Risk Management Plans	
Overall Tools: Brownfield Coordinator Office; Education; Registration, Registry Recommendations #7, 8, 10 and 11		

4 Certainty of Regulatory Liability Closure Enable Redevelopment

A barrier to brownfield redevelopment exists where there is uncertainty or lack of closure with respect to the environmental liability associated with a brownfield site. The Working Group has identified that addressing liability uncertainty is the highest priority for the brownfield redevelopment strategy.

In 2009, Alberta Environment and Water began to issue remediation certificates for areas that were remediated. While this is seen as a positive step forward, the Working Group would like to see improvements made to the program.

Remediation Certificates¹ issued by Alberta Environment and Water provide closure respecting regulatory liability against a future change in remediation standards for a property owner at a point in time with respect to a specific land use. A Remediation Certificate is not issued for an entire site or property. A Remediation Certificate is issued with respect to an “area” – the portion of the site that was remediated to achieve the appropriate Tier 1 or Tier 2 risk based objectives as set by Alberta Environment and Water.

Alberta Environment and Water at one time issued “comfort letters” to acknowledge site reports that either met a specified endpoint but that do not require remediation or for sites that were remediated. These letters did not close any regulatory liability; they were intended to provide some reassurance to the person responsible that the site met criteria. The department no longer has any mechanism that addresses sites rather than areas.

Brownfield redevelopment can be assisted by:

- (A) Modifying the Remediation Certificate to have it issue for an entire site, extending closure of regulatory liability to the entire site with respect to a specific land use (creating a Site-Based Remediation Certificate [SBRC])[see Attachment D]; and
- (B) No Further Action Certificates [NFAC] that would be issued for sites not requiring remediation.

4.1 Recommendation #1 – Site-Based Remediation Certificate

Modify the current Remediation Certificate specifically for brownfield sites, to be issued for an entire site, extending closure of regulatory liability to the entire site.

The liability associated with a brownfield site forms a significant barrier to brownfield redevelopment when this liability cannot be quantified or closed off. The current owner and future prospective owners require certainty in order to proceed with development. When only the remediated area associated with an environmental contamination within an overall site is certified the regulatory environmental liability for the portion of the site outside the remediated area remains uncertain.

Providing a Site-Based Remediation Certificate (SBRC) that closes future regulatory liability for the entire site, greatly increasing certainty for the current and future owners. Public interest is protected through increased transparency of site conditions, active management, and increased speed of redevelopment. The issuance of the Site-Based Remediation Certificate does not result in the persons responsible for the contamination on the site being less responsible for any off-site liabilities as they must continue to appropriately manage the impacts on third parties. Third party impacts are also discussed with respect to Risk Management Plans, outlined in chapter 7.1, and in chapter 9 'Future Considerations'.

Specific Features

The Site-Based Remediation Certificate will be available when:

- An area within a site is reported as remediated to current standards;
- The remaining portion of the site (i.e. outside the remediated area) is examined and meets applicable guidelines; and,
- The Regulator (Alberta Environment and Water) determines that the site is (i) remediated with respect to the contaminated area; and (ii) outside of the remediated area, there is no remediation necessary.

The Site-Based Remediation Certificate would be issued for the entire site, closing regulatory liability for current owner and/or responsible party for the entire site providing that the land use does not change.

4.2 Recommendation #2 – No Further Action Certificate

Create a No Further Action Certificate specifically for brownfield sites, to be issued for an entire site certifying that no remediation is required.

Currently, there is no way of acknowledging that sites meet a risk based standard where no remediation is required. This can be particularly problematic for sites that use a Tier 2² approach since this requires the person to have a good working knowledge of the Tier 2 process.

In the case of those sites where Tier 2 standards are met, but remediation is not required, a No Further Action Certificate (NFAC) would assure owners by providing a closure to regulatory liability, based on current site conditions and standards, for a specific land use. Public interest is protected through increased transparency of site conditions, active management, and increased speed of redevelopment by closing future regulatory liability.

Specific Features

The No Further Action Certificate will be available when:

- An application is made by a site owner submitting a report of site conditions to the Regulator; and,

- The Regulator considers the report of site conditions to be satisfactory to current standards.

The No Further Action Certificate is a statement of acceptable site conditions within the limits of the research conducted to prepare the report on site conditions in context of intended land use.

Considerations for Implementation of Site-Based Remediation Certificate and No Further Action Certificate

- The Remediation Certificate program is relatively new in Alberta, with less than 100 certificates issued to date. The program is part of the overall system for aiding in the redevelopment of brownfield sites – it brings together the site condition information, the actions taken to remediate and the actions that may need to be taken to manage risk. The modification to the current program will allow certificates to be issued for an entire site rather than for only an area within the site. Creating the Site-Based Remediation Certificate will require modifications to regulations and appropriate resources to provide the necessary regulatory review.
- The Record of Site Condition (RSC) was recently introduced by Alberta Environment and Water. This report could provide the means for the owner to report on the site condition to Alberta Environment and Water in support of a Site-Based Remediation Certificate or a No Further Action Certificate.
- An education program should be conducted to ensure the Remediation Certificate Program and any modifications to it are understood. The program must be presented in a manner that addresses the needs that various parties have identified as flowing from the Remediation Certificate (see Attachment D – *What Do We Need a Remediation Certificate to do?*).
- A centralized coordination of the delivery of this education, and the overall operation of the Remediation Certificate Program with its various aspects, would be beneficial [see Recommendation #7 - Brownfield Coordinator Office].
- The Working Group recognizes that the No Further Action Certificate does not cover sites that meet Tier 1 criteria so not all sites will be covered by the program. Some Working Group members remain concerned about the lack of mechanism for Tier 1 assessed sites. While the Record of Site Condition can be used for reporting on these files as well, this does not provide a form of regulatory closure. The Working Group, however, could not develop a consensus decision for addressing these types of sites. This discussion is reflected in chapter 9.

Recognizing that while there are resource implications for the Government of Alberta in administering the new program, it is the Working Group's opinion that the advancement

achieved through the recommendations in encouraging brownfield site closure and redevelopment will outweigh the disadvantages. Therefore, the Working Group suggests that implementation may be aided by the following actions:

1. The *Environmental Protection and Enhancement Act (EPEA)* Part 5 (Release of Substances) and its regulations provide definitions and conditions for Alberta Environment and Water's mandate to issue a Remediation Certificate. There are some brownfield scenarios that do not fit well within the provisions of this portion of EPEA. For example, sites where there is no evidence of a contaminant release or a contaminant release above Tier 1 guidelines cannot be easily defined as "potential for adverse effect" under Part 5 of EPEA and therefore may not easily be dealt with through these programs. Also, the physical characteristics of some incidents such as transportation corridors spills or pipeline breaks that do not readily fit into the definition of "site".

These inconsistencies with the current provisions of EPEA and Regulations could be accommodated by clearly defining the scope of the application for Site-Based Remediation Certificates and No Further Action Certificates. Alberta Environment and Water could define within regulation the scope of activities that qualify for these types of certificate.

2. The Working Group recognizes that a site based instrument will place more emphasis on the quality of the assessment report for the entire site rather than just the area remediated. We recognize that issuance of site based remediation certificates should effectively close liability based on absence of significant environmental risk for the entire site. The addition of a Site-Based Remediation Certificate or No Further Action Certificate will require better quality assurance and review of site assessment reports. The Working Group also recognizes that long review times will affect site development and will negatively impact brownfield development. Timely review is important to the process. Some steps that would help to implement these recommendations include:

- Develop better standards and practices for Phase 1 and Phase 2 Environmental Site Assessments for submission to Alberta Environment and Water. Better standards and practices will yield a better quality report and minimize the review time and turnaround time.
- Clearly define the type of sites eligible for these instruments (see paragraph 1 above).
- Allocate resources for conducting the required reviews – either directly within Alberta Environment and Water or through use of third parties. Models that allow the user to pay for timely site assessment reviews such as those currently in place in B.C. Environment could be considered.

3. No Further Action Certificates will require the formation of a new product under EPEA. It appears to not be possible to build this into the current definition of "remediation" under the Remediation Certificate Regulation. The minister has the ability to make additional

regulations under section 121 of EPEA³ and the Working Group recommends that this provision be used to determine how a person could obtain approval for an assessment that would classify a site as meeting the appropriate criteria for redevelopment i.e. resulting in a No Further Action Certificate.

4. It is important to consider how the public perceives risks associated with the redevelopment of brownfield sites. The issuance of site-based remediation certificates (i.e. Site-Based Remediation Certificate and No Further Action Certificate) will only be done when the risk to the public is addressed. Public education respecting the overall brownfield redevelopment process and these certificates in particular is important. The Working Group references here two other recommendations: Recommendation #7 Brownfield Coordinator Office; and Recommendation #8 Education Program.

