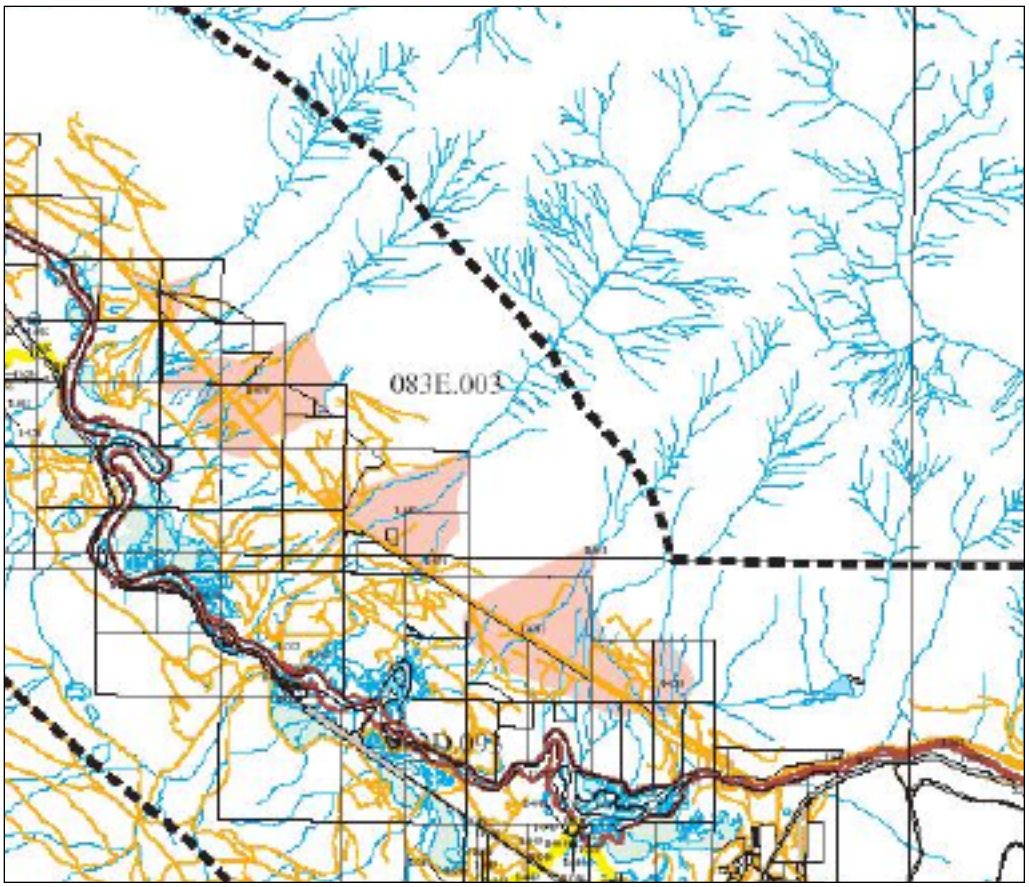
September, 2004

Flood Hazard Map User Guide

How to access and use BC Flood Hazard Maps to assist in land use decisions for flood prone areas.



British Columbia
Ministry of
Water, Land and
Air Protection

Fraser Basin Council

Foreword

This guide and flood hazard maps and files referred to in this document are for information only, and full legal responsibility for land development decisions in flood hazard areas rests with the local government body and/or agency designated in provincial legislation as the land development approval authority.

Questions about the information contained in maps and documents referred to in this guide should be directed to the local or provincial government approval officer.

The qualifications and limitations described in the list of Important Notes on *Use of Flood Hazard Map* on each flood hazard map apply equally to this User Guide and are hereby incorporated into it. This User Guide, the flood hazard maps and accompanying tables and information files are all subject to said qualifications and limitations.

Table of Contents

1. Introduction

Flood hazard maps display flood hazard information and associated land development controls formerly applied under the Ministry of Water, Land and Air Protection (MWLAP or the Ministry) BC Floodplain Development Control Program. The maps were prepared by MWLAP and the Fraser Basin Council (FBC) to provide information to assist local governments, land-use managers and approving officers in developing and implementing land-use management plans and in making subdivision approval decisions for flood prone areas.

The maps and accompanying files provide information accumulated by MWLAP prior to the enactment of the *Flood Hazard Statutes Amendment Act, 2003*, which shifted responsibilities for flood hazard management by removing the Ministry from the subdivision and bylaw approval process. Effective November 2003, land use decisions are now made by local governments (including municipalities and regional districts), the BC Ministry of Transportation (MoT), and Land and Water British Columbia Inc. (LWBC) without referrals to MWLAP.

The maps identify features and areas such as watercourses, lakes, ocean coastlines, alluvial fans and debris-flow impact areas where flood hazard information is available. Tables and files linked to the map features provide flood protection measures used by MWLAP staff when they were involved in land-use management decisions. Flood protection measures provided include setback distances (from a watercourse, lake or other feature) for buildings, elevation requirements for floor systems used for habitation, business or storage of goods damageable by floodwaters, the identification of high hazard areas where development was to be avoided, and the identification of areas where site specific engineering advice including possible protective works was to be used to guide development. The tables and files also refer to reports and other documents MWLAP staff have used to make floodplain management decisions. These documents may be useful when making future decisions on land development within flood hazard areas.

Terms, other than headings, that **appear in bold** within this text are defined in the Appendix A of a companion document entitled, *Flood Hazard Area Land Use Management Guidelines, MWLAP, May 2004*.

1.1 Statement of Limitations

The list of *Important Notes on Use of Flood Hazard Maps* that appears on each flood hazard map is also included in its entirety below, and specifies important limitations and disclaimers that apply to flood hazard maps and this User Guide.

Important Notes on Use of Flood Hazard Maps

These flood hazard maps, including the accompanying Flood Hazard Map User Guide, tables and information files ("the maps") are based only on available information. The maps have been prepared as a public service by the Fraser Basin Council (FBC) and the Ministry of Water, Land and Air Protection (MWLAP). They are intended to provide information originating from the Ministry's Floodplain Development Control Program files to local governments, land-use managers and approval officers to help them begin the work of developing and implementing land-use management plans and of making subdivision approval decisions for flood prone areas, without referrals to MWLAP.

1.1 Statement of Limitations continued

As information available at the time of map production was usually limited, the maps do not identify all hazards. Rather, information provided is general in nature and is intended to provide a broad overview of flood and debris flow hazards. The maps should not be relied upon as specific advice for responding to or assessing particular circumstances. Persons using the maps should take steps to independently verify the information provided.

The maps provide flood and debris flow hazard information in the form of colour-coded line, polygon and dot features. Feature identification numbers on the maps can be used to access tabular and file information about the features. Maps, tabular information and files are posted on MWLAP FTP site (ftp://floodusr@nelftp.env.gov.bc.ca/pri/outgoing/flood/) using an assigned user ID and password.

