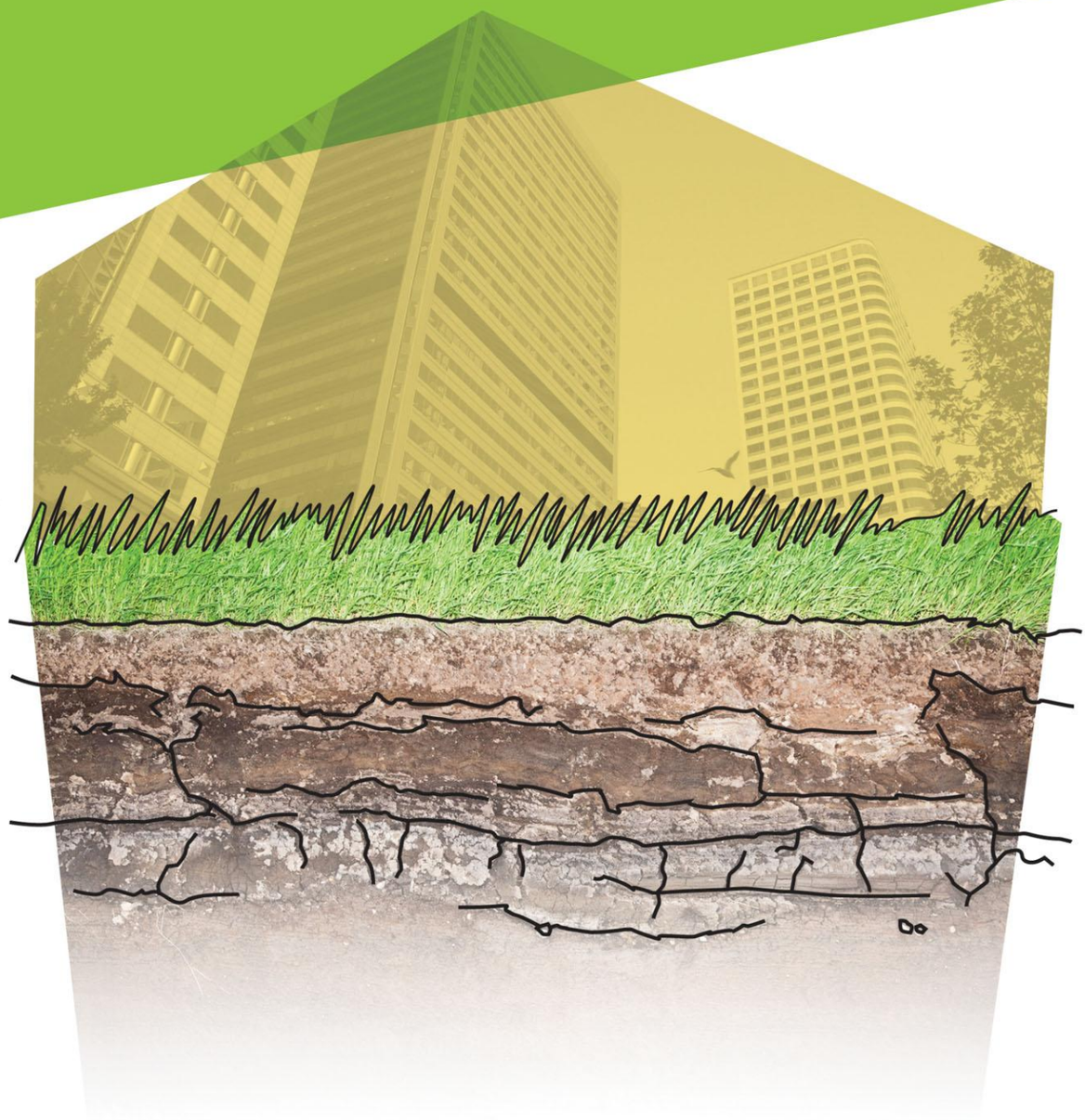
FCM FEDERATION OF CANADIAN MUNICIPALITIES FÉDÉRATION CANADIENNE DES MUNICIPALITÉS

GREEN MUNICIPAL FUND

Nunavut Brownfield Roadmap

2014



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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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NUNAVUT
2014 Brownfield Roadmap

	Generic Brownfield Redevelopment Process	Territorial Requirements	Funding and Incentive Programs
1 Plan	• 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	• Identify contaminated sites in the community as per Public Sector Accounting Board standard PS 3260	**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)
2 Study	• 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 the use of sustainable approaches where possible	• Prepare a Phase I Environmental Site Assessment • Prepare a Phase II Environmental Site Assessment • Prepare a Phase III Environmental Site Assessment (if required) • Determine land use and remediation criteria • Prepare a Remedial Action Plan	**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)
3 Remediate	• 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	• Implement the Remedial Action Plan • Submit site closure documentation	**GMF loans** are available for brownfield capital projects (up to 80 per cent of eligible costs)
4 Redevelop	• Perform ongoing risk management and monitoring as required • Design and construct site infrastructure	• Perform ongoing site management and monitoring • Meet local government permitting requirements	**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

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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.

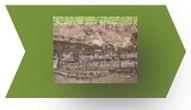
Interim land use planning

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, this plan should include the use of sustainable approaches. **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 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 provincial remedial objectives or the site-specific, risk-based objectives. **Parties typically involved:** municipal engineers and planners, environmental consultants, remediation contractors.

