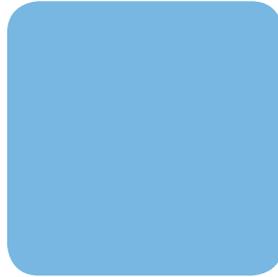




Brownfields



SUSTAINABILITY SNAPSHOT



FCM | Green Municipal Fund
Fonds municipal vert

The Federation of Canadian Municipalities (FCM) has been the national voice of municipal governments since 1901. FCM fosters sustainable communities enjoying a high quality of life by promoting strong, effective and accountable municipal government.

FCM's Green Municipal Fund™ (GMF) is a unique program that supports municipal initiatives across Canada that benefit the environment, local economies and quality of life. The Fund provides loans at rates that are far below what any municipal government can get on the market, as well as grants, education and training — all to support municipal initiatives that improve air, water and soil quality and protect the climate.

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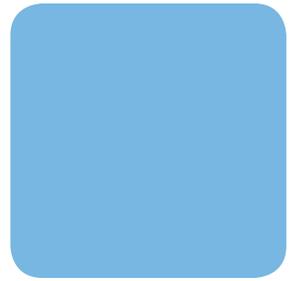
Ce document est aussi disponible sous le titre *Les sites contaminés*.



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What is a brownfield?

A brownfield is an abandoned, vacant, derelict or under-utilized commercial, industrial or institutional property where past actions have resulted in actual or perceived contamination or threat to public health and safety and where there is active potential for redevelopment.

Remediation: The key to unlocking brownfield potential

Because brownfield sites are often contaminated, they tend to be undervalued and underused. Once contamination is dealt with, municipalities gain valuable land that can be used for a wide variety of activities. The cleanup of a contaminated brownfield site is called “remediation.”

To remediate a site, the municipality or developer must assess it for contamination, identify the regulatory requirements for site safety and cleanup, develop and carry out the appropriate remediation or risk management plans, reassess the site and, if needed, implement an ongoing monitoring plan. The funding FCM provides to help municipalities and their partners through this stage increases the financial returns by substantially reducing costs. GMF financing is geared toward municipal governments, and sometimes private partners, undertaking municipal remediation projects.

Do you have a brownfield in your community? FCM's Green Municipal Fund can help.

GMF offers loans for brownfield remediation projects at rates far lower than any municipal government can get on the market. Our rates for municipalities are 1.5% lower than the Government of Canada bond rate and even further below market rates.

GMF also offers loans to private-sector companies or corporations wholly owned by a municipal government for brownfield site remediation at competitive rates, if they are partners in eligible municipal projects.

FCM's Green Municipal Fund also provides:

- grants for brownfield action plans, such as community improvement plans (CIPs)
- grants for site testing and remediation plans, including Phase II environmental site assessments, remedial action plans and risk assessments
- educational and training resources



City of St-Jean-sur-Richelieu, Québec

www.ville.saint-jean-sur-richelieu.qc.ca

Flanked to the north and south by Canadian Pacific and Canadian National railways, the IPC pigment site in St-Jean-sur-Richelieu is a former industrial site. The buildings are deteriorating and the storage of paint pigments has contaminated the soil and groundwater. The site also contains asbestos, hazardous waste stored in barrels, and underground and surface hydrocarbon reservoirs. With the help of a GMF loan, the municipality is remediating the site and will construct buildings on the property and use the remaining unoccupied grounds to centralize operations of its department of public works.



Benefits:

Remediating this toxic site will create a healthier, safe environment for residents and its subsequent redevelopment is expected to stimulate economic activity.

Brownfields across Canada

- As much as 25 per cent of the Canadian urban landscape is contaminated by previous industrial activities.
- Brownfield sites can be any size — from small, former gas stations to large chemical processing sites.
- There are an estimated 30,000 brownfield sites across the country.
- Municipalities own 2 to 10 per cent of contaminated sites in Canada and play an important role in the remediation of privately owned brownfields.
- Brownfield redevelopment can stimulate economic growth and revitalize the surrounding area.
- The first step toward redevelopment is remediation: cleaning up or containing soil and groundwater contaminants and deconstructing or demolishing derelict buildings.
- Leading municipalities are using innovative policies and programs to overcome challenges such as variable land values, the cost of remediation, regulatory complexity and liability issues.
- All across Canada, municipalities are taking action to remediate and redevelop brownfields and are reaping the economic, environmental and social benefits.