Important qualifications and limitations regarding interpretation and use of this information are set out below:

1. Information pertaining to the origin, limitations and use of the maps is contained in the companion document entitled ***Flood Hazard Map User Guide*** (the User Guide). The user is cautioned not to use the maps without first consulting with this document. The User Guide can also be found at the MWLAP FTP site. The qualifications and limitations described herein also apply to the companion document.

2. The maps do not identify all areas exposed to flood and debris flow hazards in the map coverage area. Only information that was available to MWLAP and contractors and was in a form that could be easily transferred onto a map is shown. Study area boundaries roughly outline the areas (generally in developing areas in populated corridors) where this type of information was available at the time of map production. Not all flood and debris flow hazards are depicted within the study area boundaries; only information identified in the course of past administration of the MWLAP Floodplain Development Control Program is represented.

3. The maps do not identify areas exposed to drainage, groundwater or other localized flooding problems.

4. The maps do not depict other natural hazards, such as rock fall, landslides, avalanches, etc.

5. The method used to plot features on the maps included the manual transposing of information from air photographs, reports, maps of varying scales and file documents onto 1:20,000, 1:50,000 or 1:125,000 scale base maps for digitization. Information available from these sources varied in quality, completeness and availability. Not all flood hazards and flood area boundaries were verified on the ground by MWLAP staff and/or other professionals. As such, the maps may not be precise and provide only a generalized depiction at the scale of preparation. Therefore, the user is solely responsible for independently verifying the information on the maps.

1.1 Statement of Limitations continued

6. Over time, natural processes and anthropogenic activities may alter current flood and debris flow hazards. Consequently, the maps may become out-of-date and/or inaccurate as time passes. Some examples of relevant natural process changes and anthropogenic activities are:
- changes in runoff patterns and frequency of debris flow events due to climate change,
- forest fires and resource development activities in contributing watershed areas,
- in-channel changes, such as development of log jams, ice jams or channel infilling or scouring,
- shifting river channels and meander cutoffs,
- the construction of dams, bridges, culverts and diversion channels, and
- changes to topography, infrastructure and land use on river floodplains, lake shores and alluvial and debris flow fans.

7. Neither MWLAP nor FBC will be updating the maps with new information.

8. The maps do not locate legal survey boundaries. A site survey and/or suitably qualified professional's report may be required to reconcile and to verify property location, ground elevations, topographic features and/or other relevant flood hazard information.

9. The maps do not substitute for identification and analysis of hazards affecting individual sites by a suitably qualified professional.

10. Information on the maps should not be relied upon as specific advice for responding to particular circumstances without verification. The user will have to review their particular circumstances and then determine whether the information is appropriate or relevant to those circumstances.

11. Information provided on the maps should not be used as a basis for making development or land use decisions, financial decisions, for solicitation purposes or other commitments. Any person using the information is responsible for taking steps to independently verify it, including obtaining appropriate professional advice for themselves.

12. Feature identification numbers are colour-coded and positioned on the maps on or near the features that they represent. However, at times, there could be several features in a small area on the maps, which may make it difficult to find the appropriate feature identification number(s). When uncertainty is encountered the user should contact the approval authority for clarification.

13. **No Warranty / Disclaimer of Responsibility**: The maps, Flood Hazard Map User Guide, tables and information files are offered as a public service. Neither MWLAP, the government of BC nor FBC can confirm the currency, accuracy or completeness of the information on the maps, including accompanying tables and files, nor their applicability or suitability for individual circumstances. They are provided on an "as is" basis without warranty of any kind, whether express or implied. Any and all warranties, whether of fitness for a

1.1 Statement of Limitations continued

particular purpose or on any other basis, are hereby expressly disclaimed and denied by MWLAP, the government of BC and FBC. Each person is responsible for their own use of the maps, Flood Hazard Map User Guide, tables and information files.

14. **Limitation of Liabilities**: Under no circumstances will MWLAP, the government of BC or the Fraser Basin Council, or their respective staff, agents and contractors, be responsible or liable to any person or business entity, for any direct, indirect, special, incidental, consequential or any other loss or damages based on any act or omission on the part of MWLAP, the government of BC, FBC or their respective staff, agents or contractors, or based on any use or misuse of this information, including, without limitation, any loss or damages for death or injury, lost profits, business interruption, or loss of programs or information, even if MWLAP, the government of BC or FBC have been specifically advised of the possibility of such loss or damages.

1.2 Companion Documents

Flood hazard maps are not to be confused with floodplain maps, which delineate the one in 200 year floodplain and provide flood construction levels. For more information on floodplain maps and/or to view floodplain maps for your area, see http://srmwww.gov.bc.ca/aib/fpm/.

For more information on flood hazards, history, legislation, and guidelines in BC see http://www.gov.bc.ca/wat/flood/.

Flood Hazard Area Land Use Management Guidelines

The *Flood Hazard Area Land Use Management Guidelines, MWLAP, May 2004* (the Guidelines) is a principal companion document referred to throughout this guide. In general, the Guidelines provide the policies and procedures established and used by MWLAP staff over the life of the former provincial Floodplain Development Control Program and are a primary guide and reference for land use managers in BC.

The Guidelines were prepared pursuant to Section 2 of the *Environment Management Act* and must be considered by local governments making bylaws under section 910 of the *Local Government Act*, as amended on November 17, 2003 by the *Flood Hazard Statutes Amendment Act, 2003* and on May 20, 2004 by the *Miscellaneous Statutes Amendment Act (No.2)*. The Guidelines provide recommended minimum requirements for land use management in flood hazard areas in BC. Land-use managers are cautioned that the maps provide supplemental information only; primary guidance for decision makers is in the Guidelines themselves.

