

Purpose:

The purpose of this policy is to define:

- a. the conceptual requirements for stormwater management in the City;
- b. where municipal reserve land may be utilized for major drainage systems versus public utility or private land; and
- c. how and what parts of the stormwater management system will be funded through development off-site levies.

Policy Statement(s):

A. Major/Minor System

1. The storm drainage system where possible should be designed using a dual drainage concept consisting of a minor system and a major system:
 - a. **minor system**, comprised of pipes, manholes, catch basins, and outfall structures to convey run-off from snow melt and rainfall events to a receiving stream, lake, or pond without sustaining excessive surface ponding or surface flows for events up to a 1 in 5 year return period (in accordance with Alberta Environment Standards), where reasonably attainable;
 - b. **major system** comprises the street system, detention facilities, parkland, and any other routes required to convey run-off during rainfall events up to a 1 in 100 year return period (in accordance with Alberta Environment Standards), to the receiving water body.
2. Design standards for major and minor stormwater management systems are included in the City's current Design Guidelines. These standards are intended to prevent or reduce flooding that causes significant property damage where reasonably attainable.

B. Storage Facilities

The use of stormwater storage facilities may be required to reduce peak flow rates to downstream sewer systems and/or water courses, or provide a temporary receiving area for major drainage flows. Storage facilities are provided in many locations, such as parking lots, roof tops, sports fields, passive park areas, public utility lots, or man-made lakes, depending on unique site conditions. Where storage facilities are to be maintained by the City, they should be of the dry detention pond type and should be designated at the time of Subdivision Outline Plan approval to avoid conflicts with adjacent land uses. Where possible, they should also be designated on the Area Structure Plan.

C. Dry Retention Ponds

1. Dry detention ponds are generally situated in park-like settings and may incorporate sports fields or other facilities which are not prone to flood damage. Unlike wet retention ponds, which permanently retain a portion of the stormwater, dry ponds drain completely between rainfall events.
2. Dry ponds in residential settings should have gentle side slopes (generally no steeper than 5H:1V) and be aesthetically contoured and landscaped to provide an attractive feature for the subdivision. Where possible, dry ponds should be associated with other park areas to take advantage of the joint use ability of the facilities (e.g. extension of sports fields or passive park uses into the dry pond area).

D. Municipal Reserve/Detention Pond Joint Use

1. Where park facilities (e.g. sports fields, passive areas) can be placed within a dry detention pond without compromising the desired location or effectiveness of the park facility, a portion of the detention pond area may be designated municipal reserve (MR). The remaining area would generally be designated as public utility lot (PUL).
2. The area that may be designated municipal reserve shall be negotiated with the Community Services Division and will be based on the space which can be effectively used for the school and park facilities. A maximum of 1 ha of municipal reserve (MR) land may be utilized for stormwater storage during minor storm events (1:5 year frequency). Other minor system storage requirements must be contained within a

- public utility lot (PUL). Storage for major storm events (greater than a 1 in 5 year frequency) may extend onto other portions of the adjoining municipal reserve (school and park site) subject to the approval of the Director of Community Services. When seeking such approval, the developer should provide a preliminary site grading plan showing minor and major flood level contours for the pond.
3. Factors to be considered when utilizing municipal reserve lands for stormwater storage include:
 - a. Site location (e.g. central to neighbourhood);
 - b. Existing topography and vegetation;
 - c. Recreational and park facility requirements;
 - d. School and parking lot to be above major storage level;
 - e. Proposed site grading and water level contours for major and minor stormwater storage in relation to school and park facilities.

E. Funding of Stormwater Management Facilities

1. Where the developer is next in line, following a logical extension of services, he will be reimbursed from development off-site levies collected in the service basin, for constructing trunk storm sewers and stormwater detention ponds, if such facilities have been previously designated by the City as trunk storm management facilities and included in the calculation of the off-site levy rate for the service basin.
2. A storm sewer which would generally qualify as a trunk facility would have an internal diameter of at least 1200 mm, unless a stormwater detention pond has been used to reduce the downstream pipe size below 1200 mm (e.g. where a 1200 mm pipe would otherwise have been required); in which case the detention pond outlet pipe may also qualify as trunk for the size of pipe required to carry the pond(s) outflow only. Reasonable costs for supply and installation of the trunk sewer pipe and manholes, as well as related engineering fees, are normally reimbursable.

3. A detention pond, which would generally qualify as a trunk facility, would store more than 5,000 m³ of stormwater, cover more than 0.4 ha of area, and be required to reduce downstream flows to an existing pipe system or water course, for economical or environmental reasons.
4. Reimbursement may be made for reasonable costs of land, removing and replacing topsoil, excavating the detention area, constructing an outlet structure, seeding the public utility lot, and associated engineering fees, as required to construct the detention facility in an efficient, economical manner. The developer should excavate the detention pond as part of his subdivision pregrading operation. Whereas the developer can use the excavated material to fill low areas in his subdivision, he will be responsible for at least 50% of the cost of excavating the detention pond, as determined by the Engineering Department Manager.
5. Land costs for the detention pond area designated as public utility lot (PUL) may be eligible for compensation based upon the average market value of raw, unserviced land in the City. The rate of compensation for detention pond land will be set by the City's Director of Corporate Services and updated from time to time as required. Development levies will not be assessed against that portion of the detention pond area designated as PUL.

Authority/Responsibility to Implement:

The City Manager will ensure the policy requirements are met and updated as required.

Document History:

Approved: September 9, 1996
Administrative Revision (new template): March 9, 2010