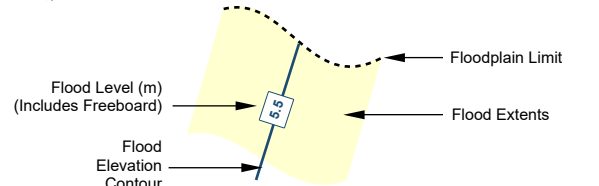
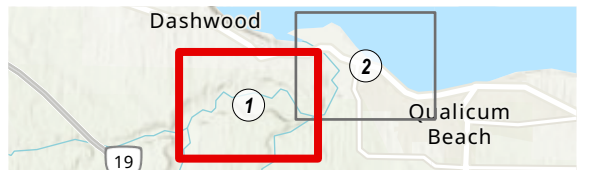


Legend

- Electoral Area Boundary
- Building Footprint (Approximate)
- Non-Standard Dike (Approximate)
- Watercourse
- Parks (RDN)
- Normal Water Surface
- Little Qualicum River Delta
- Undefined Coastal Flood Hazard Area



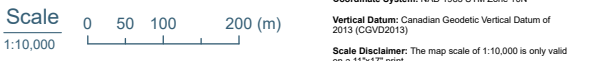
- Notes and Limitations**
1. This floodplain map is an administrative tool which depicts the estimated flood levels and floodplains limits for the designated flood event within the map area. Flooding may occur to levels above the estimated flood levels, and outside the estimated floodplains limits. The Regional District of Nanaimo does not assume any liability for the accuracy of the estimated flood levels and floodplains limits shown on this map.
 2. The flood levels and floodplains limits depicted on this map represent a combination of the river flood, coastal stillwater flood level, and river flood levels from two hypothetical scenarios that model a breaching of the non-standard dike. Flood levels and floodplains limits were derived from independently modelled flood scenarios. The highest flood levels for a given location should govern. Floodplains limits are not delineated for tributary creeks. This map should be considered together with complementary studies such as master drainage plans.
 3. The designated flood event for the Little Qualicum River depicted on this map is a 200-year return period peak instantaneous flood event having a statistical annual exceedance probability (probability of a flood event of equal or greater magnitude occurring in a given year) of approximately 0.5%. The river flow has been increased by 31% over the current (2020) value to account for projected climate change impacts. A freeboard allowance of 0.6 m has been added to account for: (1) hydrologic and hydraulic modelling uncertainties, (2) local hydraulic effects such as waves and surges, and (3) some degree of river and delta processes. However, the freeboard allowance does not account for significant changes in channel shape or location.
 4. The downstream coastal flood level reflects astronomical tides, a 200-year return period storm surge, and a freeboard allowance of 0.6 m, but does not include an allowance for wave effects. The coastal flood level has been increased by 1.0 m to account for the effects of relative sea level rise to Year 2100.
 5. The area designated as "Undefined Coastal Flood Hazard Area" refers to coastal floodplains beyond the river floodplains limits that have not been defined as part of this work.
 6. This map shows a delineation of the Little Qualicum delta. This area may be subject to additional processes and hazards.
 7. This map does not provide information on the potential for site-specific flood-related hazards such as bank erosion, aggradation, debris accumulation and sudden shifts in river channel alignment.
 8. Users should note the dates of base mapping, aerial photography, and ground or bathymetric surveys, as well as the date of map publication. Subsequent development or geomorphic changes may render map information obsolete.
 9. Topography used in the mapping is based on LIDAR data that may not accurately reflect the current ground elevation. For site-specific application, the flood level can be related to the ground elevation by topographic survey.
 10. When adopted by bylaw, the Regional District of Nanaimo is responsible for land use regulation within the floodplains limits depicted on this map. Information on floodplains management can be found in the BC Flood Hazard Area Land Use Management Guidelines.
 11. The alignment of the non-standard dike shown on this map was approximated based on survey data collected on May 13-14, 2021 and the alignment presented in the 1997 Regulatory Floodplain Map of the Little Qualicum River.
- Notes on Map Data, Data Sources and Dates:**
- Cadastral information supplied by ParcelMap BC / Land Title and Survey Authority of British Columbia (accessed September 30, 2020)
 - Property addressing, building footprints, watercourse, and landmarks supplied by Regional District of Nanaimo (accessed January 06, 2021)
 - The normal water surfaces shown on this map for watercourse features were obtained from the Province of British Columbia (accessed January 17, 2022 from Data BC) and were not delineated as part of this study. Current river alignments and their corresponding normal water surfaces may therefore differ from what is shown on this map. Historical migration zones for the Little Qualicum River were delineated as part of this study and are presented in its corresponding report but are not included on this map
 - Parks, Ecological Reserves and Protected areas supplied by DataBC and Regional District of Nanaimo (accessed January 06, 2021)
 - Road features supplied by Digital Road Atlas (accessed March 4, 2020)
 - Topography was collected by LIDAR. Sources and dates as follows: GeoBC (2019)