2. Project Description

2.1 Map Coverages

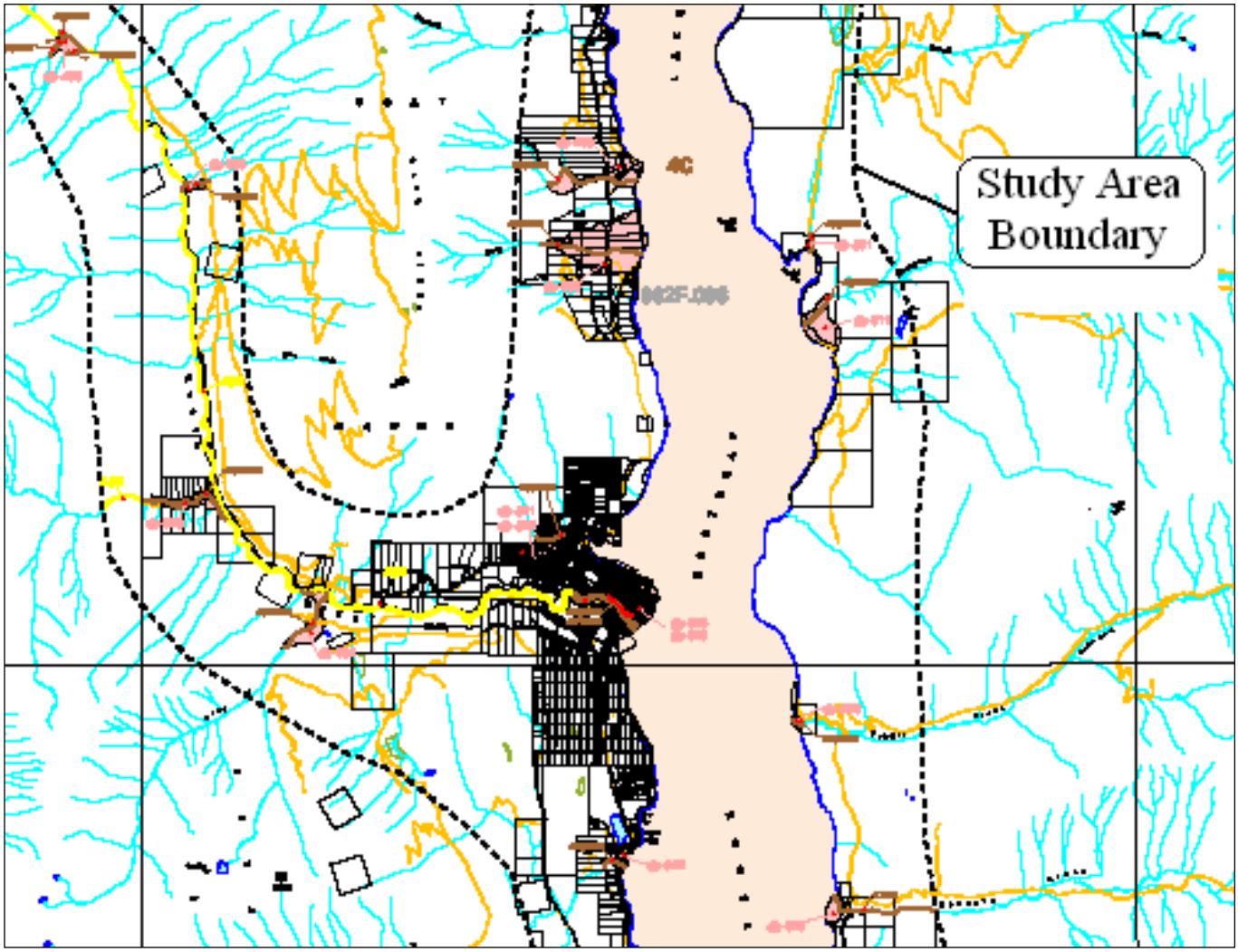
Flood hazard information is presented in five map coverages. Coverages include an array of colour coded line, dot and polygon features linked to information tables. Section 3.0 describes each map coverage in detail. Appendix B provides a detailed description of each column in accompanying information tables.

2.2 Study Area

Study area boundaries depict only areas (generally in developing and populated corridors) where flood hazard information was available at the time of map production. It is emphasized that flood and debris flow hazards depicted within study area boundaries are not exhaustive.

Figure 1 below shows a sample study area and its boundary, for the area around Kaslo.

Figure 1 – Sample Study Area Boundary



2.3 Data Collection Process

MWLAP staff and data collection contractors hired by FBC and MWLAP compiled and summarized available flood hazard information from MWLAP Floodplain Development Control Program files including air photographs, reports, maps of varying scales and other file documents and manually transposed this information onto 1:20,000, 1:50,000 or 1:125,000 scale maps provided by a GIS company and the Ministry of Sustainable Resource Management (MSRM), often with heavy reliance on the knowledge and experience of WLAP staff and contractors.

2.4 GIS Digitizing Process

Map features were digitized by the GIS company and MRSM staff and returned to MWLAP staff and contractors for review. MWLAP staff and contractors then populated information tables and provided Word documents where information table fields were too small to enter all relevant information.

Features were entered as layers in MSRM's GOAT system. MSRM then produced maps in PDF format. Information file information for each feature was included in tabular form.

2.5 How to Access Maps

Local government and provincial approval officers and staff can view flood hazard maps, information tables and Word files by accessing the MWLAP FTP site (ftp://floodusr@nelftp.env.gov.bc.ca/pri/outgoing/flood/) using an assigned user ID and password. The index maps and map sheets are PDF files requiring Adobe Acrobat to open and view. Feature attribute information (Excel files) and additional Word documents are identified and linked by feature identification numbers (feature ID) found on map sheets. Steps to access and use the maps are explained further in Section 4.0.

2.6 Digital Files, Map Plotting, and Key Contacts

Digital files are available for downloading by local governments with ArcInfo 8.3 format, from the MWLAP FTP site using an assigned user ID and password.

Neither MWLAP nor FBC will update the maps with new information. However, MWLAP and MSRM will provide technical advice to local governments and/or provincial agencies that wish to set up a system to update and maintain maps and data files in their area of jurisdiction. Local governments considering this should contact Flood Hazard Management Engineer Dwain Boyer. Local governments in need of assistance to plot maps may contact the Fraser Basin Council (see contact info. below).

Dwain Boyer, Flood Hazard Management Engineer Ministry of Water, Land and Air Protection	401 - 333 Victoria St Nelson, BC V1L 4K3 Canada	Tel: 250 354-6388 Fax: 250 354-6332 Dwain.Boyer@gems3.gov.bc.ca
Fraser Basin Council	**Central Office** 1st Floor, 470 Granville St Vancouver, BC V6C 1V5 Canada	Tel: 604 488-5350 Fax: 604 488-5351 info@fraserbasin.bc.ca

