Quinte CONSERVATION

APPENDIX F –

TECHNICAL GUIDELINES FOR BALANCED CUT AND FILL PROJECTS

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TECHNICAL GUIDELINES FOR BALANCED CUT AND FILL PROJECTS

May 2025

Quinte CONSERVATION

Motion to Approve: Motion QC Date: Moved By: Seconded By: Carried

This document was created by reviewing and consolidating existing policies from neighbouring Conservation Authorities and creating a new, watershed specific guildelines document for balanced cut and fill proposals within the Quinte Conservation Authority. To that end the following were sourced for this document:

- Cataraqui Conservation Authority: Guidelines for Implementing Ontario Regulation 148/06 (2021)
- Conservation Sudbury: Floodplain Storage Compensation – Direction on the Completion of Cut/Fill Design and Associated Plans (2022)
- Mississippi Valley Conservation Authority: Development, Interference with Wetlands and Alteration to Shorelines and Watercourses – Regulation Policies (2019)
- Niagara Peninsula Conservation Authority: Policies for Planning and Development in the Watersheds of the Niagara Peninsula Conservation Authority (2024)
- Sault Ste. Marie Region Conservation Authority: Policies for the Administration of Ontario Regulation 176/06 (2017)
- Toronto Region Conservation Authority: The Living Cities Policy for Planning and Development in the Watersheds of the Toronto and Region Conservation Authority (2014)

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1.0 INTRODUCTION

This document outlines procedures and considerations for the placement of fill and grading activities as part of a balanced cut and fill project within regulatory floodplains under the jurisdiction of Quinte Conservation Authority (QC). It is intended to be a framework for planning and implementing balanced cut and fill projects, ensuring compliance with QC policies under O.Reg. 41/24 and minimizing adverse impacts within a natural hazard.

The purpose of this guideline is to provide clear standards for the submission of technical reports, including hydraulic and geotechnical assessments, as needed, to ensure the safe and sustainable execution of balanced cut and fill projects.

Further, this document will guide the submission of applications for balanced cut and fill projects within a regulated area such that the placement of fill does not affect the control of flooding, erosion, dynamic beaches or unstable soil or bedrock, or interfere or alter in any way a watercourse or wetland. Additionally these guidelines will assist in a balanced cut and fill project that does not create conditions or circumstances that, in the event of a natural hazard, might jeopardize the health or safety of persons or result in the damage or destruction of property.

Applicants are encouraged to engage in pre-consultation with QC staff to streamline submissions and ensure that specific site requirements are addressed. QC reserves the right to enforce regulatory limits and impose time-limited controls on the project to monitor compliance and environmental restoration.

1.1 LEGISLATIVE AUTHORITY

Proposals to undertake a balanced cut and fill project within the QC watershed must be approved through an application and permit process. Conservation Authorities (CA) are responsible for the regulation and management of development in, and adjacent to, natural hazards, including floodplains, through the *Conservation Authorities Act, R.S.O. 1990, c.C.27* (*CAA*) and O.Reg. 41/24. In order to administer the *CAA* and the Regulation, QC staff follow policies in the Watershed Regulation (O.Reg. 41/24) Policy Manual (2024).

CA's also have additional review and commenting duties that fall under Provincial Policy through the *Provincial Planning Statement 2024* (PPS) and through municipal planning processes such as zoning and official plans.

A brief overview of the various policies and regulation is provided below.

1.1.1 *CONSERVATION AUTHORITY ACT*

Natural hazards, including flood hazards, are regulated through the *CAA* which indicates that development activities in areas under the jurisdiction of a CA require a permit or permission from that organization. Under the *CAA* areas within an authority's jurisdiction include:

S.28(1) 2:

Development activities in areas that are within the authority's area of jurisdiction and are,

i. hazardous lands,

ii. wetlands,

iii. river or stream valleys the limits of which shall be determined in accordance with the regulations,

iv. areas that are adjacent or close to the shoreline of the Great Lakes-St. Lawrence River System or to an inland lake and that may be affected by flooding, erosion or dynamic beach hazards, such areas to be further determined or specified in accordance with the regulations, or

v. other areas in which development should be prohibited or regulated, as may be determined by the regulations. 2017, c. 23, Sched. 4, s. 25; 2022, c. 21, Sched. 2, s. 7 (1).

Development activity is defined as:

(a) the construction, reconstruction, erection or placing of a building or structure of any kind,

(b) any change to a building or structure that would have the effect of altering the use or potential use of the building or structure, increasing the size of the building or structure or increasing the number of dwelling units in the building or structure,

(c) site grading, or

(d) the temporary or permanent placing, dumping or removal of any material, originating on the site or elsewhere; ("activité d'aménagement")

The placement of fill and subsequent site grading required for a balanced cut and fill project falls under the definition of development activities. As such, an application for a permit must be submitted to the QC office for review prior to any work commencing at a site. Proponents should

be aware that submission of an application does not guarantee a permit as not all proposals for development activities are appropriate in areas associated with watercourses, wetlands and natural hazards.