5 Facilitate Redevelopment Using Financial Incentives

Three early barriers to brownfield redevelopment are:

- Uncertainty associated with the environmental condition of the site;
- Quantification of the additional costs and time required if remediation is necessary to make the site suitable for the proposed redevelopment; and,
- Costs of remediation when the redevelopment does not have favourable economics.

Preparing a Phase 2 Environmental Site Assessment and a Remediation or Risk Management Plan greatly assists in overcoming these barriers. However, the cost of preparing these becomes a barrier – there may be a reluctance to commit to the cost where there is uncertainty associated with what will be found and the economics of a redevelopment.

Developers will typically complete a Phase 1 Environmental Site Assessment (ESA) on all properties being considered for purchase and development. When the Phase 1 ESA identifies a potential for contamination, but there is no information on the condition of the site, a developer will often move their focus to greenfield sites due in part to the additional costs to complete a Phase 2 ESA to reduce uncertainty.

A Phase 2 ESA may not be required if site information is already available, however it may still be necessary if there is a need to demonstrate to the municipal development authority that current environmental standards are also met.

A Phase 2 ESA may also be desirable if the land owner or developer wishes to obtain a remediation certificate or a No Further Action Certificate to demonstrate to potential investors and or creditors that the environmental condition of the site meets current regulatory requirements prior to redevelopment, thereby increasing confidence on the mitigation of liability.

Completion of a Remediation or Risk Management Plan where contamination has been identified and delineated is also a necessary step to bring certainty to redevelopment potential while obtaining municipal approvals for rezoning, subdivision or development plans.

Where remediation has been identified as a requirement, redevelopment may not proceed if the redevelopment's economics are marginal or negative. However, the redevelopment may have positive environmental and social impacts from the perspective of benefits to the community through revitalization and an enhancement and increase in the municipal tax base.

Reduced or postponed municipal taxes and grants may provide effective ways to maintain developer interest in purchasing and redeveloping a brownfield site by offsetting future Phase 2 ESA costs, Remediation or Risk Management Plan costs and remediation costs. Assessing the success of these tools over time will allow for adjustments to improve results.

5.1 Recommendation #3 –Municipal Tax Alteration

Amend the Municipal Government Act to allow a municipal council to provide property tax cancellations, deferrals or reductions for multiple years for brownfield redevelopment.

Existing provisions in the *Municipal Government Act* (MGA) under section 347 allow a council with respect to a particular taxable property or business or a class of taxable property or business to cancel or reduce tax arrears or cancel or refund all or part of a tax or defer collection of a tax with or without conditions.

Section 347 also allows that a council may phase in a tax increase or decrease resulting from the preparation of any new assessment.

A municipality may choose to provide tax incentives to a developer to help offset the additional costs associated with brownfield redevelopment. Currently the MGA under section 353 requires that any property tax cancellations, deferrals or reductions can only be done on a yearly basis as it requires that a council must pass a property tax bylaw annually.

To provide greater certainty to developers with respect to offsetting the higher financing cost associated with brownfield redevelopment amendments to the MGA would be required to allow a council to provide property tax cancellations, deferrals or reductions for multiple years up to a maximum number of years. Although this change will require municipalities to forgo some revenue over a short period of time, the long term benefits of removal of blight and a return to productive use and generation of future higher property taxes will benefit municipalities in the longer term.

Specific Features:

- Provision of certainty through multiple year tax forgiveness (cost avoidance) would help offset high remediation and redevelopment costs for developers and would allow developers greater opportunities to secure financing.
- This would be an effective tool to stimulate redevelopment at both small brownfield sites like corner gas stations and large industrial brownfield sites.

Considerations for Implementation of Municipal Tax Alteration

- Requires amendments to the MGA:
 - Define brownfield under sections 284 or 326 and 616
 - Provide council with the authority to pass a bylaw for multiple year property tax cancellations, deferrals or reductions for brownfield sites under section 364

- Developers would like consideration for multiple year property tax deferrals from appreciated value for longer periods (i.e. 5 to 10 years) than the time it takes to complete remediation or redevelopment. This deferral would assist in offsetting the high costs of redevelopment especially in cases where the cost of redevelopment is high in comparison to the value of the land itself.
- Some municipalities have indicated an interest in provision of a mechanism for forgiveness of the provincial education tax portion for the same period if they provide property tax forgiveness to incent brownfield redevelopment to productive community use [see chapter 9 'Future Considerations' for further information].

5.2 Recommendation #4 - Phase 2 ESA Grant

Provide a grant to offset the costs for a Phase 2 Environmental Site Assessment, providing accurate information on site condition and incenting brownfield redevelopment.

Each brownfield site has a unique history. If the site is contaminated costs to remediate the site can vary greatly. Site owners, developers and investors need accurate information on the environmental condition of the site at an early stage in their decision making process to determine if the site presents a positive case for possible purchase and redevelopment.

Where information on the site condition is lacking a Phase 2 Environmental Site Assessment (ESA)⁴ may be required. Providing a grant to offset the costs for a Phase 2 ESA is an effective way to stimulate interest in brownfield redevelopment by minimizing investment costs prior to understanding the site condition.

Specific Features

The Phase 2 ESA Grant will be available:

- Where there is a Phase 1 ESA Report to Canadian Standards Association (CSA) standards that identifies the potential for subsurface contamination based on past activities or past ESA Report(s) which identify the presence of contamination above Alberta Environment and Water guidelines;
- When the site meets the definition of a brownfield⁵;
- To the owner of the site as listed on land title, a developer who has entered into a conditional agreement to purchase the site based on the outcome of the Phase 2 ESA, or a municipality that is the site owner through purchase or tax recovery;
- Prior to commencing the Phase 2 ESA; and,
- Without requiring the developer or site owner to commit to proceed with development irrespective of the extent of contamination identified by the Phase 2 ESA.

The Phase 2 ESA Grant:

- Will provide assistance on a cost-shared basis up to a maximum grant limit. The eligible costs will be limited to the direct costs to complete the ESA work and will not include legal fees or design and development costs;
- Will be provided up-front;
- Will be used to complete the Phase 2 ESA or an additional ESA to delineate the extent of contamination; and,
- Will require the grant recipient to enter into a conditional grant agreement that will include conditions for documenting how grant funding was spent.

The Phase 2 ESA report:

- Must have professional signoff ⁶; and,
- Must meet the AEW minimum requirements for Phase 2 Environmental Site Assessment

5.3 Recommendation #5 - Remediation Grant

Provide a grant to offset the costs for conducting remediation, incenting development where it is otherwise not economic.

Remediation costs necessary to bring a site to a condition suitable for development can be a significant barrier to redevelopment at a brownfield site. Providing a grant to offset remediation costs for brownfield sites where the project is not economic is an effective way to incent brownfield redevelopment and stimulate developer interest.

Specific Features

The Remediation Grant will be available:

- Where there is a remediation or risk management plan for the brownfield site that has received all necessary regulatory approval and affected third party acceptance where required;
- When the municipality has expressed support for the proposed redevelopment on the basis of community enhancement or revitalization benefits;
- When the site meets the definition of a brownfield (see Endnote #5); and,
- To the owner of the site as listed on land title, a developer who has entered into a conditional agreement to purchase the site based on the outcome of the Phase 2 ESA, or a municipality that is the site owner through purchase or tax recovery

The Remediation Grant:

- Will provide assistance on a cost-shared basis up to a maximum grant limit. The eligible costs will be limited to the direct remediation costs and will not include legal fees or design and development costs;
- Will be available up-front;
- Will require a written commitment from the developer to proceed with redevelopment; and,
- Will require the grant recipient to enter into a conditional grant agreement that will include conditions for documenting how grant funding was spent.

The remediation report must have professional signoff (see Endnote #6) and meet Alberta Environment and Water's requirements.

5.4 Recommendation #6 - Remediation or Risk Management Plan Grant

Provide a grant to offset the costs for preparing a Remediation or Risk Management Plan to further reduce the uncertainty relating to remediation costs and time frames or to quantify the long term cost obligations associated with risk management.

Where the Phase 2 ESA demonstrates that contamination is present at the brownfield site the site owner or developer will require a detailed remediation or risk management plan to be completed to further reduce the uncertainty relating to remediation timeframes and costs, or to define and quantify the longer-term obligations potentially associated with risk management. This recommended remediation or risk management plan grant aids in the preparation of these plans; it does not apply to the actual costs of risk management. This is the next critical step in the decision making process on whether to proceed with redevelopment at a brownfield site.

