

Handbook for Environmental & Hazardous Condition Development Permit Areas

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The purpose of this handbook is to address environmental issues as they relate to development on, or adjacent to, Development Permit areas—as defined in Chapter 7 of the City’s Official Community Plan (OCP). You should refer to the copies of the actual Bylaws available in the City Clerk’s Office and, if necessary, seek your own legal counsel for specific interpretations.

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The information provided within this document is accurate at the time of printing only. Subsequent changes and/or amendments to applicable bylaws or standards since production of this document may have occurred and the reader should be aware of this potential.

Handbook for Environmental & Hazardous Condition Development Permit Areas

1. Introduction

The **purpose of this handbook** is to address environmental issues as they relate to development on, or adjacent to, Development Permit areas—as outlined in Chapter 7 of the City's OCP. The Handbook was prepared as **an implementation and information tool** to help you understand the respective guidelines outlined in the OCP.

This handbook is intended for use by land-owners, developers, consultants, contractors, utility companies, and City staff in the following instances:

- Construction of, addition to, or alteration of a building or structure (e.g., Building and Development Permit applications)
- Subdivision applications.
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MAUDE-ROXBY WETLAND

Alteration of land, for example:

- Planning, design and construction of trails, and greenways).
- Planning, design and construction of infrastructure (e.g., roads, utilities, communications, etc.).

2. Background

Section 879 and Section 920 of the *Local Government Act* allows local government to designate Development Permit Areas in Official Community Plans for the purpose of *protection of the natural environment, its ecosystems, and biological diversity.*

An inventory of natural areas within the City of Kelowna was performed in 1991, with a supplemental analysis in 1993. This inventory formed the basis for the designated areas we have today. Numerous features were identified, and categorised as either water-based or land-based features.

3. Natural Environment & Hazardous Condition Development Permit Area Designation

Due to their environmental significance and sensitivity, water-based and land-based features within the City of Kelowna have been designated as part of the Natural Environment Development Permit Areas, as defined by Map 7.1 of the City of Kelowna's OCP.

The areas shown as Hazardous Condition DP Areas on OCP Map 7.1 and as Wildland Fire Hazard Areas on OCP Map 7.2 or affected by the conditions listed in OCP Section 7.12 are designated as Hazardous Condition Development Permit areas.

4. Policies & Objectives

The OCP designates Natural Environment and Hazardous Condition Development Permit Areas:

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- For protection of natural areas from potential detrimental effects of development; and
- For protection of life and property from natural disasters and hazards which can be anticipated.

5. Environmental Development Permits

A Development Permit (DP) defines the requirements necessary to address the objectives outlined for the particular Development Permit Area.

An Environmental DP is required for any activity that alters land in designated Environmental DP areas. This includes, but is not limited to:

- development or construction of structures such as, buildings, retaining walls, fences, patios, decks, pathways, driveways, or parking areas
- demolition of existing structures
- land grading, soil removal or placement, tree or vegetation removal, and other activities deemed necessary for development
- placement of culverts, underground or aboveground utility services, roadways and bridges
- any other alteration to the land that may be detrimental to wildlife ecology or biodiversity.

This does not restrict owners or occupants of **existing** buildings, other structures, or landscaped features that now encroach into the sensitive area from continuing to use them. However, they would require a DP when seeking to build new structures, additions to existing structures, place fill, excavate soils, or otherwise alter the land within the *Riparian Management Area (RMA)*, or within the sensitive portion of the property.

RIPARIAN AREAS PROVIDE:

Habitat: provide cover and shelter to fish, birds and animals; natural access routes for wildlife movement

Food: organic matter, leaves and insects act as food for fish and other aquatic organisms

Bank Stability: roots and vegetation limit bank erosion and stream degradation

Large organic debris: fallen trees, roots and logs provide cover, habitat and bank stability

Temperature regulation: trees and vegetation shade and help to regulate water temperature, reducing stress on fish and aquatic organisms

Water buffering: streamside vegetation intercepts stormwater runoff and filters sediments and pollutants before they reach the water

5.1 Activities Qualifying for a Waiver

Some development activities may occur on lands designated as Natural Environment or Hazardous Condition areas without a Development Permit.

