

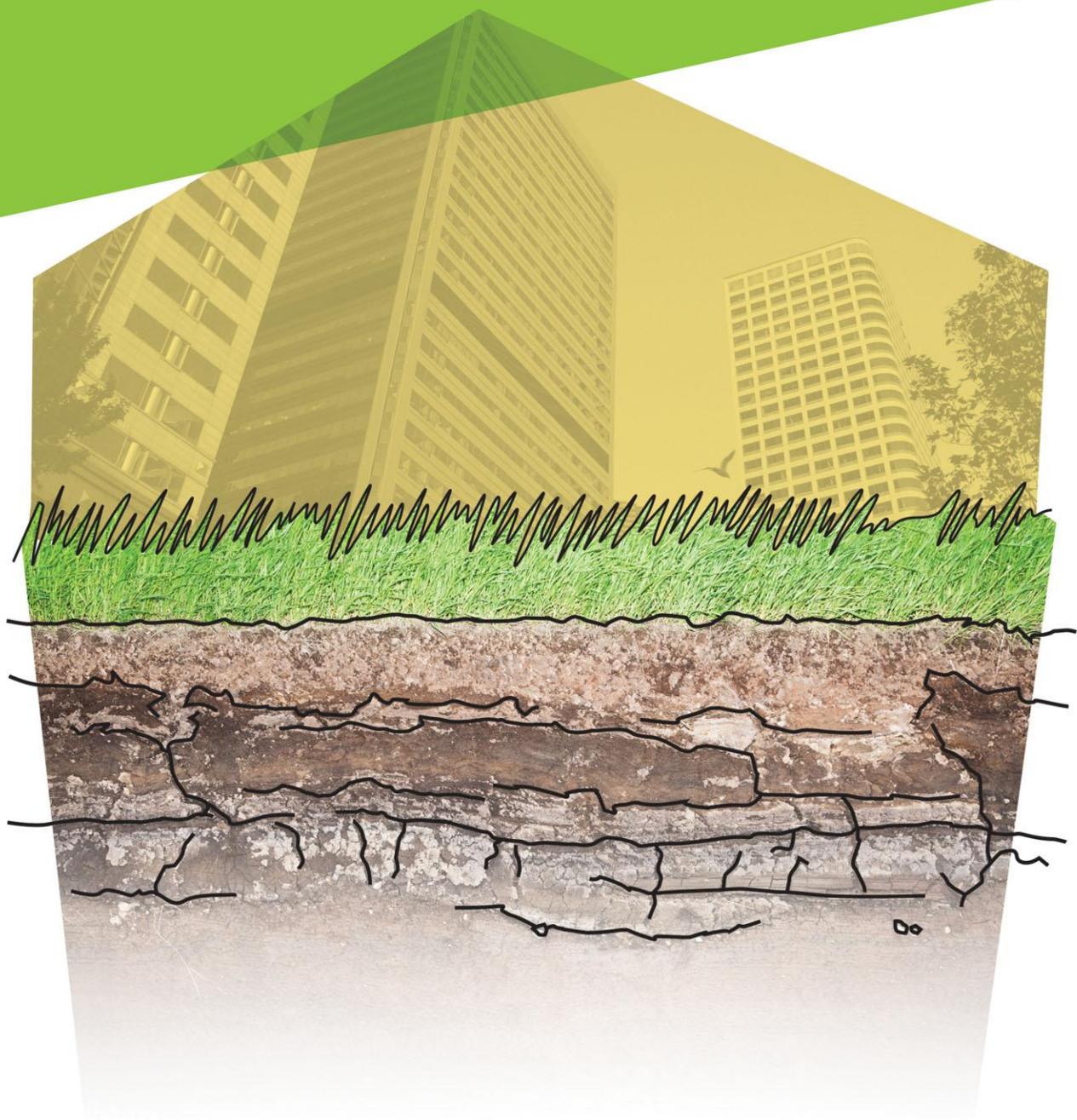


FEDERATION
OF CANADIAN
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GREEN MUNICIPAL FUND

Yukon Brownfield Roadmap 2014



INTRODUCTION

The Federation of Canadian Municipalities' (FCM) Green Municipal Fund™ (GMF) has produced this series of Brownfield Roadmaps to help municipalities and their private-sector partners better understand how to redevelop brownfields in their communities. The roadmaps provide a high-level overview of the brownfield redevelopment process in each province and territory, and link each process step to relevant legislative requirements and potential sources of funding.