Providing a grant to offset the cost of professional services to prepare a remediation or risk management plan is an effective way to incent brownfield redevelopment and stimulate developer interest by minimizing investment costs prior to committing to development.

Specific Features

The Remediation or Risk Management Plan Grant will be available:

- Where there is a Phase 2 ESA Report that identifies subsurface contamination exceeding Alberta Environment and Water Guidelines;
- When the site meets the definition of a brownfield (see Endnote 5);
- To the owner of the site as listed on land title, a developer who has entered into a conditional agreement to purchase the site based on the outcome of the Phase 2 ESA, or a municipality that is the site owner through purchase or tax recovery; and,

- Without requiring the developer or site owner to commit to development.

The Remediation or Risk Management Plan Grant:

- Will provide assistance on a cost-shared basis up to a maximum grant limit. The eligible costs will be limited to the direct costs to complete the plan and will not include legal fees or design and development costs;
- Will be provided up-front; and,
- Will require grant recipient to enter into a conditional grant agreement that will include conditions for documenting how grant funding was spent.

The Remediation or Risk Management Plan must have professional signoff (see Endnote 6).

Considerations for Implementation of Grants

- A provincial source of funding is required to offer grants on a province wide basis.
- The size of the grants and the percentage of the full cost to be covered by the grants needs to be established.
- Total amount of grants and time period in which they will be made available needs to be determined.
- A dedicated resource such as a Brownfield Coordinator Office would be required to administer funding based incentives for brownfield sites [see Recommendation #7].
- Where the Phase 2 ESA determines that no contamination exists that exceeds Alberta Environment and Water guidelines, the site would not qualify for a Remediation Certificate under the current system. It would be desirable, specific to sites meeting the brownfield definition, to have some other mechanism like a Record of Site Condition or a No Further Action Certificate for these situations to add assurance that Alberta Environment and Water's guidelines have been met [see Recommendations #1 and #2].
- Grants may address cost barriers. However, a timely regulatory review process, specific to sites meeting the brownfield definition, would be desirable to assist in addressing the additional time barrier that impacts the developer's carrying costs during the development process.
- Remediation Grants will require a relatively larger funding commitment than Phase 2 ESA Grants or Remediation or Risk Management Plan Grants, and will not be effective for sites where extensive contamination is identified.
- Effectiveness may be increased when offered with other types of brownfield incentives like a municipal tax incentive [see Recommendation #3].

6 Coordination and Education are Foundational Requirements for Practical Brownfield Redevelopment

The Working Group discovered through their discourse that there is a need for education respecting remediation and brownfield redevelopment; and, that collaboration across all levels of government, the community, developers and support professionals is essential in enabling the successful redevelopment of brownfield sites in Alberta.

6.1 Recommendation #7 – Enhance Collaboration through a Provincial Brownfield Coordinator Office

Establish a provincial Brownfield Coordinator Office, led by a Brownfield Coordinator, to foster the implementation of the proposed Alberta Brownfield Strategy outlined in this report.

To enhance collaboration a provincial **Brownfield Coordinator Office**, led by a Brownfield Coordinator, would facilitate the implementation of the proposed Alberta brownfield strategy comprised of the recommendations in this report.

Specific Features:

- Actively promote understanding and build capacity on brownfield redevelopment within the development sector, municipal levels of government, and Alberta communities by:
 - Coordinating efforts with other organizations (Federation of Canadian Municipalities, Canadian Urban Institute, Bloom Centre) and other provincial jurisdictions to provide the most up to date information on best practices, tools and practical experience to Alberta municipalities, developers and communities.
 - Building capacity through delivery of presentations, workshops and developing guidance documents to education stakeholders, building a brownfield community of practice.
- Administer proposed provincial level brownfield grants, including:
 - Review of applications for eligibility.
 - Administration of grants to eligible applicants through conditional grant agreements.
 - Administration of program budget and oversight, accountability and reporting on grant expenditures.

- Enhance coordination and collaboration of provincial and municipal approvals in support of timely decision making relating to site acquisition, assessment, remediation and redevelopment by:
 - Building relations to enhance the coordination and collaboration of provincial and municipal approvals in support of timely decision making relating to site acquisition, assessment, remediation and redevelopment
 - Working with Alberta Environment and Water to develop and coordinate a timely and streamline review process for sites that meet the brownfield definition.
 - Acting as a resource for municipalities who are coordinating rezoning and development reviews with provincial reviews related to environmental condition of the site or remediation certificates.

Benefits flowing from the Brownfield Coordination Office include:

- Providing education and sponsoring a timely responsive review process reduces uncertainty for site owners and developers on the environmental condition of the site and costs and timeframes requirements for remediation and redevelopment activities.
- Encouraging improved coordination to enable a more timely review and approvals process among all levels of government.
- Increasing risk tolerance by education of all stakeholders to better understand the processes and information requirements to increase certainty during decision making, and filling the gap for education on brownfield issues, barriers and remediation and redevelopment processes.
- Providing access to incentives to reduce costs from the early stage to the final stage of the development decision process, offsetting costs for ESA and Remediation activities.
- Promoting and building capacity with developers and communities to ensure the understanding of all phases of the brownfield redevelopment process.

Considerations for Implementation of a Brownfield Coordinator Office

There are some considerations associated with formation of the Brownfield Coordinator Office:

- Staff and an operating budget are required for this provincial government office
- Commitment to additional tools to use in the brownfield redevelopment process, including such tools as grant and tax incentives, remediation certificate and risk management process enhancements, and supportive legislative and regulatory changes
- Statutory definition of brownfield sites creates the mandate for the Brownfield Coordinator Office to function

- The Brownfield Coordinator Office will stay informed of and support, as requested, the activities of Alberta Environment and Water as they execute their responsibilities for review and approval of remediation or risk management plans and the issuance of remediation certificates for brownfield sites. There is a need for timely review and therefore AEW and the Brownfield Coordinator Office must align their priorities to ensure resources are available from AEW.

6.2 Recommendation #8 – Educational Program

Develop and implement a province wide education program for stakeholders on the remediation certificate program, exposure control/risk management and the brownfield redevelopment process.

There is substantial discussion amongst the stakeholders on the subject of remediation certificates and brownfield redevelopment.

The Cities of Calgary and Edmonton have produced educational brochures and instructional material; Alberta Environment and Water has information available on its website and in print media; AUMA and FCM have materials available as do most if not all other provinces.

The education program will be designed to build on these current materials and efforts to provide an increased focus on brownfield redevelopment specifically, in the context of the overall remediation certificate process. Education will serve to remove negative assumptions and to encourage use of the available tools for brownfield redevelopment.

The education program will be led jointly by Alberta Environment and Water, Municipal Affairs and the Brownfield Coordinator Office, working with the AUMA, AAMDC, the Cities of Calgary and Edmonton and other interested parties e.g. industry associations.

Special Features:

- Guides, brochure, forms
- Web access
- Maximize use of existing materials, and efforts within municipalities, industry associations

Considerations for Implementation of an Education Program

- Avoid duplication of existing efforts
- Utilize existing networks in municipalities and industry (associations, networks) to convey message
- Use case studies to reflect typical situations
- Use of Q&A, FAQ's

7 Risk Management and Registration

The Working Group determined that recording or registering various instruments (including risk management plans) to inform the public and potential purchasers of site conditions could facilitate brownfield redevelopment. Each brownfield site has a unique history. Developers, investors and regulatory authorities need access to current, reliable site information. An “information registry” would provide easy access to available information through a searchable database. In addition, if the Risk Management Plan is able to be registered on land title, issues associated with regulatory liability uncertainty can be minimized.

Risk Management Plans were identified as being in need of some clarification prior to being considered for registration.

7.1 Recommendation #9 – Risk Management Plans

Clarify the process for the acceptance and use of Risk Management Plans with respect to brownfield sites to define regulatory liability and to ensure that the plans will continue with land transfers.

It is not always practical or feasible to remove all contamination at a brownfield site but the site may still be managed in an environmentally safe manner. Under the current policies, it is not possible to close a site where sites cannot meet a Tier 1 or Tier 2 objective for one or more activities but where activities may be appropriately managed on the site to prevent risk. This creates a barrier for brownfield redevelopment where sites cannot be remediated to meet a Tier 1 or Tier 2 objective since there is uncertainty or lack of closure with respect to the environmental liability.

The development of tools to outline Alberta Environment and Water’s expectations for risk management plans and to formally accept risk management plans for brownfield sites would allow for better redevelopment potential. This would be an extension of the current situation and practice where a contaminated site has been remediated to the applicable provincial guidelines, but there is off-site contamination that has been caused from the source site. It is possible for a Remediation Certificate to be issued for the remediated source site as long as the proposed risk management for the off-site impacts is accepted by the affected third party or parties assuming they have received proper notification of the circumstances.