3. Map Coverages

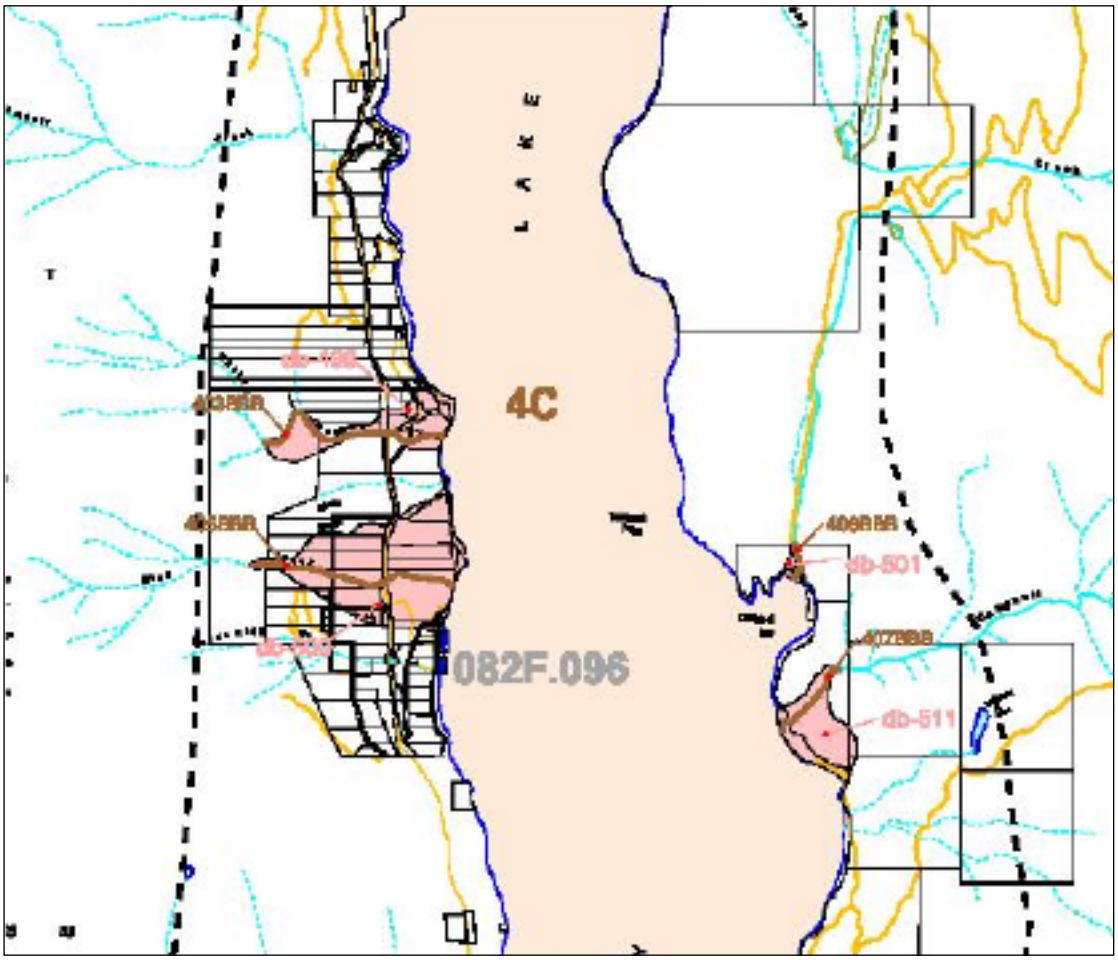
3.1 Study Area Boundary:

The boundaries depict only areas (generally in developing and populated corridors) where flood hazard information was available at the time of map production. Not all flood and debris flow hazards are depicted within study area boundaries. Only that information identified in the course of past administration of the MWLAP Floodplain Development Control Program is represented.

3.2 Lakes, Ponds, Marsh Areas and Reservoirs:

Lakes, ponds, marsh areas and reservoirs with surface areas coloured light brown indicate that flood hazard information is available for properties surrounding the lake, pond, marsh area or reservoir. This information is usually in the form of a **Flood Construction Level** (FCL) and a **Floodplain Setback** (FPS) distance (see Guidelines Section 3.0 for a description of floodplain setback). If a section of the shoreline around the water body is coloured darker brown, then there is additional flood protection information available for that particular section of shoreline.

Figure 2 – Kootenay Lake



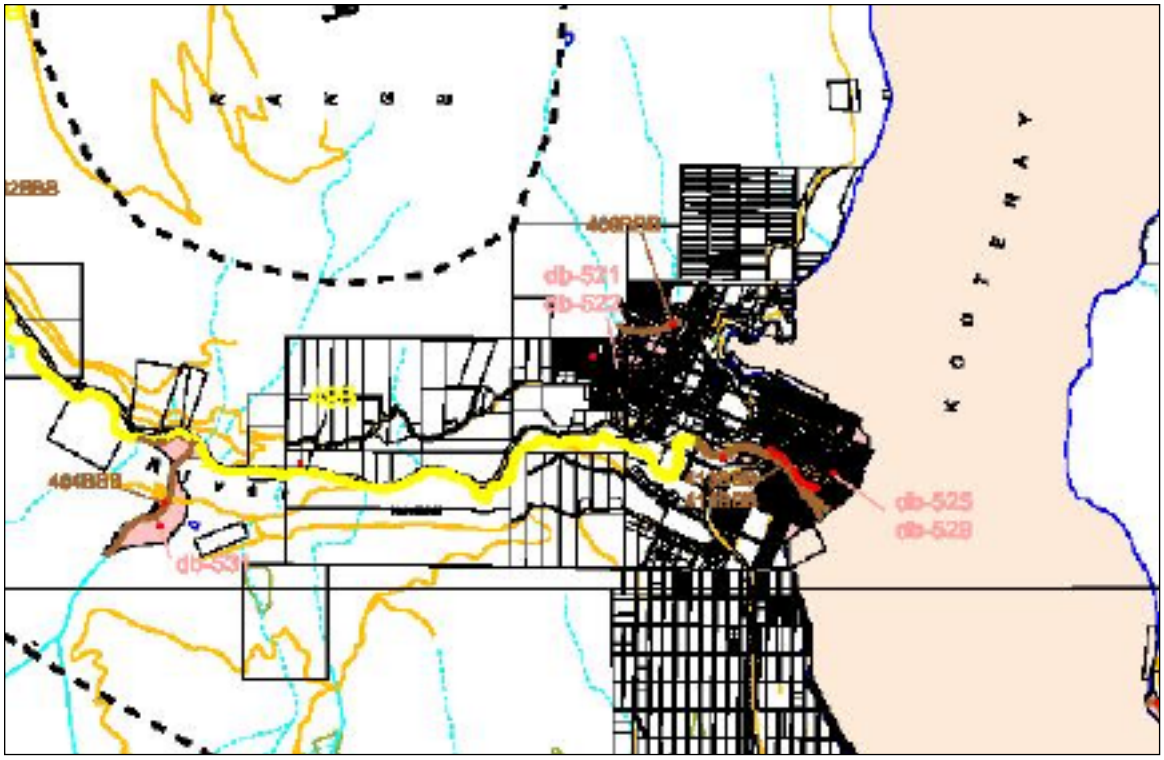
3.3 Watercourses:

For the purposes of this document and all maps it refers to, coastal shorelines, including shorelines of estuaries and inlets are included in the definition of a **watercourse**.

Watercourses coloured brown indicate that flood hazard information is available for those watercourses.

Watercourses coloured yellow indicate a special class of watercourses where MWLAP historically applied a standard minimum FCL of 3.0 metres above the natural boundary and a minimum FPS distance of 30 metres from the **natural boundary**. All yellow rivers have been identified within study area boundaries in the Kootenay Region but not in other regions (see http://wlapwww.gov.bc.ca/main/prgs/regions for a list of regions).

