

NANAIMO RIVER FLOODPLAIN

The following is a summary of the data, records and mapping referred to in the production of the floodplain mapping for the Nanaimo River.

1. Mapping: Topographic base mapping produced by the Mapping Section, Surveys & Resource Mapping Branch, Ministry of Environment, Project No. 83-138T, Oct. 1983, Scale: 1:5000, contour interval: 1&2 metres with spot heights, date of photography: 1980, 1982, no. of sheets: 9.
2. Aerial Photography: B.C. 82047: 35-38; 62-74; 84-89, date: Sept. 1982, approx. scale: 1:8000 and used for the Nanaimo River Survey Project 82-FDC-4, Aug. 1982. Photos filed in office of Surveys Subsection.

Aerial photo obliques numbered 74-1; 38-58, date: 15 or 16 of Jan. 1974, these photos cover some of the flooded areas of Nanaimo River and Haslam Creek. Photos filed in office of Planning Subsection.
3. Field Survey Information: Nanaimo River, Project No. 82-FDC-4, August 1982, volume 1 containing computer printout of river cross-sections and uncontrolled mosaic of the Nanaimo River showing location of cross-sections. Volume 2 containing photographs of cross-section sites.

Nanaimo River Project 83-FDC-15, one volume containing high water marks of the November 15, 1983 flood, photographs, historical data and an uncontrolled mosaic showing location of surveyed high water marks.
4. Hydrology Information: See Design File. Information is also available from Surface Water Data Publications, produced by Water Survey of Canada and from the Rivers Section, Wtr.M.B.
5. Calculated Flood Profiles: See Design File.
6. Miscellaneous: Photographs of tributaries to Haslam Creek, taken Jan. 6, 1984. All working drawings for the Nanaimo River floodplain mapping are retained by the Planning Subsection.
7. Possible Future Work: To complete the floodplain mapping of Haslam Creek it would be necessary to have additional surveyed cross-sections of the creek covering that section downstream of Highway 1 bridge.

NANAIMO RIVER FLOODPLAIN SUMMARY OF DATA

Index of Available Information

1. Mapping
3. Aerial Photography
3. Field Survey Information
4. Hydrology Information
5. Calculated Flood Profiles
6. Miscellaneous
7. Possible Future Work

HEC-2 CALCULATED PROFILES OF THE NANAIMO RIVER-
SUMMARY OF RUNS

1. Calibration Run - Q = 935 cms*

Object - to match HWM of November 15 & 16, 1983.

Result - unable to match, "Q" increased by 10%

- * Preliminary data from Water Survey of Canada, Nanaimo office indicated peak flow at station 08HB034, Nanaimo River near Cassidy to be 869 cms plus an estimated 66 cms for Haslam Creek = 935 cms. This flow was increased by 10% for Calibration Run #2.

2. Calibration Run - Q = 1030 cms at mouth
= 956 cms above Haslam Creek

Object - as above

Result - improved match - satisfactory for river model.

Determination of "N" factors was made at all 33 cms sections using on site photographs, cross section data and text guide titled: Roughness Characteristics of Natural Channels.

3. Plot Run with extensions, Q = 935 cms

Nanaimo River - 33 surveyed cross sections

Haslam Creek - 2 cross sections

Cross-section extensions and bridge plots completed in the office.

Object - to show complete cross section plot that then may be used for adjustments, such as flow distribution.

Result - an inspection of plots indicate a satisfactory input of data.

4. Plot Run with extensions, Q200 Inst. = 1830 cms.

Object - as above

This plot was used to graphically show flow distribution and make necessary adjustments.

Result - a satisfactory flow distribution was attained after adjustment of roughness coefficients and some flow areas controlled by the use of encroachments.

5. Calibration Run, Q200 Inst. = 1830 cms at mouth
= 1700 cms above Haslam Cr.

Object - to check profile after adjustments (see item 4).

Result - satisfactory.

6. Multiple Profile Run

Nanaimo River	-	At Mouth	-	at XS - 31
Q20	-	988 cms	-	918 cms
Calibration	-	1030 cms	-	956 cms
Q20 Inst.	-	1250 cms	-	1160 cms
Q200 Daily	-	1470 cms	-	1365 cms
Q200 Inst.	-	1830 cms	-	1700 cms

Flows obtained from "Frequency Analysis, Nanaimo River and Haslam Creek" (which see this file) prepared by Modelling Section, Water Management Branch.

Object - to obtain and compare a run of the required profiles and select the F.C.L. for floodplain mapping. The F.C.L. = the higher of the 1:200 yr. daily plus 0.61 metres freeboard and the 1:200 yr. instantaneous plus 0.3 metres freeboard, resulting in 90% of the latter being used.

7. Variable "N" Run - Q = 1470 cms at mouth
= 1365 cms at XS-31

Designated "N" factors x 0.8
x 1.0
x 1.2
x 1.4
x 1.6
x 1.8

Result - comparing the F.C.L., for the total 33 cross sections with the CWSEL of this run, resulted in:

"N" x 1.2 - 100% < F.C.L.
x 1.4 - 100% < F.C.L.
x 1.6 - 27% < F.C.L.
x 1.8 - 100% > F.C.L.