While risk management is an option within the current Alberta Environment Tiered⁷ framework it is typically used only for large sites involving long periods of time and extensive reviews, under current policies. Brownfield redevelopment can be assisted through making changes that permit easier access to conditional closure when ongoing risk management is required and possible.

Four enhancements are recommended to make Risk Management Plans a more viable option in brownfield redevelopment:

- (a) Clarity on the process for acceptance by Alberta Environment and Water (the Regulator) of risk management plans;
- (b) Clear and unambiguous communication by the Regulator to the owner/developer of the ongoing requirements for risk management;
- (c) Assurance that risk management plans will continue with land transfers. Ideally, the Working Group would like to see notification on land title; and,
- (d) Clarity on who is a third party to a risk management plan and public education on how risk management can be effectively used to control exposure risk.

Making the risk management plan process clearer within the policy and regulatory framework will facilitate brownfield redevelopment for sites that cannot be cleaned up to criteria required for a remediation certificate, or where interim land use might be desirable prior to full remediation. Public education is needed to ensure that long term risk management and interim use is seen as a viable option. Clarity around third parties and third party acceptance will speed up the process where there is a need to manage risks that are off the property of interest.

Specific Features

Recommendations for utilizing Risk Management Plans to facilitate brownfield redevelopment include three main features: an effective, transparent review process; a mechanism for formal acceptance of the plan; and, public assurance that ongoing management requirements are effectively communicated and remain viable for as long as necessary. The features include:

(A) Effective Transparent Review Process

- Establish clear and transparent expectations for Risk Management Plans, including an enhancement of policies and procedures for what is required within a Risk Management Plan and how plans will be reviewed.
- Provide a clear assurance mechanism that considers risks across the matrix of pathways and receptors, how these are being addressed within the plan including clear performance measures and milestones to be reached during implementation.
- Clarify the requirements for collaboration between parties in developing a Risk Management Plan. There needs to be better guidance on when and how to involve other provincial departments (e.g. Alberta Health), municipal governments or potentially affected third parties.
- Clarify who is an affected third party and how Alberta Environment and Water decides when the third party needs to be consulted.
- Provide a clear and timely mechanism for review of Risk Management Plans.

(B) Transparent Mechanism for Acceptance of the Risk Management Plan

- Provide a clearer regulatory process for accepting the Risk Management Plan. Formal acceptance of Risk Management Plans will allow redevelopment prior to remediation being completed. Where interim use agreements are desirable based on eventual completion of remediation, formal acceptance of the interim Risk Management Plan would enable interim use options for the site.
- In developing the format for the Risk Management Plan the government will need to consider how the requirements of the Risk Management Plan will be stated, accepted and communicated, making them clear and unambiguous requirements of site management. While no specific mechanism was agreed to by the Working Group, a number of available options were explored, including: use of section 21 of EPEA; enhancement of Division 2 Part 5 of EPEA; Prospective Purchaser or Voluntary Remediation Agreements or Certificates of Property Use that are registered against the land title (e.g. along the lines of what is done in Ontario).

(C) Public Assurance

- Ensure that the Risk Management Plan acceptance process includes the provision for ongoing reporting or reporting at specific milestones.
- Provide a mechanism to communicate the requirements attached to the risk management plan as a part of the process of land transfer. The mechanism should provide a permanent record that runs with the land of how the site may be used, thereby managing risk through pre-determined use. The Working Group favours approaches such as those used in Ontario where the risk management requirements are registered against land title, creating an unambiguous requirement for site management that is communicated during transfer of title. The Working Group would also consider options for a separate registry, perhaps using the current ESAR⁸ system.

Considerations for Implementation of Risk Management Plans to Facilitate Brownfield Redevelopment

- Costs may need to be considered in the form of long term maintenance of risk management plans at sites. Where there are ongoing requirements after land transfer there should be assurance of ongoing fiscal responsibility. This could be in the form of orphan funds, insurance requirements, demonstration of company viability or other forms that would be in place to manage residual risks.
- The Working Group recognizes that Alberta Environment and Water would still restrict use of long term risk management for high risk sites or where site restrictions are not easily managed. For instance, the presence of mobile contaminant phases that have a high

probability of moving off-site, hazardous materials with high risks that are not easily mitigated without use of active control mechanisms or site entry restrictions, and the presence of contaminants that could result in acute impacts during short term exposure events may each restrict the department's ability to use long term Risk Management Plans due to the high risk nature of the site. The Working Group recommends that these scenarios be clarified by Alberta Environment and Water so it is easier to determine whether a given site would qualify for a risk management plan option.

- There still appears to be public misconceptions regarding risk management options. These misconceptions may restrict parties from accepting these Risk Management Plans. As a part of enhancing risk management, an education program should be conducted to ensure the program is understood, that the use of risk management becomes a more viable option in the eyes of the public and that it is presented in a manner that addresses the needs of the various parties [see Recommendation #8]. A centralized coordination of the delivery of this education, and the overall operation would also be beneficial [see Recommendation #7].
- Further discussion on Risk Management Plans respecting third party involvement is presented in chapter 9 'Future Considerations'.

7.2 Recommendation #10 - Allow Registration of Risk Management Plans on Land Titles

Develop a process to allow for the registration of Risk Management Plans at land titles to provide authoritative notice to the public and all subsequent purchasers of legal obligation with respect to risk management.

Registration at land titles of legal instruments that authoritatively describe the regulatory conditions and any corresponding land use restrictions (i.e. Risk Management Plans) for redevelopment would provide assurance as to the extent of regulatory liability and allow liability to follow the title in the event of land sales, transfers.

Specific Features:

- Registration on title would pass from all future sellers to all future purchasers.
- Registration means that the information may be relied upon e.g. the environmental condition.
- Registration may be restricted to a notice that the interested party should refer to the Brownfield Information Registry (e.g. ESAR) – but this would provide a common point of understanding and data sharing.
- On-line search by legal land description, municipal description, map.
- Common format for all reporting; transparency through access to complete reports.

- Data is reliable within specific time parameters.
- Updating: site assessments, monitoring reports, risk management plan performance.
- Coordinated, central administration of data gathering, processing, storage.

Considerations in Implementation Registration at Land Titles

- All documents registered will need to be verifiable at the time of registration e.g. if a Risk Management Plan is registered, then the assessment must be able to be relied upon legally – defining the amount of contamination, the degree of remediation, risks remaining to be managed and how this management is to occur. Registration will establish regulatory legal liability for the site.
- Risk Management Plans may not specify the party specifically responsible for actions, and therefore it may be preferred to register the Risk Management Agreement together with the Risk Management Plan to assure certainty and identity of the responsible parties.
- Unless there is a mandatory requirement to register there will not be a consistent level of confidence. For instance, there is no mandatory requirement to file site assessments for activities under Part 5 of EPEA - only activities that produce a substance release must have a record filed.
- While registration may be desirable, in practice it may be difficult to gain sufficient data certainty, currency, and completeness across Alberta such that wide spread registration at Land Titles could occur.

7.3 Recommendation #11 – Require Registration in a Publicly Accessible Environmental Information Registry

Develop a process to register required information with respect to brownfield site conditions to allow interested parties to reduce uncertainty when considering redevelopment of brownfield sites.

Alberta Environment and Water maintains a registry called Environmental Site Assessment Repository (ESAR)⁹ that does provide a searchable database, but it is not well populated with data. This could be developed further into a centrally maintained database that provides on-line access to information pertaining to brownfield sites including the environmental history, condition and regulatory conditions [e.g. Risk Management Plans] for redevelopment.

The Information Registry greatly assists in overcoming one of the barriers to brownfield site redevelopment – the uncertainty associated with the site. The Information Registry means that a developer or other interested party can easily access environmental information about any site – information that is stored consistently. For example, a Phase 2 Environmental Site

Assessment may not be required if site information is already available. The cost of doing further assessments may be avoided by having access to historical data.

Improved information – and ready access to it – will assist in making timely decisions about whether to redevelop a site. Reducing uncertainty is critical in brownfield redevelopment.

