

Towns for Tomorrow
Condition Resources and Reference Guide
For Information Purposes Only
Last updated December 11, 2007

The following reference information has been developed for use by local governments who have obtained an approved Towns for Tomorrow grant. Each Recipient receives a Contribution Agreement with specific Additional Technical Reporting Requirements (Requirements) identified in Schedule D.4. The Recipient must meet these Requirements in order to satisfy the Contribution Agreement and to receive payment of claims. The Ministry of Community Services Municipal Engineering Services Branch (MESB) reviews documentation and approves that the Recipient has met each Requirement throughout the duration of the Contribution Agreement.

This document is for information purposes only, however it is strongly recommended that Recipients use this to ensure that Requirements will be met. Please note that this information has been developed as a guide to support best management practices and sustainable infrastructure, as more resources become available more information will be provided to this online reference guide.

These Requirements further ensure that the funded projects meet the purpose and objectives of the Towns for Tomorrow program; as well as MESB's mandate:

to promote, encourage, and support the development of sustainable infrastructure

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Small Community Infrastructure Sustainability “Community of Interest” Tool

The Ministry of Community Services, in partnership with the Ministry of Health and Ministry of Environment, have commenced the development of a website dedicated to Small Community Infrastructure, with the ultimate goal of creating a portal, or single point of contact, for information related to smaller community and smaller system issues. The site will be able to address drinking water, wastewater, and stormwater/rainwater management, inclusive of related subject areas such as groundwater, energy efficiency, First Nations issues, etc. This website is an excellent resource for Towns for Tomorrow grant recipients and should be utilized to help satisfy Contribution Agreement requirements.

The website has a stand-alone URL, but is hosted by the waterbucket.ca, and ultimately becomes a Community of Interest (COI) on the Waterbucket.ca homepage. Stemming from the need and desire to assist small communities manage and operate their environmental infrastructure (i.e. water, wastewater, rainwater, energy), the provincial government has committed to development of this website. The site has been designed to be user friendly, simple, and will hopefully become recognized as a valuable tool by small system operators/managers etc.

It is also important to acknowledge that the site also does not aim to re-invent what others have done, nor to step on their toes. Other sites are already up and running and a valuable resource in their own right. This COI will merely be the "portal" to those. By way of the "stories", readers will have their interest tweaked and be able to access relevant sites/links for more details. The "stories" style of the COI will ensure a good fit with the site's host, the waterbucket.ca website, which operates as a "magazine" styled portal. It is planned that eventually the COI will be launched as a national portal which will be tailored for each province and territory.

Towns for Tomorrow grant recipients and other users of the site are heavily encouraged to participate and contribute content. Some examples of desirable content is as follows:

- An article about some workshops your organization is hosting (or report on some that were hosted)
- An article about some research that your organization has recently done (or will be doing)
- An article about a best practices guide that you have read/developed which would be of use to others
- An article about something that your community (or another) has done with it's water systems
- An article about some new technology that you have used/know about
- An article about a website/tool/resource that you know about or have developed
- An article about something that impacts the way you manage, operate, or construct your water infrastructure
- An event

By clicking on the "Contribute an Article" box on the main pages for each section (water, wastewater, rainwater, energy) users will be brought to an optional signup page (can be skipped if only intending on adding one article) and then to a simple form for contributing a resource.

Stay tuned as this resource website grows and improves with user input and as new 'tools' are developed by the provincial government.

Please visit <http://bc.smallcommunityinfrastructure.ca>.

Contribution Agreement Resources and References

The following has been organized in relation to specific works; please review your own Contribution Agreement for specific requirements.

Click on specific sections to jump directly to them.