Figure 3 – Kaslo River



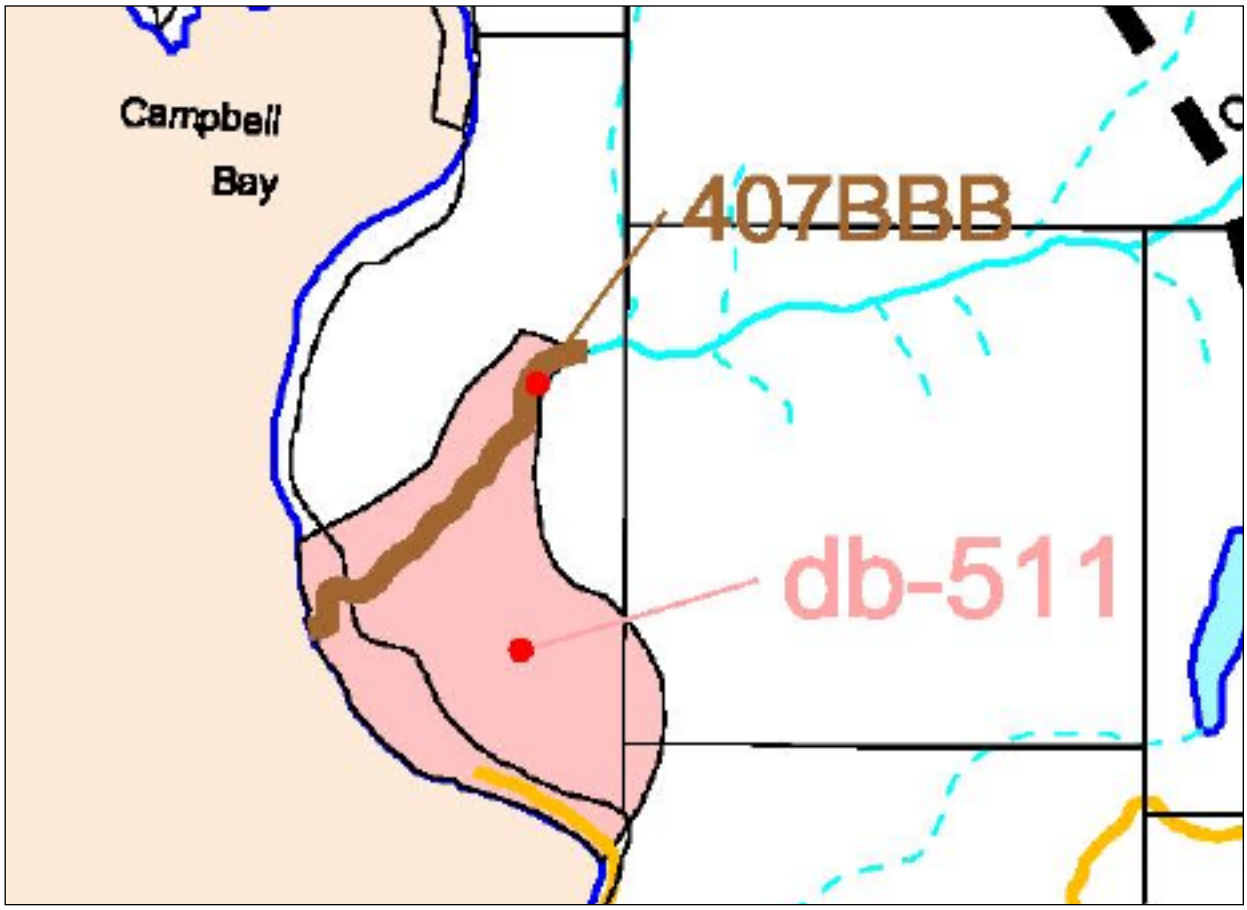
3.4 High Hazard Areas:

High hazard areas are areas where recommendations for FCLs and FPS distances alone may not provide adequate protection. These areas include, but are not limited to

- Meandering or braided streams
- Alluvial fans
- Debris flow hazards
- Areas subject to ice jams
- Tsunamis
- Coastal bluffs
- Floodplain areas with inundation levels in excess of 2 metres

High hazard areas are coloured pink. In very high hazard areas, the Ministry discouraged residential or business development. In other areas the Ministry required the involvement of one or more suitably qualified professionals to assess the hazard and prescribe protection measures for land development (*Guidelines* Sections 3.2.6 to 3.5).

Figure 4 – Campbell Creek Alluvial Fan

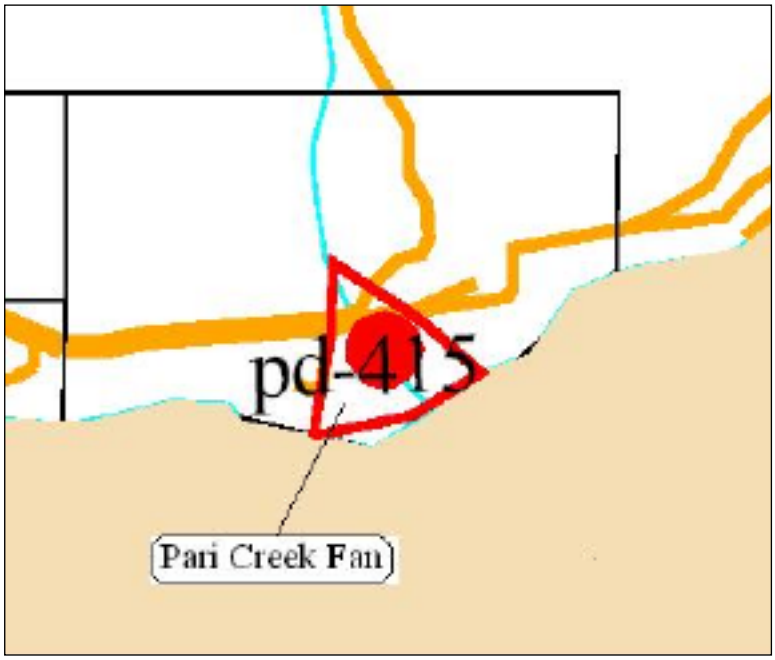


3.5 Suspected High Hazard Areas:

Red dots identify areas where flood and/or debris flow hazards were known or had the potential to exist but where insufficient information was available to rate the hazard, prescribe protection measures, or delineate hazard boundaries. This designation was also used at sites where flood hazard information was too voluminous and/or complex to present on the maps.

In some areas closed red lines were used, in addition to red dot features, to generally outline the suspected hazard area. The closed red lines are approximate and should only be used as a guide to alert the user of potential hazard areas. The areas enclosed with red lines are similar to 'G' rated hazard areas (see Appendix A).