Specific Features:

- Searchable database
- Consistent with land titles search characteristics
- On-line search by legal land description, municipal description, map
- Publicly accessible
- Common format for all reporting; transparency through access to complete reports
- Data is reliable within specific time parameters
- Updating: site assessments, monitoring reports, risk management plan performance
- Coordinated, central administration of data gathering, processing, storage
- Create an inventory that can be used as a benchmark to track brownfield progress

Considerations in Implementation of an Information Registry

- The Information Registry (even if using ESAR) is limited in the short-term as there are only a certain number of environmental assessments, reports on site conditions, remediation certificates and reclamation certificates. An investment of time and money will be necessary to populate the Information Registry for the brownfield sites.
- Investment required on ongoing basis to enter data, including validation step
- A requirement to register information will need to be stipulated as a condition of using brownfield redevelopment tools such as Site-Based Remediation Certificates, No Further Action Certificates, or financial incentives.
- May require regulatory direction to ensure data is current and correct
- The Information Registry adds limited value without the concurrent implementation of other aspects of what might be called the Brownfield Redevelopment System, including:
 - Standardized information on environment conditions
 - Formalized and authoritative reporting of remediation efforts, approval and ongoing (risk) management plans
 - Remediation status for an entire site, not only for a “release area”
 - Awareness of developers and municipalities of the availability of this information
 - Central coordination of the brownfield redevelopment information gathering, storage and access, including the communication of standards and the issuance of site remediation certificates

8 Implementation – Considerations and Prioritization

8.1 Milestones Represented by This Report

The Brownfield Redevelopment Working Group has accomplished a great deal. Key milestones are reflected in this report, including:

- Main issues concerning the brownfield strategy are identified
- Key recommendations to facilitate brownfield redevelopment are outlined
 - Recommendations include a sound combination of practical tools for the purpose of brownfield redevelopment that consider the issues as they pertain to individual sites, built on a straightforward generic system.

As outlined in the Working Group's Terms of Reference (TOR), the Working Group recommendations are 'designed to be applied individually, or in combination'. The TOR also refers to the flexibility, stackability and integrated options for the stakeholders to use the tools.

8.2 Priorities for implementation

The Working Group considers all recommendations within this report to be highly relevant for the development of a comprehensive brownfield strategy in the province of Alberta. The Working Group envisions the acceptance of all recommendations as the most ideal way to approach the brownfield strategy.

The Working Group has identified several recommendations that will result in the most benefit for brownfield redevelopment in the province. These recommendations are seen as fundamental to the support of the other recommendations and should receive the highest priority for implementation.

A priority ranking was used by the Working Group to determine the priority of a recommendation. Section 8.3 outlines the priority ranking methodology.

The prioritized recommendations have been placed in four clusters: liability closure, financial incentives, coordination and education, and risk management and registration. These clusters have been used in structuring the earlier sections of this report.

Liability closure refers to the recommendations involving certificates that provide release from liability for the care and control of substance releases. Financial incentives include all recommendations involving financial incentives, such as grant programs and tax benefits. Coordination and education refers to the recommendations involving the tasks of a Brownfield Coordinator Office, including the coordination of the brownfield strategy and the education of stakeholders. Risk management and registration contains recommendations regarding risk management implementation and the registry of both risk managed and other types of brownfield sites. The level of priority is defined per cluster.

Priority cluster 1: liability closure

Recommendations #1 and #2 introduce two certificates that provide liability closure for the entire site: the Site-Based Remediation Certificate (SBRC) and the No Further Action Certificate (NFAC). These recommendations are:

1. Modify the current Remediation Certificate specifically for brownfield sites, to be issued for an entire site, extending closure of regulatory liability to the entire site.
 2. Create a No Further Action Certificate specifically for brownfield sites, to be issued for an entire site certifying that no remediation is required.
- The SBRC places first on the priority list with eight votes from the Working Group. The NFAC shares second place with four votes from the Working Group.
 - The cluster 'liability closure' received the highest priority from the Working Group.
 - The Working Group underlines the importance of liability closure mechanisms, i.e. certificates that provide closure for the entire site. Site-based liability closure is vital in facilitating redevelopment.

Priority cluster 2: financial incentives

Recommendations #3, #4, #5, and #6 involve grant programs for brownfield sites to stimulate redevelopment:

3. Amend the Municipal Government Act to allow a municipality council to provide property tax cancellations, deferrals or reductions for multiple years for brownfield redevelopment.
 4. Provide a grant to offset the costs for a Phase 2 Environmental Site Assessment, providing the accurate information on site condition and incenting brownfield redevelopment.
 5. Provide a grant to offset the costs for conducting remediation, incenting development where it is otherwise not economic.
 6. Provide a grant to offset the costs for preparing a Remediation or Risk Management Plan to further reduce the uncertainty relating to remediation costs and time frames or to quantify the long term cost obligations associated with risk management.
- The decision to allow tax cancellation, deferral or reduction for multiple years creates more certainty for the owner. The redevelopment of properties will have long term benefit for the municipalities.

- To incent brownfield redevelopment on the sites that are either marginal or slightly negative, some government funds will be needed in several phases of brownfield redevelopment.
- The Working Group recommends providing grants for three phases of redevelopment: the site assessment phase, the planning phase, and the remediation phase.
- The Working Group would like to particularly emphasize the importance of the property tax cancellations, deferrals and reductions and the ESA grant.
- The cluster 'financial incentives' received the second priority ranking for implementation.

Priority cluster 3: coordination and education

The Working Group sees coordination and education as essential to the strategy; without coordination, a brownfield policy would have no merit. Two recommendations are related to coordination and education with regard to the brownfield strategy:

7. Establish a provincial Brownfield Coordinator Office, led by a Brownfield Coordinator, to foster the implementation of the proposed Alberta brownfield strategy outlined in this report.
 8. Develop and implement a province wide education program for stakeholders on the remediation certificate program and exposure control/risk management and the brownfield redevelopment process specifically.
- To foster the implementation and to provide coordination to the strategy, the Working Group proposes to implement a Brownfield Coordinator Office in recommendation #7.
 - Recommendation #8 emphasizes the need to educate stakeholders on brownfield redevelopment and the provincial strategy.
 - The cluster 'coordination' received the third priority for implementation.

Coordination and education was seen as the third priority by the Working Group. Under this cluster, Recommendation #7 - the establishment of a Provincial Brownfield Coordinator office - is recommended as the highest priority for implementation. While this recommendation was seen as important to ensuring ongoing program success, it was noted that unless higher priority recommendations are implemented, the Provincial Brownfield Coordinator office will have a limited role to play.

Priority cluster 4: risk management and registration

9. Clarify the process for the acceptance and use of Risk Management Plans with respect to brownfield sites to define regulatory liability and to ensure that the plans will continue with land transfers.
 10. Develop a process to allow for the registration of Risk Management Plans at land titles to provide authoritative notice to the public and all subsequent purchasers of legal obligation with respect to risk management.
 11. Develop a process to register required information with respect to brownfield site conditions to allow interested parties to reduce uncertainty when considering redevelopment of brownfield sites.
- To better enable risk management and the continuation of risk management through land transfers the Working Group developed Recommendations #9 and #10. Recommendation #10 and recommendation #11 enhance the current registry of brownfield sites and risk management sites.
 - While the Working Group sees great value in the implementation of these recommendations, the recommendations regarding risk management and registration received the least amount of priority votes.

8.3 Methodology

This section outlines the methodology for the prioritization of the individual recommendations and the establishment of the clusters. To determine the importance of each recommendation, each of the eight representative organizations was asked to provide four recommendations with a priority vote, leading to the distribution of 32 votes over the recommendations. The results of the ranking are outlined in Figure 2.

Figure 2. Ranking of recommendations by the Working Group

Rank	Recommendation	Priority Votes
1	1	8
2	2, 3, 4, 7	4
6	5, 9, 10	2
9	6, 11	1
11	8	0

Subsequently, the priority votes per recommendation established a ranking for each of the four clusters based on the average of votes for the recommendations. The ‘liability closure’ cluster received an average of 6 priority votes per recommendation within that cluster. This is the highest average and thus the cluster receives the highest priority. The ‘financial incentives’ cluster received the second priority with an average of 2.75 votes per recommendation. The ‘coordination and education’ cluster placed third with an average of 2.00 votes per

recommendation. The 'risk management and registration' cluster has the lowest priority with an average of 1.67 votes.

Figure 3. Ranking of the clusters with the average priority votes

Rank	Cluster	Recommendations	Average of Votes	Priority Votes per Recommendation
1	Liability Closure	1, 2	6.00	8, 4
2	Financial Incentives	3, 4, 5, 6	2.75	4, 4, 2, 1
3	Coordination and Education	7, 8	2.00	4, 0
4	Risk Management and Registration	9, 10, 11	1.67	2, 2, 1

9 Future Considerations

The Working Group identified several areas that would benefit from further review. While there was not a consensus on the appropriateness of each of these areas in facilitating the practical redevelopment of brownfield sites, at least some of the Working Group members see value in pursuing the following topics.

