

Chehalis Basin Strategy
Local Actions Program Development
Draft Bank Protection Strategy Elements and Criteria

1/5/21

Channel migration, bank erosion, and estuarine and marine shoreline erosion are natural processes that contribute sediment and wood to natural aquatic ecosystems. These natural processes form important habitats for a variety of species. Channel migration and erosion may become accelerated due to upstream or on-site land uses that may have increased the delivery of sediment or reduced the strength of banks. Major factors contributing to this acceleration include channel confinement or realignment and removal of natural riparian vegetation. In situations where channel migration or bank erosion is accelerated and threatens structures, infrastructure, or critical facilities, it may be desirable to slow or reduce the rate of erosion. Hard types of bank protection, such as riprap, can degrade habitat quality and reduce habitat functions. Therefore, bioengineered bank protection is preferred and consistent with existing Shoreline Master Program regulations in Lewis, Thurston, and Grays Harbor counties.

Landowners or local and tribal governments may be interested in both technical assistance and grant and funding opportunities from the Office of the Chehalis Basin (OCB) and other funding agencies to address erosion hazards. The following provides a draft approach and criteria for evaluating where, when, and how bank protection projects could be included in a Local Actions Program for the Chehalis Basin Strategy.

It is recommended that projects included in the Chehalis Basin Strategy should be developed and implemented in the context of reach-scale conditions and geomorphic processes, as individual actions at a single parcel are likely to be ineffective over the long-term or cause adverse effects to river or shoreline habitats and processes. Existing Shoreline Master Program regulations also encourage an evaluation of site and reach conditions and consideration of broader alternatives to promote the use of bioengineering techniques.

The following questions outline the key elements that should be considered for developing projects in the context of reach-scale conditions and geomorphic processes. A technical assistance program from OCB could help individual or multiple landowners in answering these questions to identify if an erosion hazard is significant and could be addressed through a reach-scale project.

1. What is at risk from erosion (road, utilities, residential or commercial structures, agricultural land, etc.)?
2. What damage has already occurred?
3. Is the risk immediate (within the next year or two) from erosion?

4. Is the erosion problem caused by or exacerbated by frequent flooding?
5. Can at risk structures/infrastructure be relocated further from the eroding bank/shoreline? Would relocation also reduce future flood damages?
6. Is there already riprap or other hard bank protection present?
7. What other structures/infrastructure are present in the reach and what other areas may have also been experiencing erosion or deposition (or frequent flooding)?
8. Is there already mapped erosion hazard information or an estimated rate of erosion for the site/reach? Is the site also in a mapped floodplain?
9. What are contributing factors to the erosion (gravel bar deposition, lack of tree or shrub cover, adjacent bank protection, upland drainage, etc.), including upstream factors?
10. Is the reach within an ASRP priority area?
11. What habitats are present within the reach?
12. Could a reach-scale approach be pursued with multiple landowners? Are landowners willing to consider bioengineered elements such as riparian revegetation, wood, reconnection of former channels, and other measures to slow the rate of erosion?
13. What could be affected upstream or downstream from actions taken in this reach?

Criteria that could be considered or required for assistance in a Bank Protection Program (project should meet 4 or more of the criteria to be included):

1. Landowner is interested in a bioengineered solution and willing to maintain a bioengineered solution as part of a funding agreement.
2. Erosion area is within a delineated CMZ or erosion hazard area, or other erosion priority area identified by local jurisdiction.
3. Erosion risk is immediate or near-term (within next 5 years) that that would cause significant damage to valuable structures, infrastructure, or productive agricultural land (e.g. "significant" loss or damage).
4. Landowner is willing to consider if structure or infrastructure could be relocated to a location that would provide long-term reduced erosion (or flooding) risk (either with or without an associated bioengineered or habitat solution).

5. Opportunities exist for a reach-scale approach to reduce velocities through reconnecting former channels/swales, placement of large wood, riparian revegetation, bank sloping/terracing, or other elements that would benefit more than one landowner and maintain or restore natural processes and/or habitats.
6. A local project sponsor is willing and interested in participating and developing a reach-scale project with multiple landowners.
7. A reach-scale project could be leveraged with ASRP funding for habitat restoration and enhancement in addition to erosion management.
8. In situations where riprap or other hard bank protection elements are existing, landowner(s) are willing to incorporate bioengineered elements into existing bank protection or will support a reach-scale solution that may incorporate both bioengineered and harder elements, or habitat restoration/protection.

Questions for the Technical Advisory Group

1. Are there other elements that should be considered in evaluating an erosion hazard area or elements listed above that are not critical?
2. Are the criteria sufficient to determine whether a bank protection project should be considered in the context of the Chehalis Basin Strategy? Meaning, a bank protection project that incorporates bioengineering (or a combination of bioengineering and harder armoring elements).