Developed in close consultation with provincial and territorial governments, each roadmap features an easy-to-follow path through:

- The generic brownfield redevelopment process — a description of the steps that are typically followed when redeveloping a brownfield site in Canada
- Provincial requirements — an overview of provincial legislation and policy requirements associated with each step in the process
- Funding and incentive programs — a list of relevant resources, such as GMF, that are available to support municipalities and their partners as they undertake brownfield redevelopment

The roadmaps feature a flowchart that summarizes the main activities and milestones, illustrates where the steps are connected, and links to further details in the document.

Visit [Revitalize Your Brownfields](#) for additional tools, guidance and resources related to brownfield redevelopment.

The information presented is current to the publication date and may not capture all relevant programs. Please contact the responsible organizations to verify up-to-date information.

NOTE: This document summarizes current provincial legislation and must not be regarded as a formal legal interpretation. Please refer to the identified legislation for complete details on legislative requirements, and seek legal advice if necessary.

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This publication is available on the FCM Green Municipal Fund website at www.fcm.ca/gmf under "Resources."

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Generic Brownfield Redevelopment Process

- Conduct community-wide brownfield planning and engagement activities
- Standardize and streamline approval processes for redevelopment proposals
- Consider interim land use planning
- Compile inventory of brownfield sites; track and showcase redevelopment progress

- Develop sustainable remediation/redevelopment plan
- Complete Environmental Site Assessments
- Complete risk assessment (if required)
- Determine remedial objective
- Conduct remediation/risk management studies/optimization
- Develop remedial/risk management action plan that includes sustainable approaches where possible

- Complete building demolition and recycle soil and waste where possible
- Remediate site or implement risk management strategies using sustainable approaches where possible
- Receive confirmation of compliance/contaminated site closure

- Perform ongoing risk management and monitoring as required
- Design and construct site infrastructure

Territorial Requirements

- Consider including a brownfield component in the Official Community Plan
- Identify contaminated sites in the community as per Public Sector Accounting Board standard PS 3260

- Perform required site investigations/assessments
- Determine allowable levels of contamination
- Prepare a Plan of Restoration

- Implement the Plan of Restoration
- Submit site closure report

- Perform ongoing site management and monitoring
- Meet local government permitting requirements

Funding and Incentive Programs

Green Municipal Fund (GMF) grants are available for sustainable neighbourhood action plans or community brownfield action plans (50 per cent of eligible costs; grant maximum of \$175,000)

GMF grants are available for feasibility studies and field tests (50 per cent of eligible costs; grant maximum of \$175,000)
 Other programs: Sustainable Development Technology Canada offers innovative technology development funding (soil and water treatment, technology development and demonstration)

GMF loans are available for brownfield capital projects (up to 80 per cent of eligible costs)

GMF loans and grants are available for capital projects in the energy, transportation, waste, and water sectors (up to 80 per cent of eligible costs)
 Also, consider obtaining private funding from financial institutions, developers

Generic Brownfield Redevelopment Process

This section outlines the steps that are typically undertaken in planning, assessing, remediating and redeveloping brownfield sites. Not all of the steps may be required for every project. Some steps are suggested best practices and some steps can be performed concurrently. The process is described using universal site remediation terminology.

Plan

Community-wide brownfield planning activities

This step includes planning activities associated with brownfield redevelopment, such as sustainable community plans, community improvement plans (CIPs), neighbourhood plans, brownfield redevelopment strategies, and stakeholder and community engagement. **Parties typically involved:** municipal planning department, planning consultants.