Municipal Liability Closure

Municipalities have a significant role to play in brownfield redevelopment and the potential liabilities that municipalities are exposed to need to be acknowledged and addressed. Without municipal approvals, brownfield sites cannot be redeveloped. While there are some general provisions in the *Municipal Government Act* related to the extent of a municipality's civil liability when exercising municipal powers and there are specific provisions in the *Environmental Protection and Enhancement Act* related to the extent of a municipality's regulatory liability as a "person responsible", they do not specifically address a municipality's liability for the issuance of land use, subdivision and development approvals for brownfield redevelopment. Consideration should be given to extending liability exemptions in a manner parallel to liability exemption provisions for Alberta Environment and Water with respect to dealing with contamination issues.

Providing liability closure for Tier 1 criteria sites – reference Recommendation #2

The No Further Action Certificates are applicable to Tier 2 sites – they are not currently proposed to close liability for sites that meet Tier 1 criteria and did not require remediation. It is suggested that a method to close liability for Tier 1 criteria sites would assist in brownfield redevelopment.

Third party – risk guidance document from Alberta Environment and Water

Risk Management Plans require third party agreement where site contamination has extended beyond the site and is potentially impacting these third parties. Third parties are not compelled to agree to the Risk Management Plan, even when the plan is otherwise approved by the regulator. It is suggested that the provision of information to these third parties on the nature of risks involved, the efficacy of risk management approaches, and similar risk-related information by the Government would assist in appropriate decision making. Defining circumstances where there could be a move away from third party agreement to third party notification of a risk management agreement would accelerate review and acceptance of Risk Management Plans.

Market Value – consider a means to tax land at a value undiminished by site contamination when the person responsible for the contamination remains the owner of the site

When a site becomes known as a brownfield site, its market value typically is diminished, sometimes greatly. Municipal property taxation is driven by market value assessments – the effect of the brownfield status can be to lower tax assessment value, through appeal, to an assessment value of market value less the proven cost of remediation and therefore lowers the property tax. This is seen as unreasonable by some parties – the polluter is seen as getting a benefit from causing the damage, in the form of lower taxes, and this may actually serve as a disincentive to redevelopment. The goal is to provide an **incentive** to redevelop the site – which is not the case when market value and property tax are reduced. It is suggested that there should be a method to adjust the market value assessment in the instance where the polluter continues as owner, such that the polluter will still be required to pay the same taxation rate as though the property was not a brownfield site, therefore removing the benefit from not redeveloping.

Community Revitalization Levy (CRL) – changing regulations to allow the levy to be applied to remediation costs

The CRL does not currently allow the levy to be used for remediation costs incurred by a private developer. While the CRL is quite a comprehensive approach that is not widely used, it is suggested that a change in regulation to allow the levy to apply to remediation costs would provide incentive to brownfield redevelopment in applicable circumstances.

Tax Reduction to Recoup Cost of Remediation

There may be a benefit from offering a future property tax reduction as a method of allowing developers to recoup, recover a portion of the costs of remediating a brownfield site. This is an alternative to a grant being provided by the municipality prior to remediation. This may require modifications to the *Municipal Government Act*.

Establish a Provincial Municipal Brownfield Fund that allows municipalities to borrow funds from the province in order to provide these funds as grants to brownfield redevelopment projects.

Municipalities may not be able to fund specific brownfield grants within a given fiscal period. A provincial fund that municipalities could access for loans may assist in brownfield redevelopment. The loans would be repaid through the uplift on property tax that will result when redevelopment is complete.

Provide an Exemption from the Provincial Education Tax Portion of Property Taxes as an Incentive to Brownfield Redevelopment

Some members of the Working Group suggested that a decision by the Province to provide an exemption from the education tax on redeveloped brownfield sites as an incentive to redevelopment could have a significant impact. The education tax is about 40 percent of the total property tax; therefore, the leverage associated with a reduction in the municipal portion of property tax would be greatly enhanced through the exemption of the education tax as well. The *MGA* section 362 exempts government, churches, and other bodies from property taxes. Brownfields that have been made eligible for property tax reductions or exemption by the local municipal council could be included as an exemption in the *MGA* and therefore exempted from Provincial education taxes. Exempted properties are not included in the annual Equalization Assessment conducted by the Minister under section 317 of the *MGA*.

Endnotes

¹ Remediation Certificate Program Overview

Remediation certificates provide an incentive to clean up spills by providing closure of regulatory liability against changing remediation standards. To be eligible for a remediation certificate, applicants must demonstrate remediation success and complete the Remediation Certificate Application Form as described in one of the Guides to Remediation Certificates.

Remediated areas are eligible for certification under one of two programs. The first program provides remediation certificates for general contaminated sites while the second program provides remediation certificates for upstream oil and gas sites.

Participation in the remediation certificate program is voluntary. Site owners or developers that would like to receive a remediation certificate must submit a completed Remediation Certificate Application Form and an application fee of \$1000. The form must be signed by the applicant and by a member of a Professional Regulatory Organization.

Applicants that meet the program requirements and apply with the required information and fee will receive a certificate acknowledging that the remediated area has met Alberta's remediation guidelines. A remediation certificate provides assurance that additional remediation is not required for the remediated area only.

AEW can refuse to issue a remediation certificate for a site if the information requirements are not met, the remediated area does not meet Alberta's remediation guidelines or there is remaining contamination above criteria off the property of interest and the affected third party has not accepted the management plan for the residual contamination. A remediation certificate can be cancelled if the remediated area fails an audit or there is a substantiated complaint.

² The Tier 2 approach allows the professional to modify Tier 1 objectives based on site specific information. See glossary for a complete definition of Tier 2.

³ **Section 121:** The Minister may make regulations

- (a) classifying releases for the purposes of this Division and exempting any release or any class of release from the application of this Division, and attaching terms and conditions to any such exemption;
- (b) respecting the making of a report under section 111 and its contents and providing for the waiver of a requirement to make a report under section 111(2) where in the opinion of the Director no adverse effect is likely to occur as a result of the release or the adverse effect caused by the release has been adequately controlled.

⁴ **Phase 2 ESA:** For the purpose of this recommendation, this can be interpreted as either a report for the initial intrusive site investigation to screen for contaminants or a report for delineation of spills and releases to determine the horizontal and vertical extent of the contamination. See the glossary for a complete definition of Phase 2.

⁵ **Brownfield site:** An abandoned, vacant, derelict or underutilized property where past actions have resulted in actual or perceived contamination and where there is an active potential for productive community use including reuse and full redevelopment.

⁶ **Professional signoff:** Must be signed off (including the professional's signature and either registration, membership number or stamp/seal) by a qualified professional:

Who is a member in good standing of one of the following six professional regulatory organizations: Alberta Institute of Agrologists; Alberta Society of Professional Biologists; Association of Professional Engineers, Geologists and

Geophysicists of Alberta; Association of the Chemical Profession of Alberta; College of Alberta Professional Foresters; College of Alberta Professional Forest Technologists;

Who has a minimum of five years of relevant experience in remediation or reclamation, based on the Competencies for Reclamation and Remediation Advisory Committee's Recommendations Report; and

Who carries professional liability insurance (errors and omissions) unless undertaking work on behalf of their employer.

⁷ **Tiered Framework:** The objective of the Tier 1 and Tier 2 remediation guidelines is to deliver the same degree of human health and ecological protection, regardless of which option is used. The same protocols are used to develop both Tier 1 and Tier 2 guidelines. The two options differ in the amount of site-specific information used to develop the guidelines. Exposure control/risk management requires the use of administrative or engineered controls to control exposure along one or more pathways. Often, this is restricted to large, complex sites because of the need for detailed site information to support the exposure control plan. Alternatively, it is noted that some regulatory agencies (e.g. British Columbia) build some simple elements that are defined as exposure control by Alberta Environment and Water into the risk assessment process, making this a more viable option for site closure at smaller facilities.

⁸ **ESAR:** The Environmental Site Assessment Repository

⁹ The Environmental Site Assessment Repository is an online, searchable database that provides scientific and technical information about assessed and/or reclaimed sites throughout Alberta. Phase 2 Environmental Site Assessments determine the quality of soil and groundwater of a site, particularly at retail gas stations and other commercial and industrial sites. A site assessment does not necessarily mean a site is, or ever was, contaminated.

Reclamation certificates issued for upstream oil and gas well sites, gravel pits and other specified lands on private land and the associated file information for the certificates (applications, reports) are also available on ESAR. Reclamation certificates issued for sites on public lands of the province) are available through Sustainable Resource Development (CrownLandDataSupport@gov.ab.ca)

Using [Alberta Registries Land Titles SPIN2](#) technology, the Environmental Site Assessment Repository allows you to search for a site by legal land description, municipal address or map. If information on a site is available, users can download, email and print relevant information and documents.

