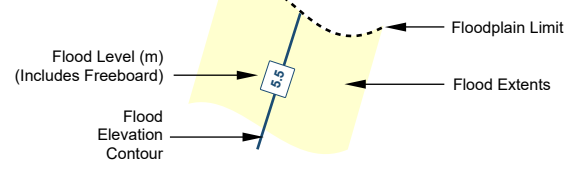


Legend

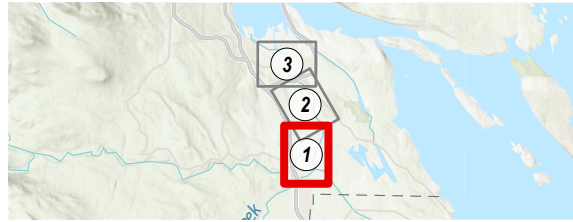
- Electoral Areas
- Snuneymuxw First Nation Boundary
- Building Footprint (Approximate)
- Non-Standard Dike (Approximate)
- Watercourses
- Parks (RDN)
- Normal Water Surface
- Nanaimo River Delta
- Undefined Flood Hazard Area



Notes and Limitations

1. This map was produced to support the "Regional District of Nanaimo Floodplain Management Bylaw No. 1469.03, 2022 (Schedule A)" using the mapping layers presented in Appendix A of the Kerr Wood Leidal Associates Ltd. report "Nanaimo River Flood Mapping Design Brief Final Report" (April, 2023).
2. This floodplain map is an administrative tool which depicts the estimated flood levels and floodplain limits for the designated flood event within the map area. Flooding may occur to levels above the estimated flood levels, and outside the estimated floodplain limits. The Regional District of Nanaimo does not assume any liability for the accuracy of the estimated flood levels and floodplain limits shown on this map.
3. 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 breaches of the non-standard dikes. 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 except for Haslam Creek. This map should be considered together with complementary studies such as master drainage plans.
4. The designated flood event for the Nanaimo 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 23% over the current (2021) 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.
5. 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.
6. 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.
7. This map shows a delineation of the Nanaimo River delta. This area may be subject to additional processes and hazards.
8. 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.
9. 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.
10. 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.
11. 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.
12. The alignment of the non-standard dikes shown on this map were approximated based on survey data collected on October, 2021/ May, 2022 and/or using recent aerial imagery.

- #### 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.
 - 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)