Standardize and streamline approval processes for brownfield redevelopment proposals

Municipalities should standardize and streamline approval processes to ensure that brownfield redevelopment proposals are treated in an efficient, consistent and timely manner. Long approval processes can have a significant impact on a project's bottom line and jeopardize its financial viability. The streamlining process should include consultations with stakeholders, such as the public and developers. **Parties typically involved:** municipal planning department, consultants.

Interim land use planning

Municipalities may consider undertaking interim land uses for sites that cannot be redeveloped immediately — for financial or other reasons. In this case, rather than leaving sites vacant, temporary or interim uses (such as parking lots, community gardens, or temporary commercial/industrial uses) could be more economically and socially beneficial to the community. However, the interim land use should not increase risks to human health and the environment, nor should it impede future

redevelopment to a desirable end use. **Parties typically involved:** municipal planning department, planning consultants.

Identification and inventories of brownfield sites

In some provinces and territories, information related to brownfields or contaminated sites is compiled into databases or site registries. These inventories may be made available to the public. Municipalities can reference this information to identify contaminated sites and create a municipal brownfield inventory. Municipalities can also use this information to showcase progress on brownfield redevelopment in their community.

Municipalities should also note that the standard on [Liability for Contaminated Sites, Section PS 3260](#), contained in the [Public Sector Accounting Handbook](#) of Chartered Professional Accountants Canada, comes into effect for fiscal periods commencing on or after April 1, 2014. Section PS 3260 contains standards for municipalities on how to account for and report a liability associated with the remediation of contaminated sites for which they are responsible. Specifically, it establishes when to recognize and how to measure a liability for remediation. To properly estimate and track the associated liabilities, municipalities may need to develop an inventory of contaminated or potentially contaminated sites. Careful consideration should be given to the scope of Section PS 3260. A liability generally results from contamination at sites that are no longer in productive use or contamination arising from an unexpected event, such as a natural disaster. The standard does not apply to liabilities associated with retiring long-lived tangible capital assets in productive use (e.g. operation of a solid waste landfill site). For more information, contact [CPA Canada](#). **Parties typically involved:** municipal treasury, property, planning, and engineering and works departments, auditors and provincial officials.



Study

Sustainable remediation and redevelopment

Sustainable remediation considers the full picture when making decisions about brownfield remediation and redevelopment projects. It ensures that all aspects of the project — from assessment to redevelopment — are managed in a way that optimizes and balances environmental, social and economic benefits. A range of remediation and risk management techniques may be considered, such as administrative controls (e.g. zoning and land use restrictions); physical barriers or ground covers (e.g. asphalt); in-situ techniques, which are applied in the ground or in water; and ex-situ techniques, which involve excavating contaminated soil or pumping out groundwater.

Environmental site assessments

Known or suspected contaminated sites must be assessed to determine the type, concentration, location and extent of contamination. This information is gathered by using specific contaminated site assessment approaches, usually performed in phases and with more detailed information collected in each phase. The phases are typically defined as follows:

- **Phase I Environmental Site Assessment:** a preliminary assessment to characterize a site by evaluating current and historical land uses or activities, potential areas of contamination, and surrounding land uses or activities.
- **Phase II Environmental Site Assessment:** a preliminary assessment during which field samples are analyzed to determine contaminant types and concentrations.
- **Detailed or Delineation Environmental Site Assessment:** In some cases, a more detailed assessment is performed to confirm contaminant types and concentrations, and to delineate contaminated areas.

Following the site assessment, the generic territorial remedial objectives (i.e. the concentrations of contaminants allowed in the soil or groundwater based on the

specific land use) should be reviewed to determine the feasibility of meeting these objectives. In some provinces, remedial objectives are called remedial or remediation standards or criteria. **Parties typically involved:** municipal engineers and planners, environmental consultants.