Attachment A – Working Group Membership and Process

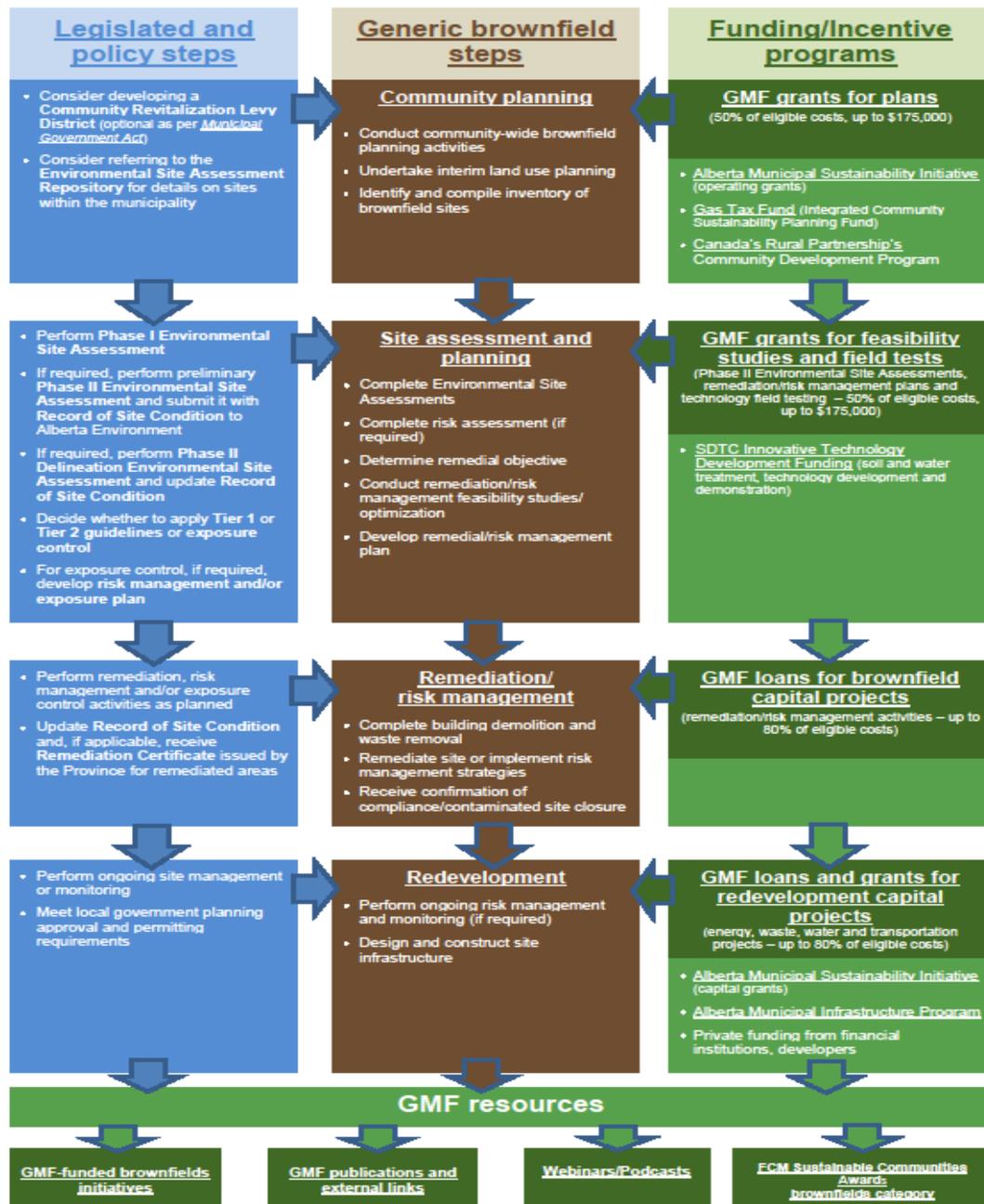
Organization	Representatives
Alberta Association of Municipal Districts and Counties	Kate Hovland Tasha Blumenthal
Alberta Environment and Water	Kem Singh Martijn Groen Norman Sawatsky
Alberta Municipal Affairs	Joe Petrie
Alberta Urban Municipalities Association	Rachel Boccock Ray Romanetz
Canadian Home Builders Association	Joan Maisonneuve
Canadian Petroleum Products Institute	Ian Tait
City of Calgary	Paul Leong Tim Haufe
City of Edmonton	Dave Lapp Mike Mellross
Environmental Services Association of Alberta	Jeff Dirks Tyler Barkhouse
Federation of Canadian Municipalities	Stephanie Bohdanow
Urban Development Institute	Torrey Swan Phil Wareham
<i>Facilitator</i>	<i>Bill Page</i>

The validity and success of the Working Group can be attributed to having representation from a large variety of stakeholders whose representatives met nine times as a full group, and many more times in sub-groups to work on particular recommendations and to research data. The report has been developed using a consensus approach.

The Working Group received significant information from past reports that assisted in identifying and shaping its recommendations. A multi-jurisdictional study conducted for Alberta Environment and Water provided an update on approaches being undertaken across Canada and around the world. Previous reports on brownfield redevelopment, including the Contaminated Sites Stakeholder Advisory Committee (CSSAC) report, served to inform the Working Group of previous recommendations and implementation activities.

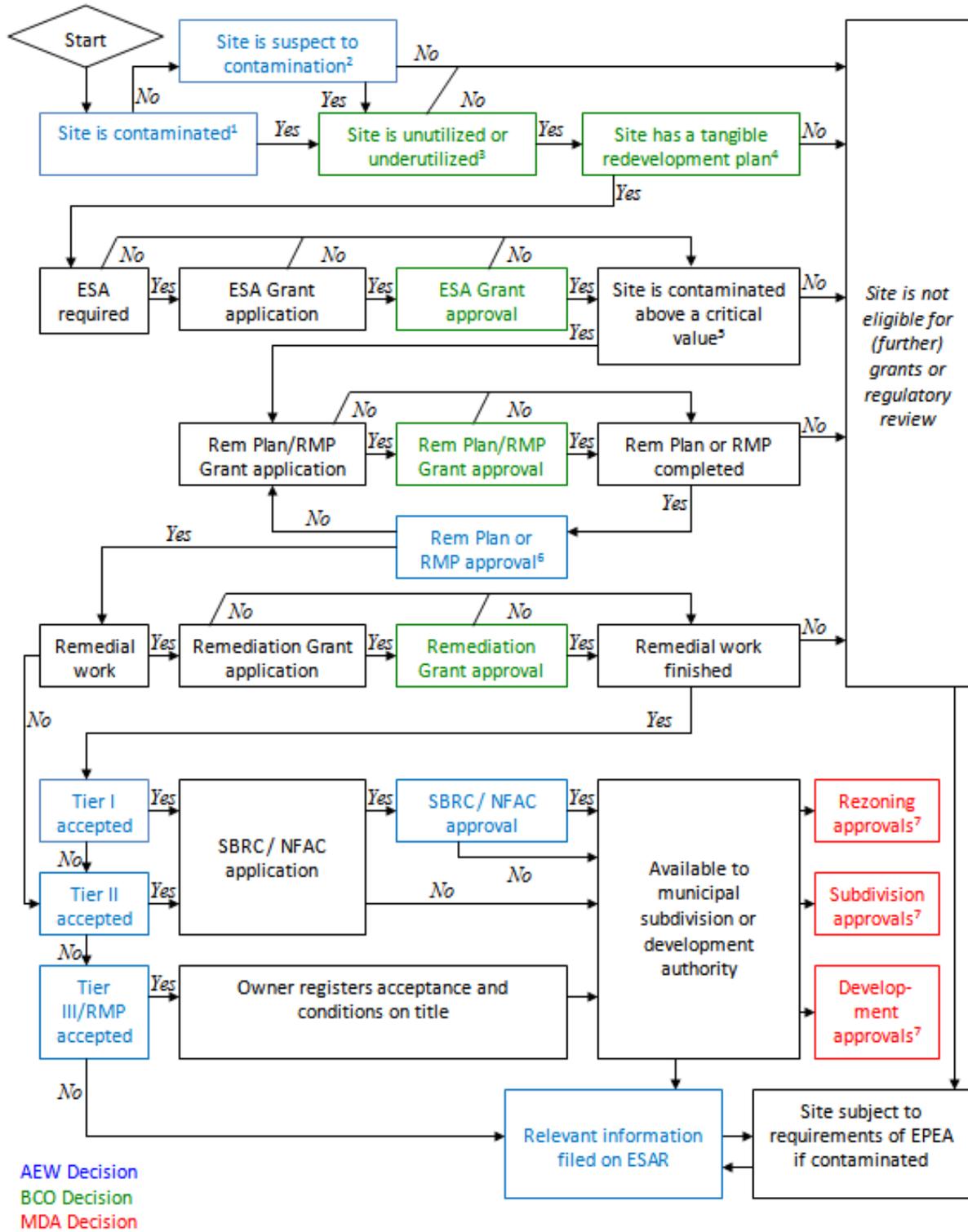
Attachment B – Alberta Roadmap from the Federation of Canadian Municipalities (FMC), March 2011

