

Drainage Problems in High Water Table Areas (D. Thiele)**Recommendation:**

That the April 19, 2005, Asset Management and Public Works Department report 2005PWD053 be received for information.

Report Summary

This report provides a response to an inquiry regarding drainage problems in high water table areas.

Previous Council/Committee Action

At the March 22, 2005, Transportation and Public Works Committee meeting, Councillor D. Thiele made the following inquiry:

“Increasingly, I have been receiving concerns from residents in regards to high water tables and sump pump problems. My questions are:

1. When and why was the bylaw change made to discontinue use of direct storm lines to each lot in a subdivision?
2. What is the cost per lot if the City returned to a separate storm drain per lot, and would that also increase the size of storm drains within new neighbourhoods?
3. What is Administration (specifically, Asset Management and Public Works and Transportation and Streets Departments) currently doing with regard to citizens experiencing problems with continued operation of sump pumps (recirculation), flooding and icing sidewalks?
4. What alternatives are there in these high water table areas, and how does the City deal with concerns and issues that arise from some of the concerns?”

Report

1. Question: *When and why was the bylaw change made to discontinue use of direct storm lines to each lot in a subdivision?*

Response: No bylaw required the installation of storm service to each residential lot. Prior and up to 1974, the City’s Servicing Standards Manual (SSM) was silent on the provision of storm services; although services were installed as the established practice. From 1976 to present, the SSM (now the Design and Construction Standards) explicitly allowed the elimination of storm service subject to geotechnical evaluations addressing groundwater conditions and methods of managing roof leader discharges. In the absence of documentation, it is reasonable to assume that the change was due to cost.

Prior to 1988, connection of weeping tiles to the sanitary sewer was the practice. However, in 1988 the Sewers Bylaw 7118 was amended to prohibit connection of weeping tiles to the sanitary sewer. The change was in reaction to the extensive basement flooding, as sanitary sewers were overloaded due to infiltration of surface water through weeping tile connections during storm events.

2. Question: *What is the cost per lot if the City returned to a separate storm drain per lot, and would that also increase the size of storm drains within new neighbourhoods?*

Response: In new subdivisions, the estimated cost of a storm service from the storm main to the house is about \$2,000 per lot. With storm services provided, the storm mains will be somewhat larger if roof leaders will be required to be connected.

3. Question: *What is administration (specifically, Asset Management and Public Works and Transportation and Streets Departments) currently doing with regard to citizens experiencing problems with continued operation of sump pumps (recirculation), flooding and icing sidewalks?*

Response: In response to complaints, Drainage Services determines the probable causes of the problems. Suggested solutions include sump pump discharge point relocation and lot grading improvements. In case of icing problems due to sump pump discharges, the owner is given the chance to enter into an agreement with the City that permits seasonal connection of the sump pump to the sanitary service.

Roadway Maintenance, Transportation and Streets Department, provides dry sand at community league sites for property owners to use for sidewalks; they are responsible under Bylaw #5590, Section 801, Part 8. Roadway Maintenance continually sands other walkways that the City maintains and is responsible for until the issue is resolved by the affected department.

4. Question: *What alternatives are there in these high water table areas, and how does the City deal with concerns and issues that arise from some of the concerns?"*

Response: Drainage Services' Foundation Drain Services Study, which was initiated to assess sump pump related problems and to recommend cost-effective solutions, is now in its final stage. Alternatives considered, among others, include:

- (i) installation of a dedicated third pipe system to collect and dispose of

discharges from weeping tiles by gravity,

- (ii) direct connection of weeping tiles to the storm sewers by gravity, and
- (iii) connection of sump pump discharge hoses to a dedicated third pipe system or to the storm sewers.

For new development areas, the introduction of the dedicated third pipe system is the preferred alternative, and any proposal by the developer for not providing such a system will have to be supported by a rigorous hydro-geotechnical report. Urban Development Institute, Greater Edmonton Chapter, and other stakeholders will be consulted on the recommendations of the study before they are implemented.

Background Information Available on Request

1. Different versions of the City of Edmonton Servicing Standards Manual
2. City of Edmonton Sewers Bylaw #7118
3. City of Edmonton Traffic Bylaw #5590.

Others Approving this Report

- R. Millican, General Manager, Transportation and Streets Department