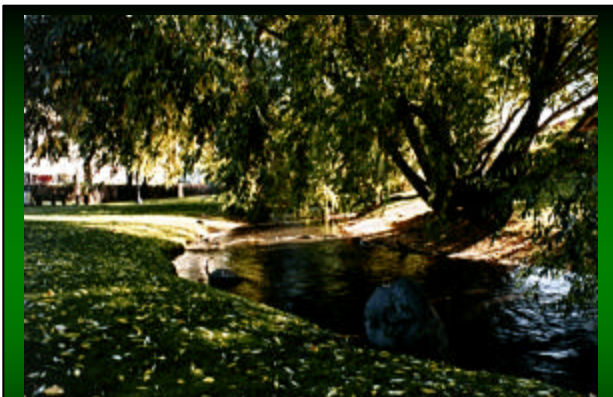
They include:

- 1 **Emergency Procedures:** Actions and activities performed to prevent, control, or reduce flooding, erosion or other immediate threats to life or property including:
 - Emergency flood or erosion protection works
 - Clearing of an obstruction from a bridge, culvert or drainage channel
 - Repairs to bridges or safety fences.

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Emergency actions for flood protection and clearing of obstructions must be reported to the Works & Utilities Department and to the BC Ministry of Water, Land & Air Protection within 72 hours.

- 2 **Hazardous Trees:** The emergency removal of dangerous or hazardous trees or tree limbs by standard arboricultural practices as provided for in the City of Kelowna Tree Protection Bylaw No. 8041.
- 3 **Trail Construction:** A development permit is not required for constructing a trail across a *Riparian Management Area to access water* if the following conditions are met: (*Authorisation may be required the BC Ministry of Water, Land & Air Protection-MWLAP. Notify prior to proceeding*)
 - only one trail is built
 - the trail is for personal use only and no livestock will have access
 - the trail is less than 1 meter in width
 - no trees will be removed (otherwise a tree permit is required)
 - the trail's surface is pervious (allows water to filter through; e.g., soil, gravel, not mulch)
 - the overall slope of the trail is less than 10% (6° slope); where portions are greater than 10%, the trail is designed to prevent erosion.
4. The implementation or construction of a **fish habitat mitigation or restoration** plan previously authorised by the Ministry of Water, Land and Air Protection.
5. The construction or maintenance of **public facilities** within a designated Riparian Management Zone and authorised by the Ministry of Water, Land and Air Protection.
6. A **renovation** or alteration that does not expand the existing building footprint, and in the case of an exterior renovation or alteration does not include any action that would be considered a disturbance of the feature being protected.
7. A development when the proposed use is at a location which:
 - does not include areas of 30% slope or more;
 - is beyond the boundary of a Riparian Management Area as determined using Table 7 – 1; and
 - is situated a minimum of 15 m (49 feet) from any fish-bearing stream, or 7.5 m (25 feet) from any non-fish bearing stream.
8. Construction or alteration of a **private moorage** facility where such a facility complies with the Zoning Bylaw and has been approved by relevant provincial agencies.
9. has been **assessed by a qualified professional** who has provided a report (to the satisfaction of the City) which concludes:
 - that the proposed action or development would have *no significant impact* on the designated feature, its environment or biodiversity, or
 - that the land is not considered to be environmentally sensitive to development, nor subject to hazardous conditions.



RIPARIAN MANAGEMENT AREA
ON MILL CREEK

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The Terms of Reference for the assessment is jointly determined by the City of Kelowna and the proponent, and satisfactory to BC MWLAP.

These areas provide a linking system that allows wildlife access and opportunity to move from place to place, relatively undisturbed by human activity.

6. Water-Based Features

Creeks, lakes, ponds, and wetlands--collectively called **streams**--play a vital role in Kelowna's natural environment. Some of Kelowna's streams provide spawning habitat, and many provide rearing habitat for kokanee, trout, and other fish species. Streams also provide access to water for a variety of other organisms and support habitat for those dependent upon water. These water dependent habitats are relatively rare and differ greatly from the predominant hot-dry upland areas common to the Okanagan valley. Streams also serve the community by providing natural water storage, drainage, and purifying systems. Furthermore, they act as natural green "corridors" for all to use and enjoy.

6.1 Riparian Areas

Riparian Areas are the areas of land and vegetation adjacent to streams that need to remain in a largely undisturbed state in order to maintain a healthy watercourse environment (see box on page 3).

These vegetated strips not only benefit fish and other aquatic life, they also provide people with a natural buffer by screening aesthetically displeasing views and filtering out wind-blown dust, agricultural chemical sprays, vehicle exhaust, odours, and noise.

Riparian Areas help to protect private property from flooding and potential loss of land due to stream erosion and instability.

Riparian Areas also can provide extremely productive habitat for a variety of terrestrial wildlife including birds, bats, reptiles, and small mammals.