Requirements Pertaining to All Project Categories

Asset Management Reporting

Energy Related Works

Buildings – New construction and retrofits
Equipment
Corporate and Community Energy Planning
Additional Energy Related Resources

Drinking Water Works

Water Conservation Plans
BC Environmental Operators Certification Program (BCEOCP)
Ground Water Protection Regulation
Groundwater Planning
Well Closure Model Bylaw
Additional Drinking Water Works Resources

Wastewater Works

Wastewater Management
Additional Wastewater Works Resources

Rainwater (Stormwater) Works

Rainwater (Stormwater) Management

Requirements Pertaining to All Project Categories

Asset Management Reporting

Recipient are asked to submit a succinct asset management report that:

1. summarizes the current and intended future use of asset management approaches, techniques, policies and procedures, and;
2. demonstrates how the Recipient will be responsible for the maintenance, use and performance of the new infrastructure assets over the long-term.

The report should be a high level overview of the strategies that will be used to ensure the sustainability of the new infrastructure assets. The report should be no more than four pages in length and should include:

- A description of the current state of knowledge regarding the inventory, location, condition, age, book value and residual life of the existing infrastructure for the applicable system (e.g. for water projects, comment on the state of the complete water system).
- Identification of any software application that is used to manage attribute information (e.g. Geographic Information System, Capital Maintenance Management System).
- Highlights of any current policies, procedures or plans that support asset management.
- Description of any future or current initiatives that are underway which will improve asset management.
- Description of how maintenance and replacement is linked with the local government's overall long-term financial strategy (i.e. how does the local government ensure that sufficient funding is in place for replacement of an asset at the end of its life-cycle?).
- An outline of how asset management is being used to support and satisfy the Public Sector Accounting Board's reporting requirement for Tangible Capital Assets (i.e. PSAB 3150).

Where possible, the strategy should also:

- provide recommendations for improvements to asset management policies, processes, education and technologies etc.
- comment on the organizational, technical or other challenges that are impeding implementation of an asset management program (e.g. the strengths and weaknesses of a particular software application).
- provide suggestions for best management practices for asset management.

The submitted Asset Management Report will assist the Province in facilitating the development of local government asset management programs.

For more guidance on Asset Management Best Practices, please download InfraGuide's Decision Making and Investment Planning: Managing Infrastructure Assets:

http://www.sustainablecommunities.fcm.ca/files/InfraGuide/Decision_Making_Investment_Planning/Managing_Infrastr_Assets.pdf

Energy Related Works

Works included: construction of new buildings and retrofits to existing buildings, equipment, renewable energy works and projects categorized under the Environmental Energy Improvement Category.

In addition to the grant program's purposes and objectives, the energy related contract condition requirements support the provincial policy direction regarding climate change (See [2007 Speech from the Throne](#) and the [British Columbia Climate Action Charter](#)), and energy efficiency (See [BC Energy Plan](#)).

As such, projects will be required to be designed, constructed, and result in the optimization of energy sources and reduction in greenhouse gases.

Buildings – New construction and retrofits

Natural Resources Canada's Office of Energy Efficiency (OEE) provides support and information on [energy efficiency for new buildings](#), [energy efficient equipment](#); the [Energystar](#) program (identifies products that are among the most energy-efficient on the market); and an [energy screening tool](#) that can be used to estimate the energy performance of a proposed building design relative to the [Model National Energy Code for Buildings](#).

[Leadership in Energy and Environmental Design \(LEED\) Canada Green Building Rating System™](#) is a certification process that has four possible levels of certification - certified, silver, gold and platinum being the highest level.

[Green Buildings BC](#) is a provincial initiative that provides tools and resources to local governments who are completing retrofits to their buildings, which will significantly improve their energy and water efficiency, and reduce their greenhouse gas emissions.

[Building Owners and Management Association – Go Green](#) – is a national environmental certification program awarded to buildings demonstrating compliance with 10 key measures of good practice.

Equipment

Natural Resources Canada's Office of Energy Efficiency (OEE) provides support and information on [energy efficient equipment](#) and the [Energystar](#) program which identifies products that are among the most energy-efficient on the market.

Corporate and Community Energy Planning

Recipients receiving funding under the Environmental Energy Improvement Category must identify current and planned energy management strategies. This grant condition assists in ensuring that public investment is supporting the sustainability of communities from an energy perspective.

A Corporate Energy Plan focuses on the local government energy direction for its buildings, infrastructure, equipment, fleet management, etc. It can be included as a component of a community energy plan.

