Calgary property owners adjacent to the Bow or Elbow Rivers may have experienced erosion as a result of the 2013 June flood. The City of Calgary has prepared this information sheet for property owners that might be interested in building riverbank erosion protection along their properties.

This document contains information regarding:

1. Making an Application for Riverbank Erosion Protection
2. Design Guidelines
3. Additional Approvals Required
4. Permitted Construction Periods and Habitat Compensation
5. Additional Resources

1. Making an Application for Riverbank Erosion Protection

Permits Required by The City of Calgary

- **Development Permit.** The City of Calgary’s Land Use Bylaw 1P2007 applies to any development in the floodway on private parcel(s) and thus a Development Permit (DP) is required for erosion protection.
- **Building Permit.** Depending on the scope of work, a Building Permit (BP) may also be required.

**Note:** Private property owners are responsible for obtaining all required permits (Municipal, Provincial and Federal) prior to commencing construction.

**Joint Applications**

- Property owners are encouraged to work with neighbouring properties to submit a joint-application to The City for contiguous erosion sites

The City recommends that property owners along a contiguous stretch of erosion work with one another to have one contiguous design. For example if one property owner wants to restore land to their property boundary, it is recommended that their neighbours also restore land to increase chances of approval (if neighbours have also experienced erosion).

Having one contiguous design/structure across several properties will help to expedite the approval process. Several owners acting as a group may also be permitted to file one application as opposed to multiple applications to The City. It is the responsibility of the private landowner(s) to coordinate applications and to exercise due diligence in ensuring all of the proper authorities are contacted at all three levels of government.

The approval process may require an agreement between owners, registered on title, to govern owner responsibilities and rights as regards to access and upkeep of any works involved. Contact the Planning Support Centre at 268-5311 for more information.

**Pre-Application Enquiry**

- The City highly recommends that applicants arrange a pre-application meeting prior to seeking any approvals or submitting a Development Permit.
A pre-application enquiry is a non-legislated process whereby a prospective applicant may present a proposal to a planner or team of cross-disciplinary planners for review and comment, prior to a formal application being made. Having a pre-application meeting can help highlight major issues with the proposal, and identify supplemental information that will be required with the formal application.

For pre-application purposes The City will endeavor to include Alberta Environment and Sustainable Resource Development (AESRD) staff in a meeting with applicant(s) to discuss the coordination of applications to both regulatory bodies. Again, the applicant is responsible for contacting any other required jurisdictions.

If you wish to set up a pre-application meeting to evaluate your proposal, or if you have questions pertaining to the pre-application process, please call 403-268-5311.

Application Requirements

The requirements for this application can be found in the Riverbank Erosion Protection Complete Application Requirement List (CARL). Applications must be made in person at the Planning Service Counter, located on the 3rd floor, Calgary Municipal Building, 800 Macleod Trail SE, Calgary, Alberta between the hours of 8:00 a.m. and 4:30 p.m. Monday – Friday.

2. Design Guidelines

• The City requires applicants hire an accredited professional engineer (and may include a biologist or qualified aquatic specialist depending on the work) to aid in design and oversee construction (if required) of the erosion protection measures.

An accredited professional will also be helpful in completing or informing the property owner of all required approvals and permits. Other jurisdictions may have other design requirements not listed below.

The City has data that can be made available to applicants to aid in design including:

• Post flood local river bathymetry (shape of the river)
• Post flood local LiDAR (Light Detection and Ranging, used for surveying and contour mapping)
• Pre- and post-flood water levels, velocities and hydrographs
• Pre- and post-flood hydraulic models (if available)
• General guidelines for riverbank erosion protection (typical designs and guidelines)

Bio-Engineering

The City strongly encourages designs to involve as much bio-engineering as possible. After the flood, many areas that remained in good condition were areas that were well vegetated and had well established root systems. These act as natural erosion protection and are encouraged to be included as part of your design.

Some benefits of bio-engineering besides aesthetics and fish and wildlife habitat enhancement include:

o Regulation of temperature and humidity close to the surface, thus promoting growth;
• Improvement of the soil water regime via interception, evapotranspiration and storage;
• Soil improvement and top soil formation;
• Improvement of and provision of riparian habitat.
The City can provide general guidelines depicting typical bio-engineering designs that are more beneficial to aquatic habitat as well as a simple guide to which method is best suited for your property. It is encouraged that any application of soil bio-engineering techniques (such as live cuttings of suitable species) be acquired from local nurseries within the City of Calgary region. These guidelines are intended as information only and do not replace the expertise of an accredited professional and do not guarantee that they are in accordance with the requirements of other jurisdictions. These guidelines can be made available during the pre-application meeting process (see Pre-application Enquiry section).

Calgary River Valleys also provides a brochure entitled “At Home on the Elbow River” on the benefits of having a healthy riparian area and the type of vegetation and trees you can plant. Visit http://www.calgaryrivervalleys.org/resources/elbow-river-booklet for more information.

**Property Boundary**

If you want to protect the new bank or you want to reclaim any of your property that has been lost to river erosion, contact AESRD. There may be implications on your property boundary line for any river bank work that is done.

### 3. Additional Approvals

In addition to the City approvals, the following approvals are commonly required; however, it is the responsibility of the property owner to confirm which of these, or any other, approvals are required:
• Alberta Environment and Sustainable Resource Development (AESRD) - Water Act and Public Lands Act
  o Expedited Authorization Process (for flood recovery activities)
    ▪ Link below provides very useful information regarding the Province’s process for flood recovery activity, aquatic environment information and application form.
    ▪ [http://environment.alberta.ca/04229.html](http://environment.alberta.ca/04229.html)
• Department of Fisheries and Oceans (DFO) - Fisheries Act
• Transport Canada (TC) - Navigable Waters Protection Act
  o May be exempt if an erosion protection project is considered a minor work [http://www.tc.gc.ca/eng/marinesafety/tp-tp14594-menu-2977.htm](http://www.tc.gc.ca/eng/marinesafety/tp-tp14594-menu-2977.htm)

We recommend applicants apply for a Development Permit from The City prior to contacting AESRD. Where possible, The City will endeavor to process Development Permits in coordination with any requisite Water Act and Public Lands Act applications which are processed by AESRD.

4. Permitted Construction Periods and Habitat Compensation

To avoid detrimental impact to fish and fish habitat, in-stream work is generally allowed during certain time periods as legislated by the Provincial and Federal Government. Any in-stream work outside of these windows is generally not permitted and must be formally requested to the Department of Fisheries and Oceans (DFO). Please contact the Federal Government for the current information on permissible time periods.

Work in the river that DFO considers likely to result in harmful alteration, disruption or destruction of fish habitat is subject to fish habitat compensation. Fish habitat compensation involves replacing affected habitat with like-for-like habitat (same or enhanced natural integrity, structure and function of the habitat that was affected) at no net loss. Please contact DFO for more information.

5. Additional Resources:

  o The City of Calgary: [http://www.calgary.ca](http://www.calgary.ca)
  o Department of Fisheries and Oceans (DFO): [http://www.dfo-mpo.gc.ca/](http://www.dfo-mpo.gc.ca/)

The information in this document has no legal status and cannot be used as an official interpretation of the various bylaws, codes and regulations currently in effect. The City of Calgary accepts no responsibility for persons relying solely on this information. It is the responsibility of the property owner to complete their own due diligence in seeking out all the parties that need to be contacted for approvals.