

RE: DAMAGE RESULTING FROM THE 1983 JULY 25 RAIN STORM

MUNICIPAL MANAGER'S RECOMMENDATION:

1. THAT the recommendation of the Director Engineering be adopted.

* * * * *

TO: MUNICIPAL MANAGER 83 08 03

FROM: DIRECTOR ENGINEERING

SUBJECT: DAMAGE RESULTING FROM THE 1983 JULY 25 RAIN STORM

RECOMMENDATION:

1. THAT this report be received for information purposes.

REPORT:

The freak Summer storm which occurred on Monday afternoon, 1983 July 25 caused considerable flooding and damage in several areas throughout Burnaby. Information on the storm characteristics is very sparse due to the highly localized nature of the storm. However, it would appear a cold front system had passed through Burnaby with attendant well-developed cumulonimbus clouds, the result of which created a series of line squalls which deposited a very high volume of rain in localized areas. The deluge caused by the extremely high rainfall intensity far exceeded normal design parameters.

The storm resulted in numerous flooded basements and caused several Creeks throughout Burnaby to overflow. The creeks which were mainly affected were Buckingham Creek, the creek north of Canada Way flowing towards Burris Street, and the creek through Village delPonte.

The major creek damage was suffered in Buckingham Creek, where the creek channel upstream of Buckingham Drive appears to have been overtopped by the flow. The uppermost area of damage occurred at the bottom of a curve and possibly was contributed to by the change of direction. A second area of damage in this creek was probably caused by overtopping when the upper section debris moved to this location. The damage to the creek channel below Buckingham Drive is more extensive and is probably attributed to the high velocity of discharge from the 42" culvert under Buckingham. Flows of this magnitude, indicated by flood lines, completely submerged the energy dissipator and eroded the channel for some distance. The eroded material was deposited along the length of the channel bottom and into the settlement catchment area at the lower reaches of the rip-rapped section.

(cont'd)

As previously stated, information on the storm characteristics is very sparse because the closest recording station is too far removed from the Buckingham watershed area to accurately record a very localized Summer storm. It would appear that the Buckingham Creek catchment area suffered the brunt of the storm's intensity. Previous records show that a Summer storm which occurred on 1982 August 30 was of a 25 year return frequency. In that instance no damage was suffered to Buckingham Creek. The general cause of damage in this instance appears to be extensive runoff but recorded evidence has not yet been established.

Natural stream flow causes a process of continual erosion and is a consequence which is difficult to completely mitigate even when creeks are treated in a manner which would tend to inhibit this natural process.

Lesser, but similar, damage occurred in the Village del Ponte Creek which is of similar construction to Buckingham Creek. The creek north of Canada Way was obstructed with the resultant flooding of private property.

The 1983 Capital Budget contains brought forward funds in the amount of \$125,000 for watercourse flood control, the major thrust of which was to be in the area of Burnaby Mountain. The recent events dictate that the more emergent need is Buckingham Creek. This report gives further background information to the storm drainage Work Order which appears before Council.


DIRECTOR ENGINEERING

WCS:sp