Nanaimo River Regulatory River Floodplain Map

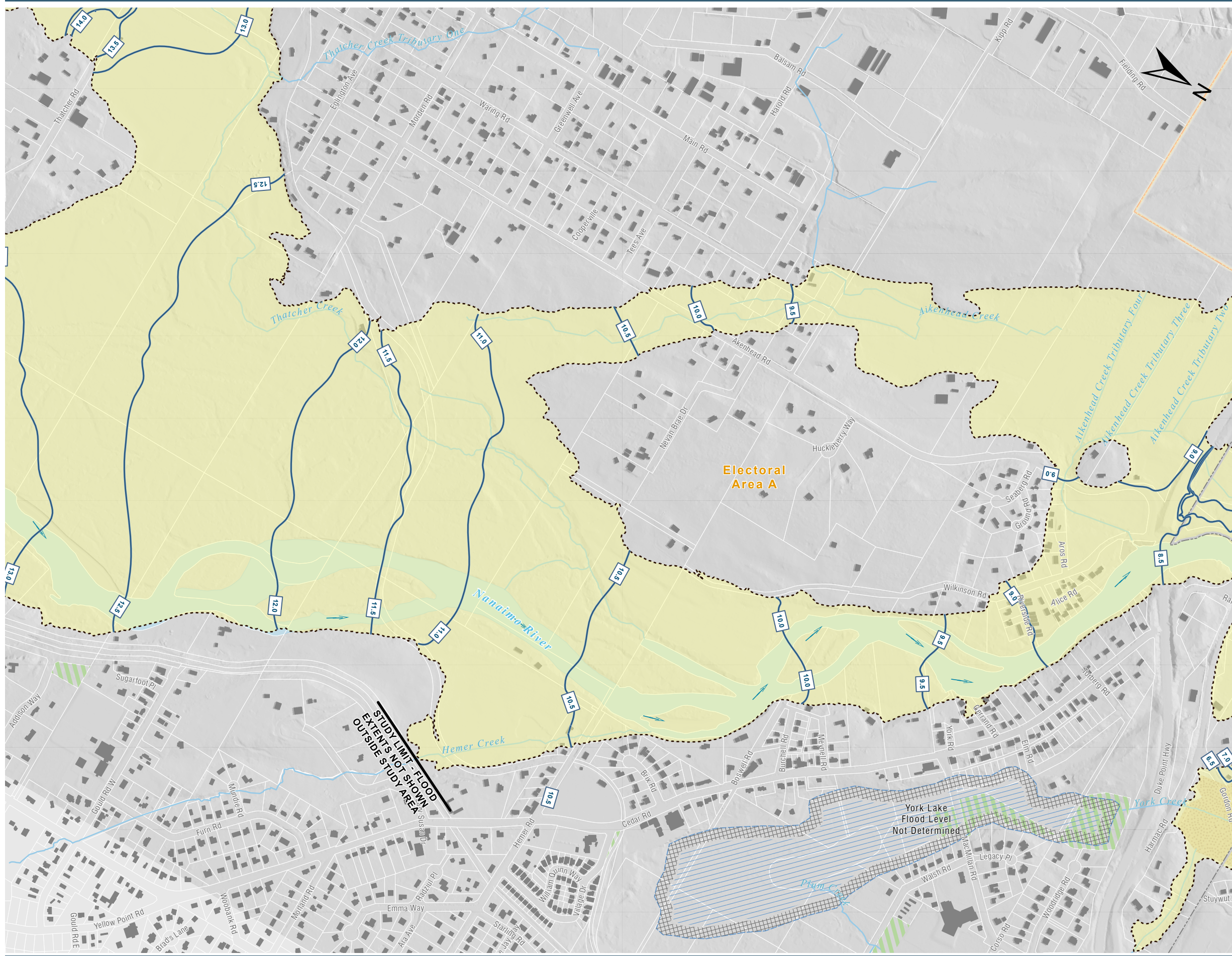
KWL Project No. 536.023 Schedule A

Date April 14 2023 Map 1 of 3

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



Coordinate System: NAD 1983 CSRS 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.
Prepared By: JL
Checked By: LG



Legend

- Electoral Areas
- Snuneymuxw First Nation Boundary
- Building Footprint (Approximate)
- Non-Standard Dike (Approximate)
- Watercourses
- Parks (RDN)
- Normal Water Surface
- Nanaimo River Delta
- Undefined Flood Hazard Area

