

## **INTERIM CCC/FAC REQUIREMENTS FOR STORMWATER REUSE IRRIGATION SYSTEMS**

To support the implementation of stormwater and rainwater reuse in Calgary, The City of Calgary developed Draft Standards for Stormwater and Rainwater Reuse in 2017. All active stormwater reuse systems are being treated as pilot projects to evaluate the approval processes outlined in the Draft Standards, and the implementation of such systems as a potential solution to volume control considerations. As these pilot projects proceed through the development processes, clarification has been requested by Industry for undertaking the construction completion certificate (CCC) and final acceptance certificate (FAC) processes.

In collaboration with BILD Calgary and NAIOP Calgary, The City has developed an interim CCC/FAC process. As the pilot projects are completed, and with input from industry, the long term CCC/FAC processes will be finalized within The City of Calgary Standards for Stormwater and Rainwater Reuse.

The stormwater reuse systems typically include the following components:

- Stormponds
- Pump house & treatment systems
- Distribution piping
- Park spaces
- Irrigation equipment within the Park spaces

### **Interim CCC/FAC:**



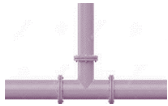


To leverage existing processes, the stormpond, park spaces and irrigation equipment will follow the standard CCC process, and will be completed as construction proceeds. The distribution piping will follow the linear storm pipe CCC process, however, due to the pressurized nature and additional drain valves, some additional verifications will be required. Similarly, the pump house and treatment system will go through a new CCC process once construction is completed. Water Resources and Parks will work together to inspect the pump house and treatment system to ensure it has been constructed as per approved plans. For all development agreements that include a stormwater reuse system, a new CCC/FAC line item for stormwater reuse will be added to the CCC/FAC tracking system.

For FAC, the overall stormwater reuse system will be required to demonstrate that the system is functioning as per design at full design capacity. For the FAC, the following must be demonstrated:

- The pump house, treatment, distribution piping and irrigation equipment within the adequate park space(s) are run continuously, at the design capacity set in the approved plans for a minimum duration of a full irrigation season (minimum 1 year maintenance period). Ideally, all receiving lands are online, but the City recognizes that all receiving lands for irrigation reuse may not be online when the pump and treatment systems are built, and are likely to be staged.
- Log reduction at the design capacity is confirmed through continuous monitoring parameters (Table 3 of the Draft Standards for Stormwater and Rainwater Reuse) for a minimum duration of a full irrigation season.
- End use water quality criteria (as outlined in Section 6.0 of the Draft Standards for Stormwater and Rainwater Reuse) is met on a continuous basis for a minimum duration of a full irrigation season.
- Distribution and irrigation equipment within individual Park spaces (municipal reserves) may be processed for CCC/FAC separate from the stormwater reuse system and follow the regular Parks FAC process if temporary potable water services (off of a municipal water main) are provided.
- All temporary potable water services installed at Park spaces are disconnected as per City of Calgary Standard Specifications for Waterworks Construction and any impact/damages to Park spaces are restored. All water service abandonments required post FAC will remain as development agreement obligations.

The stormpond FAC will be treated separate from the stormwater reuse system and will follow the regular FAC process after a minimum 3 year maintenance period.

Summary Table of CCC/FAC Requirements:

Component	 Stormpond (includes pump house intake pipe)	 Pump House & Treatment System	 Distribution Piping	 Park Space(s)	 Irrigation equipment
CCC	Normal Pond CCC	New CCC once construction is complete	To be part of the linear storm CCC	Standard Park CCC – requires power (ultimate A/C power, controller and solenoid or temporary DC powered controller and solenoid)	Part of the standard Park CCC – requires automatic operation
FAC	Normal Pond FAC (separate from reuse irrigation system)	To be part of the overall Reuse irrigation system	To be part of the overall Reuse irrigation system	Standard Park FAC – requires A/C power, controller and solenoids with ultimate reuse water source connected or temporary potable water service (PWS)  PWS disconnection (including removal of DCV and water meter) required later as part of reuse system FAC	Part of standard Park FAC – requires automatic operation

Development Agreement Timelines:

The City recognizes that the overall stormwater reuse system may not complete the CCC/FAC within the six year timeframe of the associated phase of development.

Calgary Approvals Coordination will consider deferring the construction obligation of the reuse pump house and treatment system to a subsequent active phase of development, if it is demonstrated that all three key components of the reuse system (adequate supply, constructed distribution system, and adequate irrigation demand) will not be ready, and the Area Structure Plan includes sufficient information regarding the obligation. To track the obligation, each tentative plan will be conditioned until the construction obligation is fulfilled.

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