6.2 Riparian Management Area

The stream **Riparian Management Area** is a specified setback area that is comprised of the *Riparian Reserve Zone*, the *Riparian Management Zone*, or both. The RMA widths are listed in Table 7.1 of the OCP and determined by attributes of the stream and adjacent terrestrial ecosystems.

As a general rule, Riparian Management Areas should be of sufficient width to include any significant natural attribute and adjacent terrestrial ecosystem (i.e., vegetation, water features, fish and wildlife habitat, escarpments, terraces, steep valley sides and cliffs).

6.3 Riparian Management Zone

Stream **Riparian Management Zone (RMZ)** is a setback area of a stream generally located outside of the Riparian Reserve Zone, or where there is no Riparian Reserve Zone, it is that area located adjacent to a stream.

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The **Riparian Management Zone** is established to conserve and maintain the productivity of aquatic and riparian ecosystems where specified or approved development is permitted and is in the public interest (maintain no less than 50% native vegetation retention). The setback area will be determined based on an environmental review.

6.4 Riparian Reserve Zone

A stream **Riparian Reserve Zone (RRZ)** is a setback area established on both sides of a stream, immediately adjacent to the stream, that is comprised of the protected natural feature and its riparian (leave strip) area. The Riparian Reserve Zone is to remain in a largely undisturbed state, and is established to conserve and maintain the productivity of aquatic and riparian ecosystems (100% native vegetation retention). The setback area will be determined based on an environmental review.

Riparian Reserve Zone widths must be consistent with Provincial and Federal Regulations.

7. Land-Based Features

This category of natural features includes those areas which, because of their resistance to erosion during glacial times, now stand as hills and ridges within the City's boundaries.

Due to steep slopes, bedrock outcrops, and other construction constraints, these areas have only recently come under development pressure. However, they continue to support extensive areas of "natural" vegetation and wildlife habitat. As natural features, these areas are particularly important for their:

- Representation of native grasslands and ponderosa pine forests, with associated habitats
- Use (or potential use) as ungulate winter range



- Opportunities for extensive recreation (hiking, horseback riding, cycling) in a natural setting within, or close to the City
- Excellent opportunities to view the City and surrounding landscape, and areas of visual diversity within the natural feature (e.g., pond complex, bedrock cliff)
- Wide visibility from within the City which contribute to the City's landscape setting, and to the character of associated neighbourhoods.

7.1 Terrestrial Ecosystems

Ecosystems of the Okanagan Valley are recognised as containing some of the most unique and threatened plant and animal species in Canada, but are not adequately represented within the present system of protected areas. In Kelowna, opportunities for conserving sizeable areas of undisturbed valley bottom ecosystems are extremely limited, increasing the importance of any large remaining natural areas.

7.2 Ravines, Escarpments & Highly Visible Slopes

Broad ravines and extensive escarpments in the City, created as watercourses cut through glacial deposits, often support natural vegetation and are locally significant as visual features.

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Disruption of native vegetation, encroachment of urban development, and extractive industries are some of the existing and potential impacts on these visual features.

In ravine and escarpment environments, setback widths shall be measured from the top of the ravine bank or escarpment. The point from which the setbacks are measured may have to be estimated where topographical breaks are poorly defined.

7.3 Biological Corridors

Increasing attention is being placed on the need for linkages between protected areas. Isolated islands of protection are not considered self-sustaining. Ravine areas, forested slopes, and escarpments can play an important role as biological corridors, provided, significant portions are still in an undisturbed condition.

7.4 Forest and Wood Lots

Kelowna area hillsides support forests of interior douglas fir, with stands of ponderosa pine/bluebunch wheatgrass and associated habitat, at lower elevations.



TYPICAL FORESTED AREA OVERLOOKING OKANAGAN LAKE

Identification of remaining old growth tree stands, areas of undisturbed grassland, and adjacent wildlife foraging areas may be necessary to determine impacts of development.

Development may require a DP or the registration of a Section 219 *Restrictive Covenant* for all areas determined by the Fire Department to be at risk of wildland fire (see Map 7.2 for general indication of areas affected). The *Restrictive Covenant* should incorporate the recommendations of a professional proficient in wildland fire management assessment (see Appendix G).

The City will require that, where fire hazard mitigation measures are necessary, such measures be undertaken on the subject property.