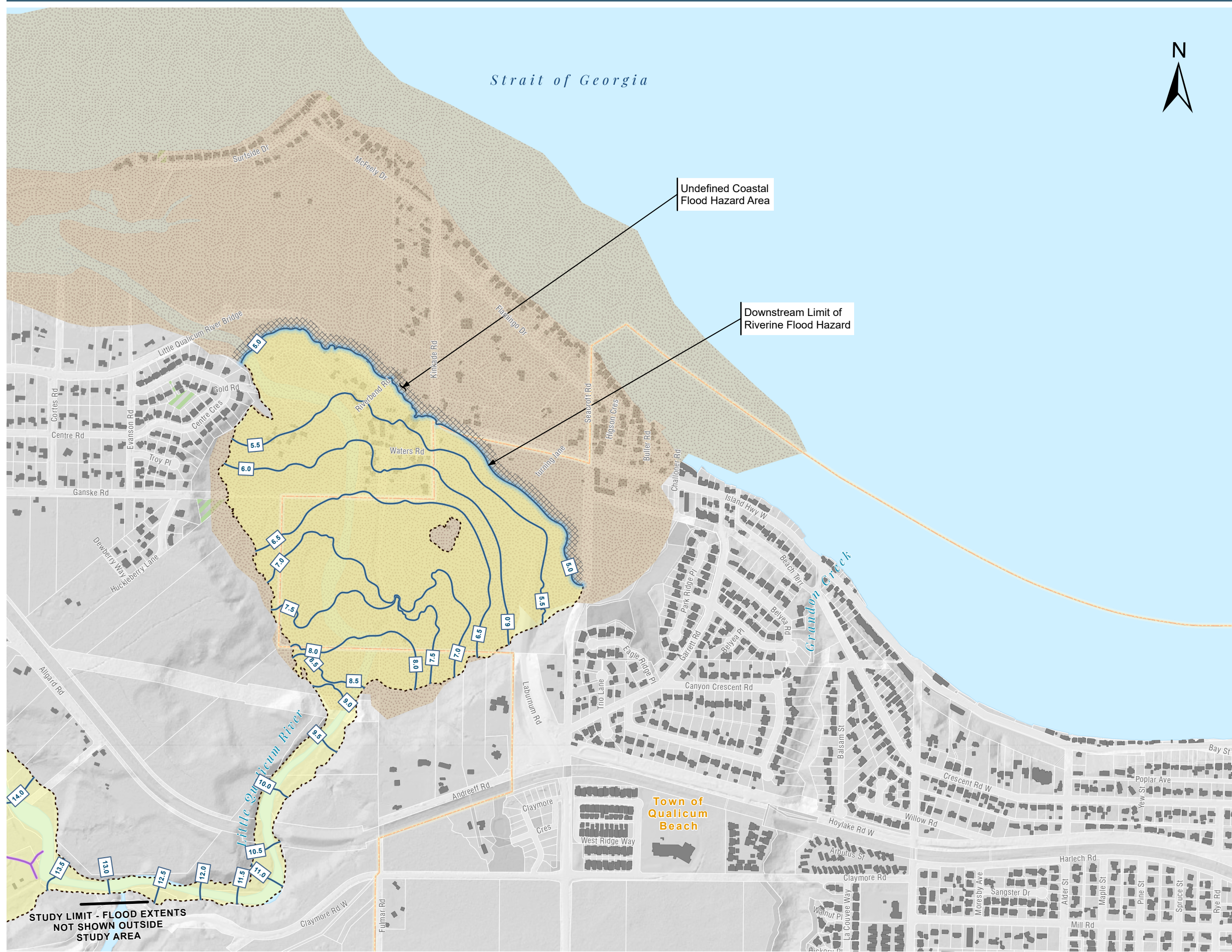
Little Qualicum River Regulatory River Floodplain Map