Alberta Brownfields Roadmap: Legislation and Funding Programs



GMF = Green Municipal Fund
Referenced from page 12

Attachment C – Brownfield Redevelopment Process



- ¹ Contamination refers to any substance that exceeds the limits outlined in Alberta's Tier 1 and Tier 2 guidelines
- ² Sites that are suspected to be contaminated (perceived contamination) are sites on which activities have been performed with high risk of contamination or sites with substance releases that have yet to be investigated.
- ³ Unutilized sites are sites that are not in use. Underutilized sites are sites with a redevelopment plan that entails an upgrade to the utility of the land in terms of rezoning.
- ⁴ Evidence to demonstrate whether there is a redevelopment plan for the site includes development plans, rezoning plans, or conditional agreements with a project developer. Municipal engagement by the owner/developer at this early stage to discuss conceptual plans for redevelopment is highly recommended and often supported by larger urban municipalities like the City of Calgary. Initial discussions with the municipality will benefit by identifying municipal requirements for planning approvals specific to brownfield sites such as land use, rezoning, subdivision, and development approvals. In addition it will provide an opportunity to identify if the site or area is a priority for the municipality for revitalization, redevelopment or densification or other community benefits as well as help to identify any constraints the municipality may place on site development. Initial discussions with the municipality will also be an opportunity for the owner/developer to solicit municipal support for regulatory and grant approval for the site and the identified community benefits of the proposed redevelopment to submit as part of an application for provincial brownfield grants and/or admittance into the AEW priority regulatory review process.
- ⁵ The critical value is set at Tier 1 and Tier 2 pathway exclusion
- ⁶ The municipal engagement by the owner/developer at this stage is highly recommended, often supported by larger urban municipalities or required if the proposed development project is based on a rezoning approval requirement or based on a plan to coordinate soil remediation with an early development stage like underground parking to be built in the open remediation excavation area that requires conditional planning approval(s) from the municipality. This is also an opportunity, particularly where risk management is being proposed, to consult the municipality concerning any issues that would result in a refusal of municipal approvals or constraints they may place on the rezoning or development based on the proposed remediation or risk management plan. This will also be an opportunity for the owner/developer to solicit municipal support for the remediation/redevelopment project to submit as part of an application for a provincial Remediation Grant.
- ⁷ At this stage there may be a municipal approval and/or a municipal level of incentives provided, depending on the municipal authority. These incentives can include tax releases or municipal grants.

Attachment D - What Do We Need a Remediation Certificate to Do?

Party	Needs
Developers	What is the condition for the whole site, not just an area – and what was done in the past, what is needed now or in the future?
Municipalities	<p>What is the condition for the whole site, not just an area – and what was done in the past, what is needed now or in the future? What is the land suitable for?</p> <p>Safety for people and environmental protection and enhancement.</p> <p>Party responsible for contamination attends to its remediation without a cost to the public.</p> <p>Enable the reuse of land – for as many uses as possible.</p> <p>Certainty of assessments, validity of information submitted, ability to project to entire site – process has been followed and information can be trusted.</p> <p>A system that works, effectively and with low administrative burden.</p> <p>Third party interests are addressed.</p>
Original Owner/Polluter	<p>Regulatory closure on the entire site.</p> <p>Removing need to do future assessments.</p>
Future Owner (e.g. home owner)	<p>Safe place to live.</p> <p>Ability to get mortgage and insurance.</p> <p>Liability management – do not want a barrier to selling property in future.</p> <p>Information that allows prospective purchaser to know history, status, risk management.</p>
Financial Institutions	Who holds responsibility for liability? Is there liability closure?
Provincial Government	<p>Safety for people and environmental protection and enhancement.</p> <p>Party responsible for contamination attends to its remediation without a cost to the public.</p> <p>Enable the reuse of land – for as many uses as possible.</p> <p>Certainty of assessments, validity of information submitted, ability to project to entire site – process has been followed and information can be trusted.</p> <p>A system that works, effectively and with low administrative burden.</p> <p>Third party interests are addressed.</p>
Environmental Consultants	<p>Standards to adhere to – process, analysis, reporting.</p> <p>Visibility to potential users – who is qualified, how to access.</p>

Attachment E – Glossary

Brownfield

A brownfield is considered an abandoned, vacant, derelict or underutilized property where past actions have resulted in actual or perceived contamination and where there is an active potential for productive community use including reuse and full redevelopment.

Environmental Site Assessment (ESA)

See ‘Phase 1 Environmental Site Assessment’ and ‘Phase 2 Environmental Site Assessment’.

Environmental Site Assessment Repository (ESAR)

The Environmental Site Assessment Repository is an online, searchable database that provides scientific and technical information about assessed and/or reclaimed sites throughout Alberta.

Exposure control

Exposure control involves preventing or controlling exposure to chemicals by use of administrative controls or physical or chemical barriers to prevent exposure to contaminants as alternatives to complete remediation.

No Further Action Certificate (NFAC)

NFAC stands for No Further Action Certificate and is a liability closure tool. Sites with contaminants that exceed the Tier 1 limits, but are found to have no potential for adverse effect based on a Phase 2 ESA, would be eligible for this certificate. This certificate would indicate that the site meets the standards equivalent to Tier 1.

Phase 1 Environmental Site Assessment

A Phase 1 ESA is a non-intrusive site assessment that is designed to gather a sufficient amount of information to estimate the likelihood that contamination may be present and if a Phase 2 ESA is required. A complete and adequate Phase 1 ESA will either:

- conclude that there is no reasonable evidence for suspecting the disposal or release of a substance that may cause, is causing, or has caused adverse effect and that no further assessment is necessary, or
- conclude that there is potential for a substance release, provide information that can direct a Phase 2 ESA or remediation activities at the site and where applicable, provide specific explanations of data insufficiencies that prevent the conclusion that substances were not released on the site.

Phase 2 Environmental Site Assessment

A Phase 2 Environmental Site Assessment is generally an iterative approach that includes an initial intrusive screening level sampling to determine whether a substance release has occurred at a site to a more detailed sampling event for complete delineation of contaminated soil and groundwater in the areas of potential concern when a substance release is present. A properly constructed Phase 2 ESA will determine, through intrusive sampling, if there is contamination

and what is the extent and approximate volume of contamination at a site of interest. A complete and adequate Phase 2 ESA will be able to conclude that either:

- the ESA has provided sufficient information that there is no reasonable basis to suspect a substance release has occurred at the property that has caused, is causing, or
- may cause adverse effect; or the ESA has confirmed a substance release has occurred at the site that has potential to cause adverse effect.

Remediation plan

A remediation plan is a plan for remediation to Tier 1 or Tier 2 standards. Once executed, sites with a remediation plan may be eligible for a Site-Based Remediation Certificate, which provides them with liability closure.

Remediation certificate

See SBRC and NFAC

Risk management plan

A risk management plan is a plan that includes controlling the exposure of substances to protect the environment. Once executed, the acceptance and conditions of the risk management plan will be registered on title.

Site-Based Remediation Certificate (SBRC)

SBRC stands for Site-Based Remediation Certificate and is a liability closure tool. Sites that have cleaned up contaminants to Tier 1 or Tier 2 standards would be eligible for this certificate.

Tier 1

Alberta Tier 1 Soil and Groundwater Remediation Guidelines are simple tabular values that incorporate conservative assumptions about soil and groundwater characteristics. Except in specific circumstances defined in the Alberta Tier 1 guidelines, contaminant concentrations below Alberta Tier 1 guidelines are considered not to have potential for adverse effect under Part 5 of the EPEA.

Tier 2

Alberta Tier 2 Soil and Groundwater Remediation Guidelines applies the same protection objectives as Tier 1 but allow for modification of the Tier 1 guideline value based on site-specific conditions. Alberta Tier 2 allows for three options that are explained further in the Alberta Tier 2 guidelines:

1. Modifying the Tier 1 guidelines based on exclusion of exposure pathways and receptors that may not be operable at the site.
2. Adjusting the Tier 1 guidelines using site-specific values for certain parameters using the same models and approaches are used as for the development of the Tier 1 guidelines and a limited range of parameter adjustments detailed in the Alberta Tier 2 guidelines.
3. Site-specific risk assessment.