Flood Level (m) (Includes Freeboard) →

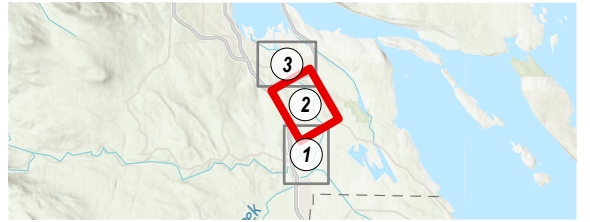
Flood Elevation Contour →

Floodplain Limit →

Flood Extents →

- Notes and Limitations**
- This map was produced to support the "Regional District of Nanaimo Floodplain Management Bylaw No. 1469.03, 2022 (Schedule A)" using the mapping layers presented in Appendix A of the Kerr Wood Leidal Associates Ltd. report "Nanaimo River Flood Mapping Design Brief Final Report" (April, 2023).
 - This floodplain map is an administrative tool which depicts the estimated flood levels and floodplain limits for the designated flood event within the map area. Flooding may occur to levels above the estimated flood levels, and outside the estimated floodplain limits. The Regional District of Nanaimo does not assume any liability for the accuracy of the estimated flood levels and floodplain limits shown on this map.
 - 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 breaches of the non-standard dikes. Flood levels and floodplain limits were derived from independently modeled flood scenarios. The highest flood levels for a given location should govern. Floodplain limits are not delineated for tributary creeks except for Haslam Creek. This map should be considered together with complementary studies such as master drainage plans.
 - The designated flood event for the Nanaimo 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 23% over the current (2021) 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 modeling 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.
 - 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.
 - 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.
 - This map shows a delineation of the Nanaimo River delta. This area may be subject to additional processes and hazards.
 - 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.
 - 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.
 - 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.
 - 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.
 - The alignment of the non-standard dikes shown on this map were approximated based on survey data collected on October, 2021/ May, 2022 and/or using recent aerial imagery.

- Notes on Map Data, Data Sources and Dates:**
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 - 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)