KWL Project No. 536.021 Figure A-1

Date July 22 2022

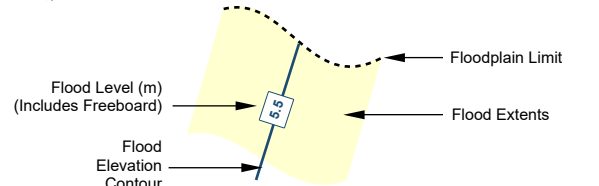


Coordinate System: NAD 1983 UTM Zone 10N
Vertical Datum: Canadian Geodetic Vertical Datum of 2013 (CGVD2013)
Scale Disclaimer: The map scale of 1:10,000 is only valid on a 11"x17" print.
Copyright Notice: These materials are copyright of Kerr Wood Leidal Associates Ltd. (KWL). The Regional District of Nanaimo is permitted to reproduce the materials for archiving and for distribution to third parties only as required to conduct business specifically relating to the Little Qualicum River Flood Mapping Project (2022). Any other use of these materials without the written permission of KWL is prohibited.
 Prepared By: JL
 Checked By: JTM



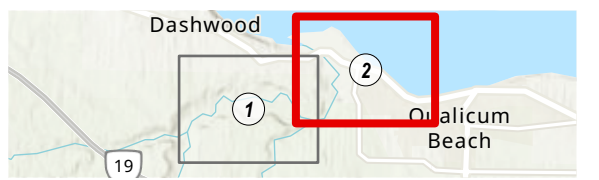
Legend

- Electoral Area Boundary
- Building Footprint (Approximate)
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- Watercourse
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- Undefined Coastal Flood Hazard Area



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 2. The flood levels and floodplain limits depicted on this map represent a combination of the river flood, coastal stillwater flood level, and river flood levels from two hypothetical scenarios that model a breach/raising of the non-standard dike. Flood levels and floodplains limits were derived from independently modelled flood scenarios. The highest flood levels for a given location should govern. Floodplain limits are not delineated for tributary creeks. This map should be considered together with complementary studies such as master drainage plans.
 3. The designated flood event for the Little Qualicum River depicted on this map is a 200-year return period peak instantaneous flood event having a statistical annual exceedance probability (probability of a flood event of equal or greater magnitude occurring in a given year) of approximately 0.5%. The river flow has been increased by 31% over the current (2020) value to account for projected climate change impacts. A freeboard allowance of 0.6 m has been added to account for: (1) hydrologic and hydraulic modelling uncertainties, (2) local hydraulic effects such as waves and surges, and (3) some degree of river and delta processes. However, the freeboard allowance does not account for significant changes in channel shape or location.
 4. The downstream coastal flood level reflects astronomical tides, a 200-year return period storm surge, and a freeboard allowance of 0.6 m, but does not include an allowance for wave effects. The coastal flood level has been increased by 1.0 m to account for the effects of relative sea level rise to Year 2100.
 5. The area designated as "Undefined Coastal Flood Hazard Area" refers to coastal floodplain limits beyond the river floodplain limits that have not been defined as part of this work.
 6. This map shows a delineation of the Little Qualicum delta. This area may be subject to additional processes and hazards.
 7. This map does not provide information on the potential for site-specific flood-related hazards such as bank erosion, aggradation, debris accumulation and sudden shifts in river channel alignment.
 8. Users should note the dates of base mapping, aerial photography, and ground or bathymetric surveys, as well as the date of map publication. Subsequent development or geomorphic changes may render map information obsolete.
 9. Topography used in the mapping is based on LIDAR data that may not accurately reflect the current ground elevation. For site-specific application, the flood level can be related to the ground elevation by topographic survey.
 10. When adopted by bylaw, the Regional District of Nanaimo is responsible for land use regulation within the floodplain limits depicted on this map. Information on floodplain management can be found in the BC Flood Hazard Area Land Use Management Guidelines.
 11. The alignment of the non-standard dike shown on this map was approximated based on survey data collected on May 13-14, 2021 and the alignment presented in the 1997 Regulatory Floodplain Map of the Little Qualicum River.

- Notes on Map Data, Data Sources and Dates:**
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 - Topography was collected by LIDAR. Sources and dates as follows: GeoBC (2019)



Little Qualicum River Regulatory River Floodplain Map

KWL Project No. 536.021

Figure A-2

Date July 22 2022

Scale 0 50 100 200 (m)
1:10,000

Coordinate System: NAD 1983 UTM Zone 10N
Vertical Datum: Canadian Geodetic Vertical Datum of 2013 (CGVD2013)



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Prepared By: JL
Checked By: JTM

STUDY LIMIT - FLOOD EXTENTS NOT SHOWN OUTSIDE STUDY AREA

Undefined Coastal Flood Hazard Area

Downstream Limit of Riverine Flood Hazard

Town of Qualicum Beach