Redevelop

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.

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 Nunavut brownfields legislation and policy positions related to each generic step.

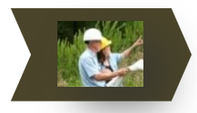
Key legislation and sources of information[1]

The Environmental Guideline for Contaminated Site Remediation (March 2009) provides the detailed steps to manage and remediate contaminated sites in Nunavut. The steps outlined in this Roadmap are based on the Guideline.

A Property Owner's Guide to Contaminated Site Remediation in Nunavut (August 2009) provides guidance for property owners regarding contaminated site remediation, as well as a series of questions and answers about site remediation.

The *Environmental Protection Act* contains general provisions related to contaminated land and the release of contaminants into the environment.

The Aboriginal Affairs and Northern Development Canada (AANDC) Contaminated Sites Program has direct responsibility for managing contaminated sites located on reserve lands, on federal lands north of the 60th parallel, and on any other Nunavut lands under AANDC's custodial responsibility. The management of these properties, contaminated mainly as a result of mining or military operations, is funded through AANDC's Northern Contaminated Sites Program and through the Federal Contaminated Sites Action Plan.



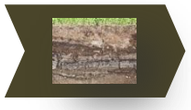
Plan

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 to plan for brownfield redevelopment. Some information related to site contamination can be obtained from the Nunavut Department of Environment, which compiles information on contaminant releases. Specifically, as per the *Spill Contingency Planning and Reporting Regulations*, contaminant spills in excess of specific quantities must be reported to the 24-Hour Spill Report Line.

[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.



Study

Prepare a Phase I Environmental Site Assessment

A Phase I Environmental Site Assessment (ESA) is used to identify actual and potential site contamination and must meet or exceed the **Canadian Standards Association (CSA) Standard Z768-01, Phase I Environmental Site Assessment**. Phase I helps to determine whether a property is contaminated by reviewing all available site reports, studies and other relevant documents; but does not include sampling, analysis or measurement of soil and water.

Prepare a Phase II Environmental Site Assessment

A Phase II ESA is used to confirm and characterize the substances of concern at the site must and meet or exceed the **CSA Standard Z769-00, Phase II Environmental Site Assessment**. Phase II builds on the Phase I results by sampling soil, water, and sometimes air, on a site to characterize and delineate the concentration of contaminants, and compare those levels to approved remediation criteria.

Prepare a Phase III Environmental Site Assessment (if required)

If sufficient data have been obtained at Phase II to characterize the site and the risks to human health and the environment, then the process may move directly to a Remedial Action Plan (if required). Alternatively, a Phase III detailed investigation may be necessary if Phase II results indicate that site contamination requires remediation. The Phase III investigation will obtain the information needed to develop a Remedial Action Plan.

Determine land use and remediation criteria

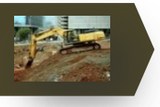
In Nunavut, remediation criteria are categorized for four types of future land use: agricultural, residential/parkland, commercial and industrial. These criteria are considered generally protective of human and environmental health for specified uses of soil at contaminated sites. The future land use determines the level of site remediation to be performed. The party responsible for the site reviews the assessment results and determines whether to remediate the site to generic criteria or to develop site-specific remedial criteria. There are three basic approaches to developing site-specific remediation objectives:

- Tier 1 (criteria-based approach) involves the direct adoption of remediation criteria
- Tier 2 (modified criteria approach) involves the adoption of remediation criteria with limited modifications
- Tier 3 (risk-based approach) uses risk assessment to develop remediation criteria

Site owners or responsible parties should consult with the Department of Environment while selecting the appropriate remediation criteria.

Prepare a Remedial Action Plan

Once remediation criteria have been determined for the site, the responsible party must prepare a Remedial Action Plan that reflects the preferred remediation method. The plan should support permanent remediation solutions, not solutions that require long-term management and monitoring. The Remedial Action Plan should be submitted to the Department of Environment, and other appropriate agencies, to confirm that all regulatory requirements have been met prior to implementation.



Remediate

Implement the Remedial Action Plan

Once all necessary approvals have been obtained, the responsible party implements the Remedial Action Plan and advises the Department of Environment if any activities deviate from the approved plan.

Submit site closure documentation

When the responsible party is satisfied that all requirements of the Remedial Action Plan have been met, a closure report is submitted to the Department of Environment. The report includes a description of all site activities and remediation methods, the quantity of contaminated material treated or disposed of, and all

analytical data gathered. If the remediated site complies with all appropriate criteria, management to Tier 1 or Tier 2 should result in an unconditional closure, which permits unrestricted future land use within the particular land use designation. In this case, the Department issues a letter advising the responsible party that no further remedial action is required. Where a Tier 3 risk-based approach has been used, land-use controls and restrictions and long-term monitoring may be required and will result in a conditional closure. In this case, the Department issues a letter stating that the management process remains ongoing and confirms what controls, restrictions and monitoring are required.

Redevelop

Perform ongoing site management and monitoring

In some cases, specifically if site-specific or risk-based criteria were used during remediation and a conditional site closure has been issued, ongoing site management and monitoring may be required during or after redevelopment.

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

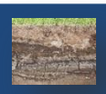
GMF grants for plans

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



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 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

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.