Sources:

Christopher A. De Sousa, "Urban brownfields redevelopment in Canada: the role of local government," *The Canadian Geographer* 50, 3 (2006): 392–407.

Research commissioned by FCM from Science Applications International Corporation (SAIC) Canada, November 2008.

We are pleased to benefit from the support of the Green Municipal Fund in the rehabilitation of the former IPC site. The project will allow us to revitalize the sector and create a safer environment for our residents while stimulating the city's economic activity.

**Mayor Gilles Dolbec,
City of Saint-Jean-sur-Richelieu, Québec**

The municipal role

Taking action to remediate and redevelop brownfield sites is an important step toward municipal sustainability. Specific municipal responsibilities vary depending on site ownership and the role municipalities are permitted to play under provincial legislation. Municipalities are responsible for remediating brownfields that they own, properties where title has reverted to the municipality, and some abandoned properties. They are also responsible for governance and planning activities related to both publically and privately owned brownfields.

Best practices in brownfield remediation and redevelopment

- Offer tax incentives and waive municipal fees.
- Offer grants for environmental and feasibility studies.
- Guide developers through regulatory processes and streamline approvals.
- Rezone brownfield properties to raise their value.
- Create an inventory of underutilized properties and include them in municipal planning.
- Adopt a team approach and engage developers and the public in the planning process.
- Collaborate with other municipalities and with the provincial and federal governments to streamline and clarify regulations and share success stories.
- Establish a reserve fund to support municipal brownfield projects.
- Redevelop brownfields using smart growth principles (concentrating growth in central cities to avoid urban sprawl, and developing compact, liveable communities) and a “triple bottom line” approach that integrates economic, environmental and social benefits.
- Use sustainable methods of demolition and cleanup, including natural, ecological forms of remediation and the reuse of building materials.



City of Calgary, Alberta

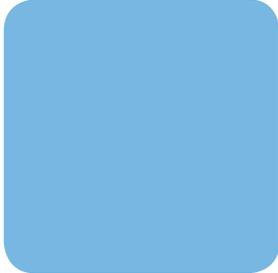
www.calgary.ca (search: rivers district)

The Rivers District, on the east side of Calgary, has been typified by urban decay and brownfield sites. With approval from the provincial government, the City of Calgary developed a community revitalization bylaw to create financial tools that support the redevelopment of the Rivers District. Calgary’s Community Revitalization Levy is an Alberta-built version of tax increment financing (TIF). TIF is a tool used by municipalities to help finance redevelopment. Incremental taxes derived from the redevelopment can be used to provide financial incentives for site remediation, new development and the rehabilitation of existing buildings. Calgary’s Community Revitalization Levy allows the city to provide up to 20 years of funding to meet the district’s economic, environmental and social objectives.



Benefits:

Public infrastructure projects in the district are expected to kick-start redevelopment in the area, including large-scale private development.



City of Toronto, Ontario

www.toronto.ca
(search: community improvement plan)

The City of Toronto has incorporated brownfield remediation and redevelopment into its official plan using Section 28 of the provincial *Planning Act*. This section authorizes municipalities to create community improvement project areas (CIPAs) and develop community improvement plans (CIPs). In Toronto, CIPs allow the creation of financial tools that support the rehabilitation of contaminated properties within designated areas. The benefits of remediation and redevelopment for the city will include increased property values and tax revenues.



Benefits:

The annual benefits of redeveloping all of Toronto's brownfields range from \$21 to \$31 million for industrial redevelopment and from \$16 to \$23 million for residential redevelopment.

The benefits of taking action on brownfields

- revitalize neighbourhoods
- stimulate the local economy
- catalyze development in the surrounding area
- boost employment and create jobs
- increase property values
- generate higher tax revenues
- build new housing and infrastructure
- reduce urban sprawl and resulting greenhouse gas emissions
- manage environmental risk
- clean up contaminated soil and groundwater
- improve public health and safety
- create public space
- reduce opportunities for dumping and crime

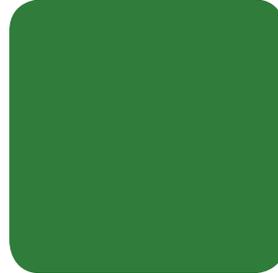
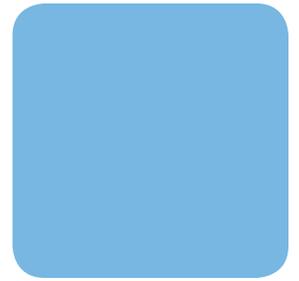
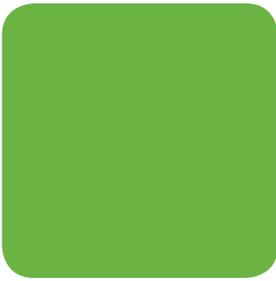
The cost of inaction

- blighted neighbourhoods
- lack of development and investment in the area
- lower property values
- unpaid taxes
- underutilized infrastructure
- landowner liability
- environmental damage
- contaminated soil and groundwater
- fire and safety hazards
- urban sprawl
- health risks
- illegal dumping
- vandalism
- enforcement and policing costs

Greening your brownfields

Make your new development a leading example of sustainability so that it never turns into a brownfield again.