A Community Energy Plan focuses on a comprehensive and integrated approach that looks at the long-term energy direction of a community.

In addition to the following grant conditions:

- Current and planned corporate and community strategies that support energy efficiency and renewable energy (e.g. building audits and retrofits, energy reduction targets, sewage heat recovery, building design, fleet vehicle replacement program, etc.);
- Current and planned mitigation and adaptation strategies to address climate change (e.g. reducing energy consumption, improved transportation options, alternate stormwater design standards, etc);
- How these strategies/initiatives will be implemented (e.g. schedule, funding, responsibility etc.); and
- Link these strategies to regulatory mechanisms, policies, and plans (e.g. [British Columbia Climate Action Charter](#)).

A corporate energy plan should also

- Identify energy consumption for all local government buildings, equipment, and fleet vehicles; and
- Establish an energy reduction target (e.g. reduction x number of kilowatt hours per year).

The [Community Energy Association](#) is a non-profit organization that provides support and resources on Corporate and Community Planning – such as [A Tool Kit for Community Energy Planning in BC](#).

Natural Resources Canada [Canmet Energy Technology Centre](#) is Canada's leading federal government S&T organization with a mandate to develop and demonstrate energy efficient, alternative and renewable energy technologies and processes. The [Sustainable Buildings and Communities group](#) supports municipal stakeholders and developers with the development and implementation of integrated sustainability plans and initiatives for their communities. See their *Community Energy Planning Guide – Volume 1* and *Volume 2* for more information on local government planning.

Additional Energy Related Resources

- [Ministry of Energy, Mines, and Petroleum Resources' Alternative Energy Branch](#) provides Provincial information and direction about alternative energy and energy efficiency.
- [BC Sustainable Energy Association](#) is a non-profit society that has a number of resources that support development and adoption of sustainable energy, energy efficiency and conservation in British Columbia.
- Energy providers such as [BC Hydro](#) and [Fortis BC](#) provide information and incentives to support energy efficiency

Drinking Water Works

Water Conservation Plans

Drinking Water and Wastewater Works

Water conservation planning and demand management practices are required as a grant contract condition of payment to ensure the most efficient use of the community water resource, an approach in keeping with the [Water Conservation Strategy for British Columbia](#).

As far as practical, a water conservation plan should be based upon the *United States [Environmental Protection Agency \(USEPA Water Conservation Guidelines\)](#)*. These guidelines provide sufficient options to suit any size of community.

Additional resources are:

- The '[WaterBucket](#)' webpage provides water conservation information pertaining to British Columbia local governments.
- The **Water Conservation Calculator (WC²)**, developed by the Ministry of Community Services is a useful tool for identifying the cost and potential savings of implementing various water conservation measures as well as for comparing those conservation measures to conventional supply side solution. The WC², also provides a good 'snapshot' of your entire drinking water system and enables the user to forecast future demands as well as mimic reductions in supply due to climate variability etc. To access the WC² contact MESB.

BC Environmental Operators Certification Program (BCEOCP)

Drinking Water and Wastewater Works

Classification of the water/wastewater facility by the [BCEOCP](#); and the to certification of operator(s) of the water/wastewater system to the level required by the BCOCP, is required to ensure that the ultimate efforts in public health and environmental protection from operation(s) staff are provided for both water and wastewater utilities throughout the Province. It also ensures that public investment in those facilities is protected.

The British Columbia Water and Waste Association ([BCWWA](#)) provides training programs for municipal water and wastewater treatment plant, water distribution, and wastewater collection operators leading to certification by BCEOCP. Details on other sources of educational and training materials are available from BCEOCP.

The most effective way to stay informed of industry developments is through BCWWA and its membership in parent organizations, such as the [American Water Works Association](#) (AWWA) and the [Water Environment Federation](#) (WEF). These international organizations set industry standards worldwide, keep their members on the leading edge of new developments in their industry, and provide opportunities for education, professional development, and recognition of peers and other professionals in similar fields throughout the world.