8. Development Permit Waiver Process

The Environmental or Hazardous Condition DP area designation, generally, includes the entire property. However, the City recognizes that:

- some portions of the property may not be sensitive to development, and
- the proposed activity may take place outside of the sensitive area contained within the property, or
- the proposed activity is of a minor character (leaves a 'soft footprint') and likely, would not have a detrimental environmental impact.

8.1 The Development Permit Waiver Application

To ascertain whether your proposed development may be waived, the City has developed a method to review applications. The process is essentially a screening tool to determine when proposed activities would have an environmental impact, be subject to a hazardous condition, or do not conform to City policies and objectives. Application

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forms are available from the City Planning & Development Services Department.

Completion of a waiver application form, including drawings and a description of the extent and type of work you propose to carry out, can assist City staff in determining if a DP is required.

If you qualify, a waiver will be issued. However, the waiver may include terms and conditions that must be followed to the completion of your proposed project. Any breach of the terms and conditions of the waiver may result in the cancellation of the waiver, which would require you to apply for a development permit.

The granting of a waiver does not absolve the applicant from any other approvals that may be necessary for the proposed development to proceed, such as, a building permit, flood covenant, or provincial authorization.

If a waiver cannot be granted, you will receive notice that a Development Permit Application will be required in order for the project to proceed together with a list of any requirements to be provided with a Development Permit application.

8.2 Determining Whether Your Proposed Development Activity will Trigger a DP

To determine whether a proposed development activity is too close to an *Environment Development Permit area* or an ecologically sensitive feature, two things need to be established:

1. **Locate the Riparian Management Area boundary, or the edge of the ecological feature.** On any given site this means:
 - a) Identify the sensitive natural feature on your property
 - b) Locate the feature's boundary, or in the case of a stream, the top-of-

bank (use natural boundary, where top-of-bank is not clearly defined)

- c) Measure the applicable setback or *Riparian Management Area* perpendicularly (from the top of bank or natural boundary).

See *Appendix B—Riparian Management Area Setbacks* to find out what the appropriate distance is for your stream and location.

Note: In some instances, the sensitive natural feature may not appear obvious. In such a case, assistance from a qualified professional, or City staff, may be necessary.

2. **Locate the proposed development relative to the Ecologically Sensitive Feature:** This means locating where proposed structures will be built and where soil or vegetation will be disturbed relative to the land or water-based feature, or *Riparian Management Area* boundaries.

Unless all proposed development activities will be clearly outside the sensitive area, or *Riparian Management Area*, you may need a Development Permit. Precise determinations may need to be made by a certified BC Land Surveyor (BCLS).

Generally, a BCLS-certified site plan is only necessary:

- when a DP is deemed to be required
- to assist in the identification of legal boundaries
- to assist in resolving disputed reference points and setbacks.

9. Development in Riparian Management Areas

GENERAL

1. For development in areas that may be subject to **hazardous conditions** (e.g., flooding, mud flows, torrents of debris, erosion, land slip, or rock falls), the ap-

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plicant shall provide a comprehensive **geotechnical report** prepared by a professional engineer (registered in BC), competent in the field of geotechnical or hydro-geotechnical engineering. The report is intended to assist Council in determining what conditions shall be included in the DP to alleviate the potentially hazardous condition(s).

2. The **installation of septic tanks** and associated drainage or deposit fields are not permitted within 30 meters (100 feet) of the normal high water mark of any stream.

These distances (or other) are specified by the Ministry of Health or by the Ministry of Sustainable Resource Management in designated *Environmental Control Ar-*



reas. Applicants are advised to discuss these matters with the City Works & Utilities Department, the Public Health Officer, and Ministry of Sustainable Resource Management staff.

3. Maintain natural **stream channel geometry** insofar as is feasible. Protect and manage streams as open channels (except under special circumstances and

with Ministry of Sustainable Resource Management).

4. **Riparian Management Areas** shall be provided on all streams listed in Table 7-1. Work within or near the *Riparian Management Areas* shall respect the natural biophysical function of the stream and shall restore disturbed areas to a condition compatible with the natural function of the stream and the ecological surroundings.
5. **Riparian Reserve Zones** shall be established to preserve, protect, restore, and enhance streamside fish habitat.
6. **Riparian Management Zones** shall be provided on all streams where infrastructure, public utilities, and public or private linear park facilities are located.
7. Any proposed **relaxation** of *Riparian Management Area* widths, floodplain management provisions, storm water mitigation requirements, or erosion & sediment control requirements are to be referred to the Ministry of Sustainable Resource Management for written **Authorisation** prior to review by the City.
8. The *Riparian Management Area* shall be **permanently protected** with a restrictive covenant.
9. Where a public or private Riparian Management Zone is required, further security under one of the following may apply:
 - Dedication as road—for potential public route of access
 - Re-zone as a protected area, park, or reserve status, or
 - Registration as statutory right-of-way.