To make your project more sustainable, consider using innovative remediation technologies and methods to reduce the environmental impact of remediation and restore land and water quality. Redevelop the site so that it uses less energy and water, creates less waste and is less dependent on cars. Promote green choices to developers, tenants and homeowners.



Did you know?

For every \$1 invested in brownfield redevelopment, an average of \$3.80 is invested in the economy.

Investment in brownfield redevelopment has a larger multiplier (or stimulation) effect on the Canadian economy than investment in any other sector.

The annual benefits of redeveloping all the brownfields in Canada's Census Metropolitan Areas range between \$4.6 and \$7 billion (cumulative benefit from multiple factors, including increased tax revenues and property values, reduced transportation and health costs, increased productivity, and preservation of agricultural land [greenfields]).

For every hectare of brownfield land redeveloped, a minimum of 4.5 hectares of greenfield land (undeveloped "green" space) is saved from being developed in an outlying area.

For every hectare of inner-city brownfield land redeveloped for residential purposes, as much as \$66,000 per year is saved in transportation costs (relative to equivalent greenfield development) and there is a corresponding reduction in greenhouse gas emissions.

Sources:

Christopher A. De Sousa, "Urban brownfields redevelopment in Canada: the role of local government," *The Canadian Geographer* 50, 3 (2006): 392-407.

Research commissioned by FCM from Science Applications International Corporation (SAIC) Canada, November 2008.

Cleaning up the Past, Building the Future: A National Brownfield Redevelopment Strategy for Canada, National Round Table on the Environment and the Economy, 2003.

Dealing with brownfields is a priority for communities of all sizes, in all regions. Cleaning up these sites can improve quality of life, stimulate economic development and turn an environmental liability into a community asset.

**Karen Leibovici,
GMF Council Chair and Councillor, City of Edmonton, Alberta**

Moncton, New Brunswick

www.moncton.org

The Moncton Shops site is 285 acres of land located in the centre of the city of Moncton, formerly used by CN Rail as its main locomotive repair shop. The Canada Lands Company (CLC Limited), a federal Crown corporation, assumed responsibility for the revitalization of the site, which was completed in 2000. CLC used sustainable techniques to decontaminate the soil, reused site materials such as asphalt and wood, and recycled metal scrap.



Benefits:

The city was able to develop this large piece of unused land in a number of ways that benefit the community. The city built 10 baseball diamonds, four soccer fields, two football fields and four ice rinks on the site. The rest of the site contains a residential area with 900 housing units surrounded by green corridors and a business and technical park.



Boisbriand, Québec

www.faubourgboisbriand.com/aboutus.html

Faubourg Boisbriand is a mixed-use development that combines residential, retail and office space. The development is located on the site of a former General Motors assembly plant. The site was contaminated with petroleum hydrocarbons and metals. With the site remediation complete, Faubourg Boisbriand L.P., a group of private developers working in partnership with Cherokee Investment Partners and the City of Boisbriand, is redeveloping the site. The redevelopment includes reuse and recycling of construction waste, energy-efficient street lighting, native plant species and surface water management systems.



Benefits:

This private–public effort will revitalize the region’s economy, provide high-quality urban real estate and generate property taxes for the City of Boisbriand four times higher than the amount collected prior to the demolition of the plant in 2004.

The future is green: Trends in remediation

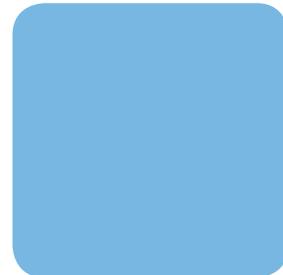
Using sustainable methods to deal with brownfield contamination can significantly increase the environmental and economic benefits of remediation. While some remediation projects still use traditional methods such as “dig and dump” (transporting contaminated soil to a landfill), more innovative, sustainable practices are growing in popularity. Many of these new techniques are more cost-efficient, use little energy and generate less waste, enhance wildlife habitat, improve soil stability and sequester CO₂ and other greenhouse gases.