Risk assessment

If, based on the site assessment results, it is not feasible to meet the generic territorial remedial objectives, there is an option in most provinces to perform a detailed risk assessment to develop site-specific or risk-based remediation objectives. The risk assessment must demonstrate that the site-specific objectives will protect both the environment and human health to the same extent as the generic objectives, if those objectives could have been met. **Parties typically involved:** municipal engineers and planners, environmental consultants, risk assessors.

Remedial objective determination

The final remedial objectives for the site are determined in this step. These could be either generic remedial objectives set by the province or territory, or the equally protective site-specific or risk-based remedial objectives. **Parties typically involved:** municipal engineers and planners, environmental consultants.

Remediation/risk management feasibility studies/optimization

In this step, remediation or risk management options for the site are evaluated. This could entail a study evaluating the feasibility of various options based on available literature or based on past experience. It could also include an in-depth bench- or field-scale analysis to support the selection of a specific technology or method, or to optimize the operating parameters for a specific technology or method. **Parties typically involved:** municipal engineers and planners, environmental consultants, remediation contractors.

Remedial/risk management action planning

Based on the review of the remediation and risk management options applicable to and viable for the site, the final options are selected and a remedial action plan is developed to outline how these options will be implemented. Where [possible sustainable remediation or risk management approaches](#) should be used. **Parties typically involved:** municipal engineers and planners, environmental consultants, remediation contractors.



Remediate

Building demolition and soil and waste recycling

This step involves building and infrastructure demolition and soil and waste removal (e.g., utilities, roads, above-ground or underground storage tanks). Where possible soil and waste should be recycled, either on site or reused for other purposes.

Parties typically involved: municipal engineers and planners, environmental consultants, remediation contractors, waste management contractors.

Remediation/risk management implementation

In this step, the site remediation, risk management actions, or both, are carried out as described in the remedial action plan. Where [possible sustainable remediation or risk management approaches](#) should be used. These activities are performed until the contamination is removed, altered, contained or destroyed to meet the territorial remedial objectives or the site-specific, risk-based objectives. **Parties typically involved:** municipal engineers and planners, environmental consultants, remediation contractors.

Confirmation of compliance/contaminated site closure

This step results in official verification that the site has met the established remediation or risk management objectives. The regulatory documentation required at this stage typically states:

- whether the site meets the regulatory requirements
- whether ongoing monitoring is required
- whether continued risk management is required

At this stage, typically, the results of the remediation or risk management actions and the next steps for redevelopment are communicated to stakeholders and the community. **Parties typically involved:** municipal engineers and planners, environmental consultants, territorial officials.



Redevelop

Ongoing risk management and monitoring

Once remediation is complete or risk management activities have been implemented, long-term monitoring or risk management may be required, depending on the restrictions placed on the site. This could involve periodic sampling of soil or groundwater, or other restrictions placed on the site (e.g., limitations on excavation or on land use, or access controls). **Parties typically involved:** municipal engineers and planners, environmental and planning consultants, developers, construction contractors.

Design and construction of infrastructure

This step involves redevelopment activities, including the design and construction of infrastructure on the site. **Parties typically involved:** municipal engineers and planners, environmental and planning consultants, developers, construction contractors.

Territorial Requirements

This section outlines the key pieces of Yukon brownfields legislation and policy positions related to each generic step.

Key legislation and sources of information¹

- The [Environment Yukon Contaminated Sites](#) website contains extensive information about the management of contaminated sites, including the [Contaminated Sites Regulation](#) and a [Guide](#) to applying these regulations; as well as protocols, fact sheets and guidance documents about the various stages of site management.
- The [Aboriginal Affairs and Northern Development Canada \(AANDC\) Contaminated Sites Program](#). Under the Devolution Transfer Agreement (DTA) that came into effect on April 1, 2003, the Government of Yukon took province-like responsibility for managing the territory's public lands, water, mining and forestry, including contaminated sites. Large mine sites that have significant potential for unfunded environmental liability were identified in the DTA as Type II mine sites. The Government of Canada, through AANDC, continues to pay a share of the costs for cleaning up contaminated sites in the Yukon, but only when the activity causing the contamination occurred prior to April 1, 2003.

