

FACT SHEET

Alternative Solutions Guide for Small System Reclaimed Water Reuse

The objective of this Fact Sheet is to provide information to stakeholders preparing proposals for alternative solutions requests for water reuse. The growing need for water conservation and more efficient use of water resources in Alberta has resulted in the development of small systems (serving single property) that use reclaimed water systems for other than toilet or urinal flushing, or sub surface irrigation. Reclaimed water consists of either wastewater or stormwater, which has been treated to a quality suitable for specific non-potable uses. These systems fall under the mandate of Alberta Municipal Affairs and the *Safety Codes Act*. These systems require an approved alternative solution as defined by the National Plumbing Code and can be accepted by a variance under the *Safety Codes Act*.

An application for variance under the *Safety Codes Act* must be submitted to the local authority having jurisdiction (AHJ) for the diversion of wastewater or stormwater that includes all details of treatment, operation, maintenance, including water quality. A separate second variance must also be obtained from the Technical Administrator (Alberta Municipal Affairs) for equipment required to operate the reclaimed water reuse system. Alternative solutions proposals are reviewed considering the objectives and intent of the plumbing code. In order to receive a variance, an alternative solution proposal shall demonstrate at least the minimum level of performance required by Division B in the National Plumbing Code.

Variations issued under the *Safety Codes Act* are intended as a means to authorize installations, processes, equipment, or actions that are not meeting the strict provisions of existing rules. Variations shall provide for an equal or greater level of safety to persons and property than that prescribed pursuant to the *Safety Codes Act*. The following issues must be addressed in an alternative solutions proposal for water reuse in order for equal or greater safety to be demonstrated:

- Justification that the treatment system is capable of meeting water quality standards established in CAN/CSA B128.3 Performance of non-potable water reuse systems.
- The local Municipality supports the proposed project and accept the proposed method of operating and maintaining the system so that the system is managed satisfactorily with monitoring and reporting on a regular basis to continuously meet water quality standards.
- The plumbing for non-potable water distribution systems comply with the plumbing code and other requirements under the *Safety Codes Act*.
- The system includes 'fail safe' mechanisms that allow for a backup supply if the reclaimed water system needs to be shut down, and allow for wastewater or effluent from the treatment equipment to be diverted to a public sewer or an approved on-site sewage system.
- If the reclaimed water system is to be used for subsurface irrigation, the supporting information must also demonstrate that the water will meet the quality parameters set out in the Alberta Private Sewage Systems Standard of Practice, 2015.

The following resources shall be consulted when developing alternative solutions proposals for the local AHJ and the Administrator:

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For more information, please call 1-866-421-6929 or visit www.municipalaffairs.alberta.ca.



1. Water Quality

- *Canadian Guidelines for Domestic Reclaimed Water for Use in Toilet and Urinal Flushing:*
http://www.hc-sc.gc.ca/ewh-semt/pubs/water-eau/reclaimed_water-eaux_recyclees/index-eng.php
- CAN/CSA B128.3 performance of non-potable water reuse systems

2. Regulations/Regulatory Pathway

- The local AHJ (i.e. Safety Codes Officer) is the only entity who can consider deviations (alternate solutions proposals) from codes identified under the plumbing code regulation.
- Only a Technical Administrator may issue a variance with respect to a product or equipment for plumbing.

3. Single Property Development Proposals

Single property activities identify permissible installations using non-potable water within the National Plumbing Code. Reclaimed water alternative solutions proposals require two separate submissions: one to the local AHJ and one to the Technical Administrator with Alberta Municipal Affairs for equipment. The applicant requires approval from the local AHJ and may be required to supply notification of approval or exemption from Alberta Environmental and Parks (AEP) to use certain natural source water (e.g., raw water, non-potable water, storm water, rainwater, etc.) and Alberta Health (AH). Application for Alternative solutions proposals shall contain the following information:

- Relevant treatment system design specifications and drawings signed and sealed by the professional engineer.
- Operation and maintenance plans, including monitoring parameters and frequency of monitoring and reporting.
- The source water (i.e., wastewater or stormwater) and intended end-uses of treated water must be clearly identified. Where the source water is stormwater as defined under the *Environmental Protection Act*, authorization from AEP for the use of the storm water in accordance with Water Act may be required.
- Evidence of collaboration with stakeholders including:
 - Documentation showing the local municipality (accredited or unaccredited) supports the proposed reclaimed water project and accepts responsibility to oversee the proposed method of operating, monitoring and reporting required for the system is carried out satisfactorily to ensure water quality standards are continuously met.
 - In cases where storm water is used as source water, Alberta Environment and Park (AEP) approval for use of source waters.
 - Alberta Health.
- Description and identification of a backup system in the event of system failure.

4. Multi-Property Development Proposals

If the design capacity of a reclaimed water reuse system involves more than one property, then AEP will become the lead approving authority for the system. The National Plumbing Code will still apply to plumbing systems within buildings. For such systems, the applicant must contact the regional offices of AEP where the project is located to obtain information relative to the type and extent of the project.