Figure 5 – Pari Creek Alluvial Fan



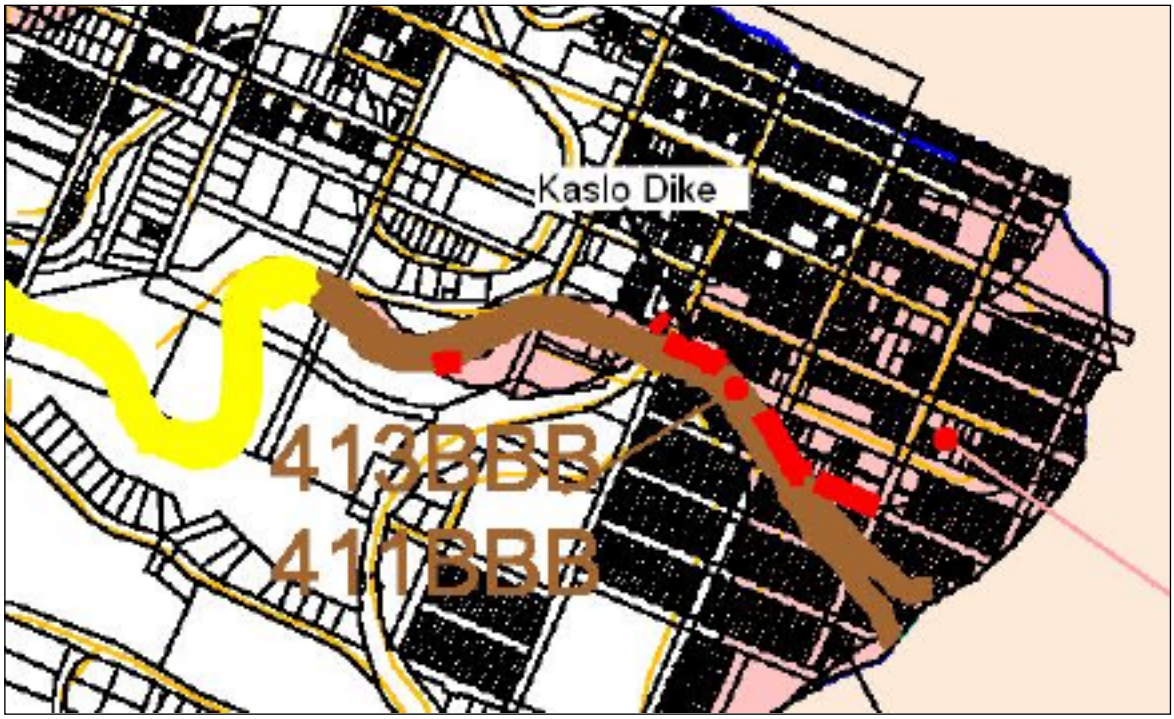
3.6 Flood Protection Works

Flood protection works have been built in many areas of the province to protect people, property and public infrastructure. These works include, but are not limited to dikes, sea walls, berms, groynes, bank revetment, debris catchment basins, flood channels, and channel clearing. Some of these works are identified on the flood hazard maps. The maps do not include all flood protection works in the province. Only works already located in digital map format at the time of map production are included.

Some works are constructed to high standards and are owned, operated, inspected and maintained by a local authority. Generally these structures provide a high degree of flood protection. However, many structures were constructed during or shortly after flood emergencies with little to no attention to design standards, property ownership, access requirements or requirements for ongoing inspections and maintenance. Furthermore, many works have deteriorated since their initial construction. It is important that land developers, local governments, and approval agencies be aware of potentially unsafe works as they could affect public safety and safe land development.

Often development plans will include proposed works to reduce the risk of flooding on the land. Approval authorities are cautioned not to approve subdivisions that would result in new lots being protected by flood protection works not maintained by a local government. For information on flood protection works visit http://maps.gov.bc.ca/ and/or contact the nearest Deputy Inspector of Dikes (http://wlapwww.gov.bc.ca/wat/flood/dykelist.html).