1.1.2 ONTARIO REGULATION 41/24

Quinte Conservation is responsible for regulating watercourses, wetlands and natural hazards by virtue of Ontario Regulation 41/24: Prohibited Activities Exemptions and Permits under the *Conservation Authorities Act, R.S.O. 1990, c.C.27*. Development activities proposed within the regulated area require permission from QC through an application for a permit.

Quinte Conservation reviews these applications in respect of its obligations under the *Act* and compliance with the Quinte Conservation Watershed Regulations (O.Reg.41/24) Policy Manual (2024). Policies relevant to balanced cut and fill proposals are contained in Sections 3.0, 4.0 and 5.0 and, in addition to referring to these Guidelines, generally indicate the following:

- The purpose of the cut and fill is not to create a building envelope on vacant land located entirely in the flood hazard.
- Hydraulic analysis is required to support the proposal.
- Safe access is present to the lot.

1.1.3 PROVINCIAL PLANNING STATEMENT (2024)

Through the PPS (2024) Chapter 5: Protecting Public Health and Safety (S.5.2), the Province states that development shall be directed away from areas of hazardous lands associated with the Great Lakes-St. Lawrence River System and associated with river, stream and small inland lake systems. Additionally, the PPS states that development shall not be permitted in a floodway.

In accordance with the PPS, hazardous lands are defined as follows:

> *Property or lands that could be unsafe for development due to naturally occurring processes. Along the shorelines of the Great Lakes - St. Lawrence River System, this means the land, including that covered by water, between the international boundary, where applicable, and the furthest landward limit of the flooding hazard, erosion hazard or dynamic beach hazard limits. Along the shorelines of large inland lakes, this means the land, including that covered by water, between a defined offshore distance or depth and the furthest landward limit of the flooding hazard, erosion hazard or dynamic beach hazard limits. Along river, stream and small inland lake systems, this means the land, including that covered by water, to the furthest landward limit of the flooding hazard or erosion hazard limits.*

While floodway is defined as:

Where the one zone concept is applied, the floodway is the entire contiguous flood plain.

CA's have delegated responsibility to review and provide comments on *Planning Act* applications with regards to natural hazards. Although development or site alteration proposed in a planning application may not be imminent, in many cases that development will require a permit from a CA. QC endeavors to ensure, through its comments on planning applications, that the requirements under the regulation process can be fulfilled. If a balanced cut and fill project is required to accommodate development proposed through a planning application, QC will provide comments and/or recommendations so that a planning application is not approved by a Municipality when the development would ultimately be refused by the CA.

1.2 IMPORTANCE OF FLOODPLAINS

Floodplains provide critical areas for water storage and conveyance during large storm events and typically extend beyond the banks of a given watercourse or waterbody and into the adjacent lands. As shown in Fig. 1, infilling the floodplain, or an area of surface water flooding, can displace floodwaters and increase flood levels locally, at other properties, and on access roads. Floodwater can be displaced by:

- Solid buildings (i.e. buildings without voids)
- Raised terracing and decking
- Changing the grade (i.e. raising the ground)

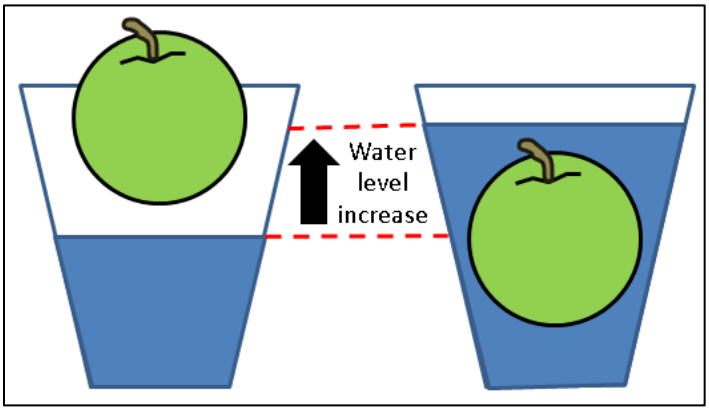

Figure 1: Demonstrates Displacement of Water by an Object

Preservation of this storage volume and conveyance area is vital to ensuring that the water

associated with a given flood is not raised or altered, thus worsening the hazard for the neighbouring landowners and the remainder of the watershed.