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APPLICATIONS

10. Applicants for DPs are requested to submit the relevant information listed in *Appendix D—Application Information*.
11. For projects proposed within the *Riparian Management Area*, environmental **restoration may** be a requirement of the DP process (Sec. 920 (7), *Local Government Act*).
12. For projects proposed within a *Riparian Reserve Zone*, where **encroachment** is considered, environmental mitigation and **restoration will** be a requirement of the development process.
13. Where restoration is required, landscape **bonding**, to a value of 125% of the estimated cost of restoration, will be a condition of the DP.

VARIANCES

14. The City may consider variances to land use requirements under the Zoning Bylaw No. 8000, where necessary, in order to prevent, or minimize encroachment into the Riparian Management Area.

The types of variances that may be considered include, but are not limited to:

- a) Reducing front and/or rear yard setbacks
- b) Increasing the maximum site coverage of buildings
- c) Increasing maximum building height
- d) Reducing physical “parking space” requirements.

Any proposed variance to the zoning bylaw requires a development variance permit.

15. A *Riparian Management Area* must be established in accord with Table 7-1. Where the *Riparian Management Area* occupies more than **30%** of a lot, the *Riparian Management Area* may be relaxed

to occupy the equivalent of 30% of the lot.

Additional setbacks, necessary to satisfy the requirements of the *Riparian Management Zone* (e.g., linear park, utility, or roadway crossing), may require further negotiations with the landowner.

Relaxation of the *Riparian Management Area* may require habitat mitigation measures acceptable to BC Ministry of Water, Land & Air Protection (e.g., planting, diversion of storm water, fencing, or restoration works).

Variances of other Zoning Bylaw requirements indicated in above may also be applied.

DEVELOPMENT

16. When the proposed **development within the Riparian Management Area** is agreed to be appropriate, the development:
 17. Will be located so as to cause the least impact on the ecological values of the sensitive environmental feature
 18. Will be conducted at a time of year, and use construction methods, that minimize the impact on the sensitive environmental feature
 19. May require restoration and habitat mitigation measures acceptable to the City and BC Ministry of Water, Land & Air Protection.
17. **Mitigation measures** may be required as part of a development approval. *Appendix E--Detailed Information*, provides greater detail regarding issues of:
 - Development control
 - Erosion & Sediment control
 - Vegetation management
 - Habitat enhancement, restoration, or compensation
 - Landscape bonding.

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EXISTING HOME WITHIN
RIPARIAN RESERVE ZONE

The above items may be adapted to the needs of a particular site and development.

18. Applicants proposing to do work or carry out development within a stream channel (e.g., in the bed or within the *riparian management area* of a stream) must comply with the requirements under Section 9 Regulation of the Provincial *Water Act*. Written **authorization** of the proposed works must be obtained from the Ministry of Sustainable Resource Management prior to submission of a DP or DP waiver application.

For more information regarding the notification process, call the Water Management office at 1-250-490-8200.

19. All applications for development permits will require compliance with the Kelowna **Tree Protection Bylaw No. 8041** and **Soil Deposit Bylaw No. 8504**. A DP holder will not be required to pay for separate approval under the Tree Protection or Soil Deposit bylaws.

- In cases that only involve the removal of a protected tree, the applicant may be required to comply with the Tree Protection Bylaw No. 8041 only.
- In cases that only involve the removal or placement of soil, the applicant may be required to comply with the Soil Deposit Bylaw No. 8504 only.

20. As a condition of approving a DP, the City may require that the **bed of the stream** be returned to Crown.
21. At time of development, the City may seek **road dedications** for public routes of access for land abutting specific streams listed in Table 7-1.
22. **Encourage voluntary protection** of natural features in cases where it is an objective of the City to protect (for stream conservation, water quality protection, or habitat preservation) land in excess of that which is, by virtue of municipal and senior government regulations, required to be protected.
23. To encourage voluntary placement of **conservation covenants**, the City may give consideration to allowing increased density on the balance of the subject property, transferring density to another property, trading land, purchasing land, offering grants-in-aid, or granting tax exemptions. Owners placing voluntary conservation covenants on their land shall not be deprived of the privilege to enjoy the land as their own but they may not close, fence or otherwise obstruct any adjoining public route of access.