Figure 6 – Kaslo Dike



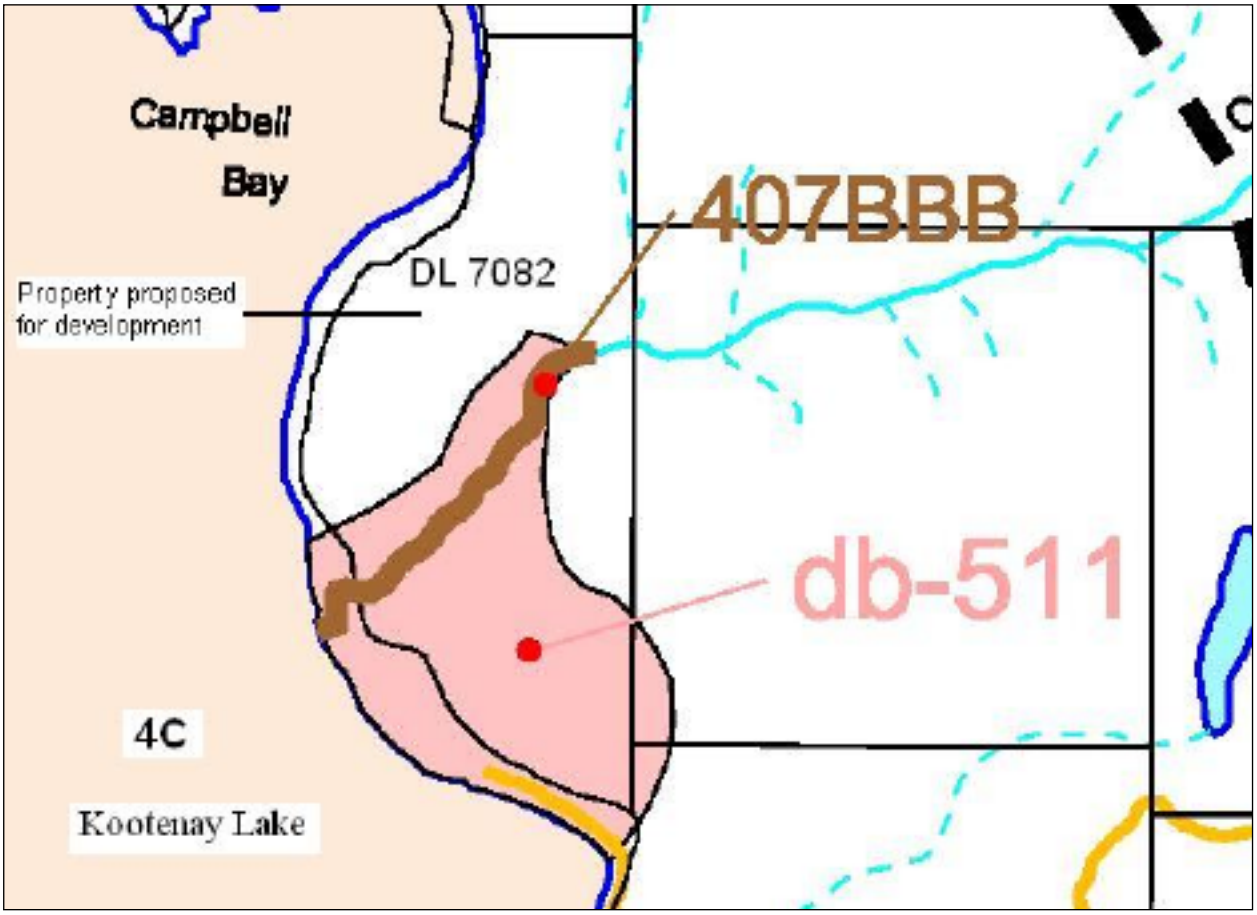
4. How To Use The Maps

4.1 Map Use and Feature Identification Numbers

The following steps illustrate how to use the maps, find feature identification numbers (feature ID), and locate associated documentation.

a. Using the index maps from the MWLAP FTP site, find and open the applicable map sheet. Using the zoom feature as required, locate the property or area of interest on the map sheet.

Figure 7 – Sample Map with Identification Number



b. Each polygon, line and dot feature on the flood hazard map is associated with a unique feature ID that refers to information tables and possibly Word files containing further information about that map feature. The feature ID is found on or near the feature as shown in Figure 7. In the example provided, three flood hazards affect the hypothetical property proposed for development: a high hazard area (Campbell Creek fan: db-511), a lake (Kootenay Lake: 4C), and a watercourse (Campbell Creek: 407BBB).

c. Record the feature ID #s for each hazard type that affects the property of interest and open the relevant information table.

4.2 Information Tables

Information tables, also available on the MWLAP FTP site, contain details about map features such as hazard type and feature name. They also contain comments; information about flood protection measures MWLAP used when it was involved in floodplain development decisions; information on reports and MWLAP file documents; and appended Word documents if available.

A detailed description of each column of the information tables is provided in Appendix B. The following subsections highlight some important notes the user should be aware of when using information tables.

4.2.1 INFORMATION SOURCE FIELD

a. If the Information Source field is blank, no supporting engineering report or document was available at the time of data entry. In these cases, MWLAP staff recommended flood protection measures and/or hazard ratings based on their knowledge and experience.

b. Where this field refers to a Word document or shows the number "99999", the Information Source field was too small to list all available reports and/or support documentation. Additional reports or other documents are listed in the 'Comment' field and/or an appended Word document. Word documents are available in separate file folders located on the MWLAP FTP site, identified and linked by feature ID.

4.2.2 COMMENTS FIELD

a. This field is used to provide additional notes and/or observations that the data collector was aware of at the time of data entry, and that may help to describe flood hazards and/or provide assistance/direction to facilitate further studies.

b. In cases where the Information Source field is too small to include all comments, the user will be referred to a Word document or the number "999999" will appear to indicate that additional information is included in an appended Word document. Word documents are available in separate file folders and are identified and linked by feature ID.

c. Bylaw information provided in the Information Source or Comments fields is provided for convenience and reflects information available at the time of data collection. This information may no longer be accurate. Contact local government for up to date bylaw information.

4.2.3 INFORMATION TABLES – SAMPLE INFORMATION

Following are sample information table features associated with Figure 7.

a. The property used for this example in Figure 7 (DL 7082) is partially located within an area identified as a high hazard area polygon. The associated information table shows that the hazard area is the Campbell Creek alluvial fan and the hazard rating used by MWLAP was 'E'. The table shows that an appended Word document is available and provides more information - in this case, an engineering report.

b. The property in Figure 7 is on the shore of Kootenay Lake. The information table entry for this feature ID indicates that the FCL WLAP used was 536.5 metres GSC datum and the horizontal setback distance historically used by MWLAP for dwellings was 7.5 metres (as noted earlier all information must be confirmed with the local authority).

c. In Figure 7, Campbell Creek also runs through the property. An information table entry for the selected feature ID # might notify the user that this section of the creek runs through a high hazard area and that flood protection requirements may be dictated by a report by a suitably qualified professional.

Appendix A – Flood Hazard Map Description Table (1)

	Hazard Description (2)	Flood Hazard Protection Measures Used by WLAP for **Habitable Areas**
S	Superficial flooding: local ponding or inundation by very low velocity flow possible; may include inactive low gradient alluvial/debris flow fans or stable areas on the flattest most distant edges of larger alluvial/debris flow fans.	FCL = 0.3 metre above the natural ground surface or any obstruction that could cause ponding and minimum FPS distances from all watercourses, lakes, ponds, marsh areas and reservoirs applied (3).
1	Shallow flooding with low velocity flow possible: may include inactive alluvial/debris flow fans of streams with moderate slopes or the stable run-out areas of larger alluvial/debris flow fans.	FCL = 0.6 metre above the natural ground surface or any obstruction that could cause pounding and minimum FPS distances from all watercourses, lakes, ponds, marsh areas and reservoirs applied (3).
2	Flooding with low velocity flows possible: may include the stable areas of alluvial/debris flow fans of small streams, small streams with moderate slopes, or the stable run-out areas of larger alluvial/debris flow fans.	FCL = 1.0 metre above the natural ground surface or 0.6 metre above any obstruction that could cause ponding and minimum FPS distances from all watercourses, lakes, ponds, marsh areas and reservoirs apply (3).
F	Flooding by moderate velocity flows possible: may include the stable areas of alluvial and debris fans of moderate size streams, small streams with steeper slopes, or the stable transition zone of larger alluvial and debris flow fans.	FCL = 1.0 metre above the natural ground surface or 0.6 metres above any obstruction that could cause ponding, appropriate scour protection and siting of habitable areas by a suitably qualified professional and minimum FPS distances from all watercourses, lakes, ponds, marsh areas and reservoirs applied (3).
E	Damage to habitable areas and occupants from exposure to deep water, high velocity flows, and/or debris impact possible: may include areas exposed to hazards associated with deep inundation, debris flow, channel avulsion (on alluvial/debris flow fans and/or in river floodplain areas), tsunami, coastal storm surges, bluffs or rapid and extensive bank or shoreline erosion.	Habitable areas discouraged in these areas.
G	This rating was used to identify areas suspected to have hazards similar to those described for hazard description 'E'. In most instances, detailed site inspections were not undertaken to assess and confirm the hazard or to accurately define area boundaries. Boundaries for these geological features were determined by interpretation of aerial photography or some other general means.	Habitable areas discouraged in these areas subject to the completion of a detailed hazard assessment by a suitably qualified professional.
P	This rating was used to identify areas with hazards similar to those described for hazard 'E' areas. In these areas MWLAP staff had undertaken site inspections and/or a suitably qualified professional had completed an assessment to identify the hazard; however, the boundaries of the hazard area were not accurately determined.	Habitable areas discouraged in these areas subject to detailed mapping of flood hazard area boundaries.