Nanaimo River Regulatory River Floodplain Map

KWL Project No. 536.023 Schedule A

Date April 14 2023 Map 2 of 3

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

REGIONAL DISTRICT OF NANAIMO

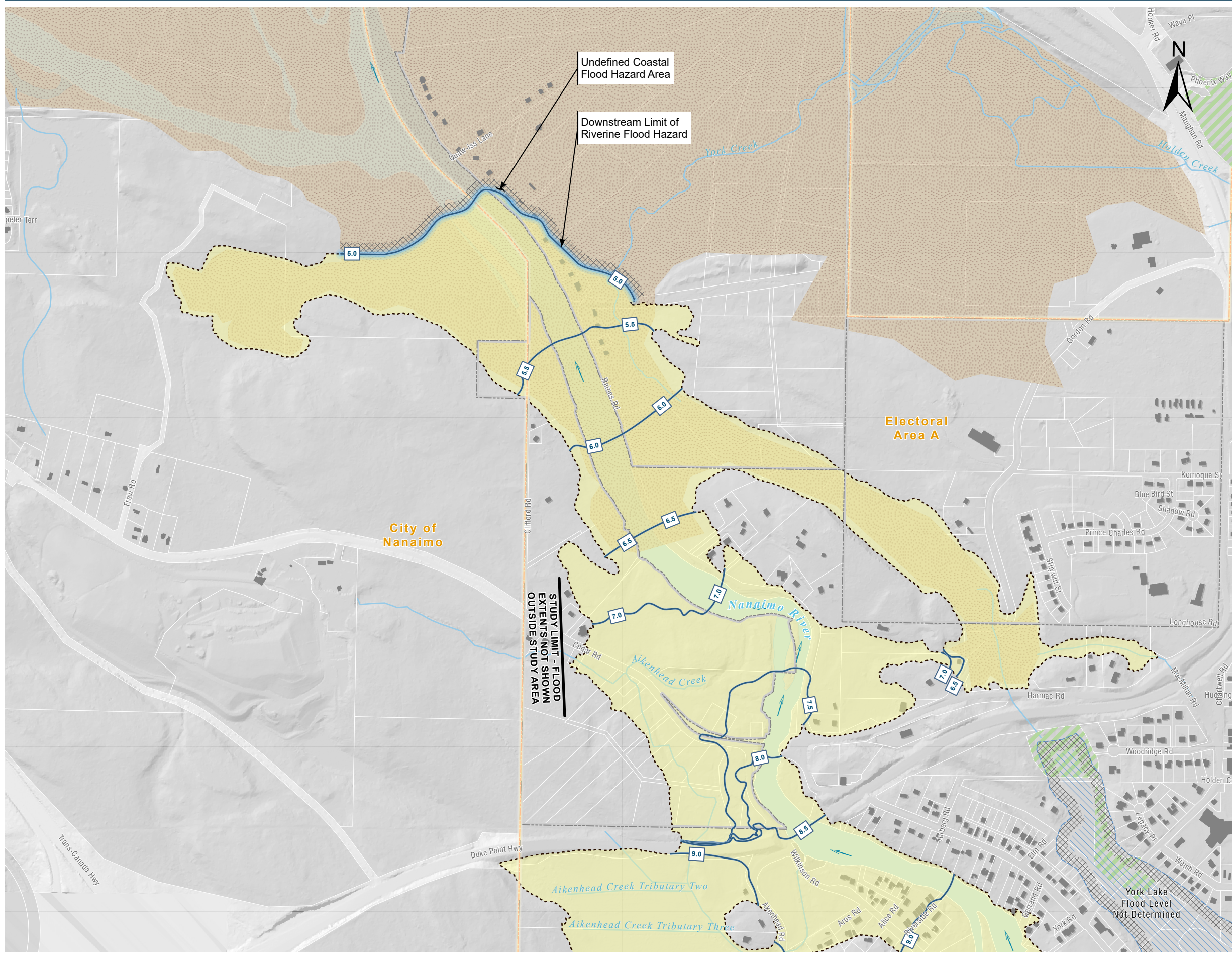
KERR WOOD LEIDAL
consulting engineers

Coordinate System: NAD 1983 CSRS UTM Zone 10N

Vertical Datum: Canadian Geodetic Vertical Datum of 2013 (CGVD2013)

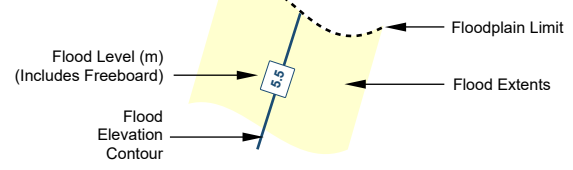
Scale Disclaimer: The map scale of 1:10,000 is only valid on a 11"x17" print.

Prepared By: JL
Checked By: LG



Legend

- Electoral Areas
- Snunemuxw First Nation Boundary
- Building Footprint (Approximate)
- Non-Standard Dike (Approximate)
- Watercourses
- Parks (RDN)
- Normal Water Surface
- Nanaimo River Delta
- Undefined Flood Hazard Area

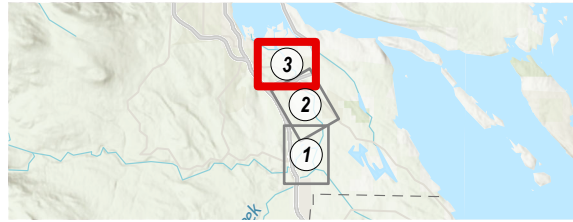


Notes and Limitations

1. This map was produced to support the "Regional District of Nanaimo Floodplain Management Bylaw No. 1469.03, 2022 (Schedule A)" using the mapping layers presented in Appendix A of the Kerr Wood Leidal Associates Ltd. report "Nanaimo River Flood Mapping Design Brief Final Report" (April, 2023).
2. 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 shown on this map. 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.
3. 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 breaches of the non-standard dikes. Flood levels and floodplains limits were derived from independently modeled flood scenarios. The highest flood levels for a given location should govern. Floodplains limits are not delineated for tributary creeks except for Haslam Creek. This map should be considered together with complementary studies such as master drainage plans.
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5. 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.
6. The area designated as "Undefined Coastal Flood Hazard Area" refers to coastal floodplains limits beyond the river floodplains limits that have not been defined as part of this work.
7. This map shows a delineation of the Nanaimo River delta. This area may be subject to additional processes and hazards.
8. 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.
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- Road features supplied by Digital Road Atlas (accessed March 4, 2020)
- Topography was collected by LIDAR. Sources and dates as follows: GeoBC (2019)



Nanaimo River Regulatory River Floodplain Map

KWL Project No. 536.023 Schedule A

Date April 14 2023 Map 3 of 3

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



Coordinate System: NAD 1983 CSRS 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.
 Prepared By: JL
 Checked By: LG