Some innovative remediation options are available:

- On-site treatment of contaminated soil eliminates the need for transportation and saves landfill space.
- Bioremediation uses living organisms to clean up contaminated soil and water.
- Monitored natural attenuation uses natural processes to clean up pollution in soil or groundwater.

Our city’s competitive advantage is given even greater strength by a revitalized, clean and green waterfront where Toronto residents can live, work and play while enjoying a high quality of life.

Mayor David Miller, City of Toronto, Ontario



- Permeable reactive barriers are walls built below ground to clean up polluted groundwater by filtering harmful chemicals or changing them into harmless ones.
- Chemical destruction of contaminants uses methods such as oxidation to break down harmful chemicals.
- Heat or forced air can be used to extract contaminants from soil.

When applying remediation technologies, look for opportunities to enhance sustainability:

- Renewable energy and energy-efficient techniques can minimize costs and greenhouse gas emissions.
- Water can be conserved and recycled during the remediation process.
- Remote data collection techniques can reduce onsite field work.

For more information on remediation technologies, see the National Research Council of Canada’s Guidance and Orientation for the Selection of Technologies (GOST) website at <http://gost.irb-bri.cnrc-nrc.gc.ca>.

The remediation of this site is a turning point for our town. In these times of very tight municipal budgets, the assistance of the Green Municipal Fund is very useful.

**Mayor Céline Tremblay,
Municipality of Saint-Damien, Québec**

City of Hamilton, Ontario

www.investinhamilton.ca

The City of Hamilton developed a leading-edge community improvement plan to support the development of its brownfields. Situated on Hamilton’s waterfront along Lake Ontario, the Beaches site is a former gas station that is being remediated using bioremediation. Cleanup costs using traditional “dig and dump” remediation were estimated at over \$1 million, prompting the city to seek less costly alternatives. It selected bioremediation (using living organisms to clean up contaminated soil and water), which will cost under \$500,000.



Benefits:

Once site remediation is complete, 93 residential units will be constructed, bringing additional tax revenue to the municipality.



City of Victoria, British Columbia

www.docksidegreen.com

The Dockside Lands were purchased by the City of Victoria from the province in 1989 and were considered high-priority land for redevelopment due to their size, central location and proximity to the waterfront. Several attempts to develop the site failed because of risk and the cost of remediation. GMF supported a series of feasibility studies that provided information necessary to move the project forward. The City of Victoria chose Windmill West and Vancity as co-developers for Dockside Green and sold the property to these private developers, who formed Dockside Green Limited Partnership. Phase One of the redevelopment is now complete, and the project has won numerous awards and national recognition for its comprehensive and integrated approach to sustainability.



Benefits:

The Dockside Green development includes a wide range of features that integrate economic, environmental and social benefits, reflecting the “triple bottom line” principle of sustainability. As such, the site is now a benchmark for all new developments in Victoria and has influenced the city to adopt a green building policy for all of its buildings.

This blighted site has been a danger to the community for more than 30 years.... The rehabilitation and integration of this site into the community will be a catalyst for the rejuvenation of the entire surrounding area.

**Councillor Marguerite Ceschi-Smith,
City of Brantford, Ontario**

Additional Resources

FCM's Green Municipal Fund
www.fcm.ca/gmf

Canadian Brownfields Network (CBN)
www.canadianbrownfields.ca

aboutRemediation
www.aboutremediation.com/Toolbox/default.asp

Federal Contaminated Sites Program
www.federalcontaminatedsites.gc.ca/publications/index-eng.aspx

Montréal Center of Excellence in Brownfields
Rehabilitation (MCEBR)
www.cemrs.qc.ca

ReNew Canada Magazine
www.renewcanada.net

Canadian Mortgage and Housing Corporation (CMHC)
www.cmhc-schl.gc.ca/en/inpr/su/sucopl/sucopl_004.cfm

Sustainable Development Technology Canada
www.sdtc.ca/en/index.htm

National Round Table on the Environment
and the Economy
www.nrtee-trnee.com/eng/issues/programs/brownfields/brownfields.php

Guidance and Orientation for the Selection
of Technologies (GOST)
<http://gost.irb-bri.cnrc-nrc.gc.ca>

GMF welcomes your comments on all of our publications and resources. If you have comments or suggestions you would like to share, please contact us at gmf@fcm.ca or 613-907-6357.

We would love to hear from you!