Notes:

(1) This table provides a general description of hazard ratings and flood protection measures used by some MWLAP regional offices during the administration of the ministry's Floodplain Development Control Program.

(2) An assessment by a suitably qualified professional may be required to confirm the hazard and the location of the property with respect to the hazards identified. Refer to *Guideline For Selection of Qualified Professional and Preparation of Flood Hazard Assessment Report*
http://wlapwww.gov.bc.ca/wat/flood/pdfs_word/guidance.pdf.

(3) Refer to *Flood Hazard Area Land Use Management Guidelines*
http://wlapwww.gov.bc.ca/wat/flood/pdfs_word/guidance.pdf.

Appendix B – Provincial Flood Hazard Map Feature Information Tables

1. Lakes, Ponds, Marsh Areas and Reservoirs
2. Watercourses
3. High Hazard Areas
4. Suspected High Hazard Areas

1. Flood Hazard Map Information Table – Lakes, Ponds, Marsh Areas and Reservoirs	
Feature ID	A unique number associated with a polygon, line, or dot feature on a flood hazard map. The Feature ID is used as a reference to find flood hazard information in the appropriate flood hazard map information table and Word documents.
Feature Name	
Hazard Type	Type of hazard: • FCL • query shoreline for FCL and/or FPS distance • island
FCL Elevation	Flood Construction Level in metres. If this field shows 9999, look for information in comment field and/or Word doc
FCL Reference Point	Reference point used to measure FCL. Options include: • nb – natural boundary • gsc – GSC datum • other – specified in comment field
FPS Distance	Floodplain Setback distance in metres. If this field shows 9999, look for information in comment field and/or Word doc.
FPS Reference Point	Reference point used to measure setback distance. Options include: • nb – natural boundary • other – specified in comment field
Floodplain Map Coverage	Yes/no answer indicating whether or not there is a floodplain map available for the area. If yes, the Information Source and/or the Comment column will provide the map title.
Information Source	Sources of information used to determine FCL and/or FPS distances. Report titles provided with WLAP report numbers where available.
Comments	Any comment, additional information or observation from WLAP staff and/or data collection contactors that may be useful.

2. Flood Hazard Map Information Table - Watercourses	
Feature ID	A unique number associated with a polygon, line, or dot feature on a flood hazard map. The Feature ID is used as a reference to find flood hazard information in the appropriate flood hazard map information table and Word documents.
Feature Name	
Hazard Type	Type or class of watercourse information provided. Options include: • 30+3 watercourse – coloured yellow where FPS distance used was 30 m and FCL used was 3 m above n.b. • ns_ck water course – coloured brown where FPS distance and/or FCL information is available and different from a 30+3 or yellow watercourse • ns_coast watercourse - coastal area coloured brown where FPS distance and/or FCL information is available • tsunami – coastal area coloured brown where FPS distance and/or FCL information is available
FPS Distance	Floodplain Setback distance in metres. If this field shows 9999, look for information in comment field and/or Word doc
FPS Reference Point	Reference point used to measure setback distance. Options include: • nb – natural boundary • tob – top of bank • diket – landslide toe of dike • dikec – landslide edge of crest of dike • diker – dike right-of-way • other – specified in comment field
FCL Elevation	Flood Construction Level in metres. If this field shows 9999, look for information in comment field and/or Word doc
FCL Reference Point	Reference point used to measure elevation. Options include: • nb – natural boundary • gsc – Geodetic Survey of Canada datum • ngl – natural ground elevation at building site • other – specified in comment field
Floodplain Map Coverage	Yes/no answer indicating whether or not there is a floodplain map available for the area. If yes, the Information Source and/or the Comment column will provide the map title.
Information Source	Sources of information used to determine FCL and/or FPS distances. Report titles provided with WLAP report numbers where available.
Comments	Any comment, additional information or observation from WLAP staff and/or data collection contactors that may be useful.

3. Flood Hazard Map Information Table – High Hazard Areas	
Feature ID	A unique number associated with a polygon, line, or dot feature on a flood hazard map. The Feature ID is used as a reference to find flood hazard information in the appropriate flood hazard map information table and Word documents.
Feature Name	
Receiving Water Body	Watercourse, lake or reservoir that the watercourse creating the hazard flows into. As an example a debris flow deposition area exists at the confluence of a small creek named Boulder Creek and a larger river named Big River. In this case the hazard area would be named after the tributary creek (in this case Boulder Creek) and the receiving water body would be Big River.
Hazard Type	A – alluvial fan D – debris flow fan F – floodway, meandering river reach, braided high channel, high risk of avulsion, back channels potentially activated I – ice jam S – snow avalanche O – any combination of above if applicable and see comment field
Hazard Description	Appendix A - Flood Hazard Description Table provides details
Information Source	Sources of information used. Report titles provided with WLAP report numbers where available.
Comments	Any comment, additional information or observation from WLAP staff and/or data collection contactors that may be useful.
Word Document ID	Provides number required to access Word document containing more information (Interior/Kootenay Region only).

4. Flood Hazard Map Information Table – Suspected High Hazard Areas	
Feature ID	A unique number associated with a polygon, line, or dot feature on a flood hazard map. The Feature ID is used as a reference to find flood hazard information in the appropriate flood hazard map information table and Word documents.
Feature Name	
Receiving Water Body	Watercourse, lake or reservoir that the watercourse creating the hazard flows into. As an example a debris flow deposition area exists at the confluence of a small creek named Boulder Creek and a larger river named Big River. In this case the hazard area would be named after the tributary creek (in this case Boulder Creek) and the receiving water body would be Big River.
Hazard Type	A – alluvial fan D – debris flow fan F – floodway, meandering river reach, braided high channel, high risk of avulsion, back channels potentially activated I – ice jam S – snow avalanche O – any combination of above if applicable and see comment field
Information Source	Sources of information used to determine FCL and/or FPS distances. Report titles provided with WLAP report numbers where available.
Comments	Any comment, additional information or observation from WLAP staff and/or data collection contactors that may be useful.

Appendix C – List of Acronyms

BCGS	Base Mapping Geomatic Services
FBC	Fraser Basin Council Society
FCL	Floodplain Construction Level
FPS	Floodplain Setback
FTP	File Transfer Protocol
GIS	Geographical Information Systems
GOAT	GIS and Oracle Access Tool
GSC	Geodetic Survey of Canada
LWBC	Land and Water British Columbia Incorporated
MoT	Ministry of Transportation
MSRM	Ministry of Sustainable Resource Management
MWLAP	Ministry of Water, Land and Air Protection
PDF	Portable Document Format
TRIM	Terrain Resource Information Mapping