¹ NOTE: This document summarizes current territorial legislation and must not be regarded as a formal legal interpretation. Please refer to the identified legislation for complete details on legislative requirements, and seek legal advice if necessary.



Plan

Consider brownfield redevelopment opportunities in the Official Community Plan

The Yukon [Municipal Act](#) requires that the development an Official Community Plan, which includes information on future land uses and development within the municipality. As such, this document provides municipalities the opportunity to consider brownfield-related activities.

Identify contaminated sites within the community

As a result of the [Standard on Liability for Contaminated Sites, Section PS 3260](#), municipalities may need to develop an inventory of contaminated or potentially contaminated sites in order to estimate and track the liabilities associated with them. In developing the inventory, careful consideration should be given to the scope of the Section PS 3260.

Having an understanding of contaminated, or potentially contaminated, land within their community will also help communities plan for brownfield redevelopment

As per the [Contaminated Sites Regulation](#) the “determination” of a contaminated site is a formal review process performed by the [Environmental Programs Branch](#) (Standards and Approvals section). The Branch reviews all data on file to determine whether contamination exceeds regulated standards. A determined site is added to the Public Registry of Contaminated Sites. After a determination, sites with significant contamination may be "designated" under the Act. If designated, site proponents must submit a site assessment, work plan and Plan of Restoration prior to undertaking excavation, construction or demolition, or changing the land or

water use. Any work to be conducted on the site must also be authorized by the Minister of the Environment.

When planning for brownfield redevelopment, municipalities should gain an understanding of contaminated, or potentially contaminated, land within their community. Environment Yukon maintains the Public Registry of Contaminated Sites that contains information on reported contamination and spills in the territory. This information is available from the Environmental Programs Branch. Information on hazardous material spills is also collected by the [Yukon Spill Report Centre](#).



Study

Perform required site investigations/assessments

A two-step process is typically used to determine whether a site is contaminated:

- A site investigation (or Phase I assessment) compiles information about possible contamination, such as past and current activities and hazardous materials spills and handling practices, and provides a list of possible contaminants and their location.
- If areas of possible contamination are identified, a site assessment (or Phase II assessment) may be required. This step involves soil or water sampling and analysis in the affected areas for the possible contaminants identified in the earlier site investigation and delineating the area, depth and concentration of contaminants on the site.

Site investigation and site assessment reports can be submitted to Environment Yukon to confirm that the evaluations have been properly conducted and to obtain approval of the reports' recommendations.

Determine allowable levels of contamination

The [Contaminated Sites Regulation](#) contains soil and water standards for allowable levels of contaminants based on the risks they pose to human and environmental health. If site assessments identify contaminant concentrations that exceed these standards, the site is deemed to be contaminated. Most contaminated sites are remediated until they meet the regulated standards. For typical sites, this approach is simple, fast and relatively inexpensive. For other sites, where it may not be

practical to meet the standards, there are other options to achieve the same level of protection of human health and the environment:

- Site-specific numerical standards can be developed by adjusting the generic standards to fit the site's unique conditions.
- For sites with soil that has naturally high concentrations of heavy metals, remediation can be undertaken to meet the natural background contaminant concentrations.
- When existing models cannot adequately address a site's complexity, risk assessment can be used to determine what actual hazards are created by the contamination and what actions can be taken to reduce those hazards to acceptable levels.

Prepare a Plan of Restoration

Once the appropriate standards have been chosen, a Plan of Restoration (or remedial action plan) is developed to establish how the site will be remediated. The plan will include remedial strategies that generally fall into one of three categories: ex situ remediation, in situ remediation, or risk management.



Remediate

Implement the Plan of Restoration

Based on the Plan of Restoration, remedial and risk management activities are undertaken as per the [protocols](#) adopted by Environment Yukon under the authority of the *Contaminated Sites Regulation*. Under the Regulation, permits are required to:

- move contaminated material from one site to another (Relocation Permit)
- construct or operate a facility to treat contaminated materials (Land Treatment Facility Permit)
- implement site-specific clean-up standards (Risk-based Restoration Permit)

[Permit application forms](#) should be submitted to the Environmental Programs Branch.