Ground Water Protection Regulation

Groundwater Works

Groundwater is an important source of drinking water. Groundwater grant conditions assist in ensuring that the ultimate efforts in public health and environmental protection are implemented and followed. This is in keeping with Provincial acts, regulations, guidelines, by-laws, standards and objectives enacted to ensure groundwater resource protection and sustainability.

Grant Recipients will be required to meet the minimum standards in the [Ground Water Protection Regulation](#) (GWPR). The GWPR deals with aspects of well construction that significantly enhance groundwater protection — i.e., installing effective surface seals around wells, securely capping and floodproofing wells, and permanently closing unused wells to protect groundwater quality. The GWPR also establishes the qualifications for well drillers and well pump installers and provides for a provincial registry of those possessing the qualifications.

Groundwater Planning

Groundwater Works

Groundwater planning is required as a condition of payment. A key component in protecting community well water supplies is the development and implementation of a well protection plan. A well protection plan contains practical, protective measures to minimize and prevent undesirable impacts from land use activities on the source of water for the community well. It is one barrier in the multi-barrier approach to drinking water protection.

As far as practical, the well protection plan should follow the Ministry of Environment and the Ministry of Health's [Well Protection Toolkit](#). The toolkit is a set of guidelines for a six-step approach on how a community can develop and put into place a well protection plan to prevent contamination of their well water supply.

Well Closure Model Bylaw

Well decommissioning or extension of a water system with private wells

Grant recipients are required to have a bylaw in place that addresses the disconnection and closure of existing private domestic wells on properties that have connected to a community water system. This further ensures the protection of groundwater sources and drinking water quality protection at the tap (as drinking water would only come from the one community system source, thus avoiding mixing of two

sources at the tap). It is recommended that the bylaw be modeled after the Well Closure Model Bylaw that is currently being completed by the Ministry of Community Services and Ministry of Environment. For more information contact MESB.

Additional Drinking Water Works Resources

- [British Columbia Drinking Water Protection Act](#)
- [British Columbia Water Act](#)
- [Ministry of Environment, Water Stewardship Division](#)
- [British Columbia Ground Water Association](#)
- [Recommended Standards for Water Works or Sewage Works \(Ten States Standards\)](#)

Wastewater Works

Wastewater Management

Recipients of wastewater projects are also required to meet conditions related to the operator certification and water conservation as described in the Drinking Water Works section above.

Additional Wastewater Works Resources

Sustainable wastewater management is key to infrastructure sustainability as well as environmental and public health. Recipients should utilize available guidelines and standards which can be found at the Ministry of Health's website http://www.healthservices.gov.bc.ca/protect/lup_regulation.html and Ministry of Environment's website <http://www.env.gov.bc.ca/epd/epdpa/mpp/msrhome.html>. Guidelines for developing Liquid Waste Management Plans are available at <http://www.env.gov.bc.ca/epd/epdpa/mpp/gfdalwmp.html>.

Best practices for wastewater are also available through Infraguide at http://www.sustainablecommunities.fcm.ca/Infraguide/Storm_and_Water.asp.

Rainwater (Stormwater) Works

Rainwater (Stormwater) Management

Demonstrating stormwater management strategies further ensures environmental and community protection. In addition to the grant condition requirements long-term integrated rainwater planning is recommended. [Stormwater Planning: A Guidebook for British Columbia](#) provides a framework for effective stormwater management. The stormwater planning guidebook — a new tool for local governments — presents a methodology for moving from planning to action that focuses on implementing early action where it is most needed. The guidebook approach is designed to eliminate the root cause of negative ecological and property impacts of stormwater by addressing the spectrum of rainfall events.

Rainwater management should also be linked with a watershed management approach (e.g. does the project affect drinking water sources or support natural hydrological processes). The [Water Balance Model](#) (WBM) is an internet-accessible decision support and planning tool designed to evaluate the feasibility and effectiveness of site level rainwater management solutions. The WBM is fast emerging as the tool of choice in making sustainable land development decisions because it demonstrates how to achieve a light 'hydrological footprint'.

Best practices for rainwater management are also available through Infraguide at http://www.sustainablecommunities.fcm.ca/Infraguide/Storm_and_Water.asp.