Submit site closure report

When remediation work is complete, confirmatory sampling must be conducted to show that all contaminants have been removed or remediated. Depending on the nature of the site and the contamination, follow-up monitoring may also be required. A final report must be submitted to Environment Yukon so that the Public Registry of Contaminated Sites can be updated.



Redevelop

Perform ongoing site management and monitoring

In some cases, specifically if site-specific or risk-based criteria were used during remediation, land use restrictions may be registered on the land title and ongoing risk management, monitoring and control activities at the site may be required.

Meet local government planning approval and permitting requirements

Refer to the local municipality for building and other permitting requirements.

Funding and Incentive Programs

This section details funding and incentive programs shown in the flowchart on page 1:

- FCM’s Green Municipal Fund™ (GMF) brownfield funding opportunities
- Federal programs that fund some aspect of brownfield redevelopment



Plan

GMF grants for plans

Through GMF, FCM provides grants for plans, including community brownfield action plans (e.g. community brownfield strategies, community improvement plans or revitalization plans). FCM will provide up to 50 per cent of eligible project costs to a maximum of \$175,000. In most cases, GMF funding can be combined with federal and territorial funding.

Status: Currently accepting applications.

Contact:

Federation of Canadian Municipalities
Green Municipal Fund

1-877-997-9926 • gmf@fcm.ca

For more information: [FCM’s Green Municipal Fund](#)

to a maximum of \$175,000. In most cases, GMF funding can be combined with federal and territorial funding.

Status: Currently accepting applications.

Contact:

Federation of Canadian Municipalities
Green Municipal Fund

613-907-6208 • gmf@fcm.ca

For more information: [FCM’s Green Municipal Fund](#)



Study

GMF grants for feasibility studies and field tests

Through GMF, FCM provides grants for feasibility studies (including Phase II environmental site assessments and remedial action planning) and field tests for remediation techniques. FCM will provide up to 50 per cent of eligible project costs

Sustainable Development Technology Canada — Innovative Technology Development Funding

Sustainable Development Technology Canada (SDTC) is a federally funded, not-for-profit foundation. SDTC finances and supports the development and demonstration of clean technologies that provide solutions to issues of climate change, clean air, water quality and soil, and deliver economic, environmental and health benefits to Canadians. On average, SDTC funds 33–50 per cent of eligible project costs.

Status: Currently accepting applications.

Contact:

Sustainable Development Technology Canada
Screening and Evaluations Manager
613-234-6313

For more information: [Sustainable Development Technology Canada](#)



Remediate

GMF loans for brownfield capital projects

Through GMF, FCM provides loans for remediation and risk management activities at a brownfield site. Up to 80 per cent of eligible project costs are covered. In most cases, GMF funding can be combined with federal and territorial funding.

Status: Currently accepting applications.

Contact:

Federation of Canadian Municipalities

Green Municipal Fund

1-877-997-9926 • gmf@fcm.ca

For more information: [FCM's Green Municipal Fund — brownfields capital projects](#)



Redevelop

GMF loans and grants for redevelopment capital projects

Through GMF, FCM provides loans and grants for redevelopment activities related to energy, water, waste and transportation. Funding is provided for up to 80 per cent of eligible project costs. The loan maximum is \$10 million, and the grant amount is set at up to 20 per cent of the loan to a maximum of \$1 million. In most cases, GMF funding can be combined with federal and territorial funding.

Status: Currently accepting applications.

Contact:

Federation of Canadian Municipalities

Green Municipal Fund

1-877-997-9926 • gmf@fcm.ca

For more information: [FCM's Green Municipal Fund](#)

Private funding from financial institutions, developers

Municipalities should also seek information on private funding sources to assist with brownfield redevelopment activities.