In specific situations the location of the regulatory floodplain may be adjusted to accommodate development activity proposals (i.e. to modify a building envelope). This is achieved by a balanced cut and fill, which is a technique that is used to minimize flood storage losses resulting from the placement of fill within a flood plain. A balanced cut and fill project involves removing a volume of earth at an appropriate elevation and location to offset any increase in flood level due to filling areas within the flood plain. This ensures that the same volume of flood storage is available at all levels of flooding. This methodology can be used for both watercourse and waterbody flooding.

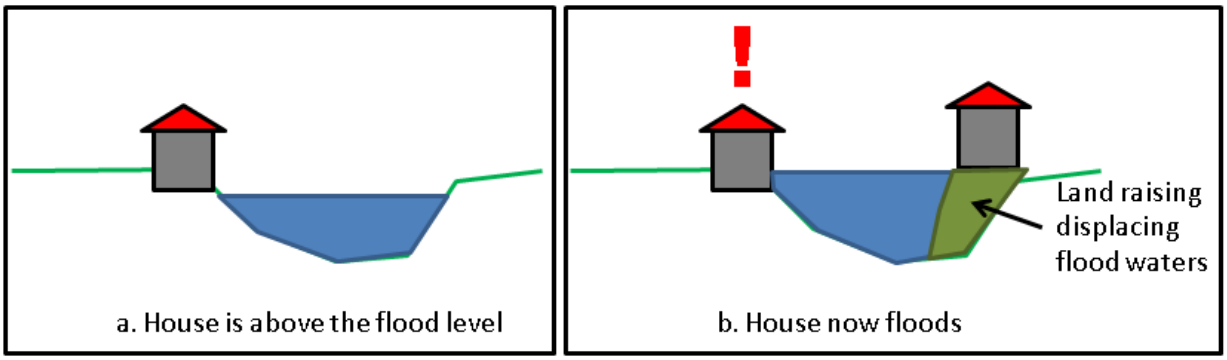

Figure 2: Demonstrates Impact of Development on Floodlain and Resulting Increased Risk

The suitability of cut and fill projects is extremely site-specific. It should be recognized that, in conducting a cut and fill, additional flood-free lands are not obtained. A cut and fill will only serve to transfer floodwaters from one area to another as a result of the manipulation of the land's contours.

A cut and fill proposal must be completed by a qualified professional and these proposals will not be accepted for lots that are currently undevelopable (i.e. there is not enough room for development even if the floodplain was moved). Further, an application for a balanced cut and fill will only be accepted in conjunction with an application for development. An application for a balanced cut and fill on its own, without an immediate and subsequent plan for development or construction will be considered an incomplete application.

In addition to not interfering or altering a watercourse or wetland, a cut and fill proposal must also demonstrate that the control of flooding, erosion, dynamic beaches, or unstable soil or bedrock will not be impacted. The proposal must also demonstrate that the activity is not likely to create

conditions or circumstances that, in the event of a natural hazard, might jeopardize the health and safety of persons or result in the damage or destruction of property.

2.0 SITE CONDITIONS AND DESIGN REQUIREMENTS

The site intended for a balanced cut and fill project and the subsequent proposal must meet the following conditions and requirements:

a. Project Eligibility and Scope;
b. Site and Proximity Criteria; and
c. General Design Requirements

These are described in further detail below.

2.1 PROJECT ELIGIBILITY AND SCOPE

1. **Applicability**: Balanced cut and fill projects are only permissible on lands with sufficient area above the regulatory floodplain. Lots entirely within the floodplain are ineligible.

2. **Purpose Limitation**: The purpose of the project is to modify the floodplain on an existing developable lot to facilitate proposed new development. Lots that do not currently have any development potential are not eligible.

2.2 SITE AND PROXIMITY CRITERIA

1. **Location Requirements**: Balanced cut and fill areas must be on the same parcel and as close as possible. For watercourses, the cut and fill areas can only have a maximum elevation difference of 5 cm at the nearest floodplain cross-sections. All other regulated and identified hazards must be considered and avoided. Safe access to the parcel must be demonstrated.

2. **Hydraulic Connection:** Balanced cut and fill areas must be hydraulically linked so the area of the cut floods from the same watercourse/waterbody as the area of fill used to flood from. On a watercourse, the balanced cut and fill would ideally occur on opposite sides of the bank at the same cross section location, however landowner restrictions may not permit this. The area cut within the flood plain to maintain a hydraulic connection must be limited

to less than 50% of the total cut area. Further, the final elevation of the cut area must match the existing elevation of the proposed fill area.

Restrictions: Cut and fill activities are not permissible below the high water mark (HWM), or the bankfull elevation, nor within areas restricted by the QC Policies and Procedures (e.g. watercourse and wetlands) (see Fig. 3). Only the volume of removed material below the regulatory flood elevation, above the HWM, and outside areas restricted by QC Policies and Procedures (e.g. watercourse interference and wetlands) will be included in the compensatory cut volume calculation.

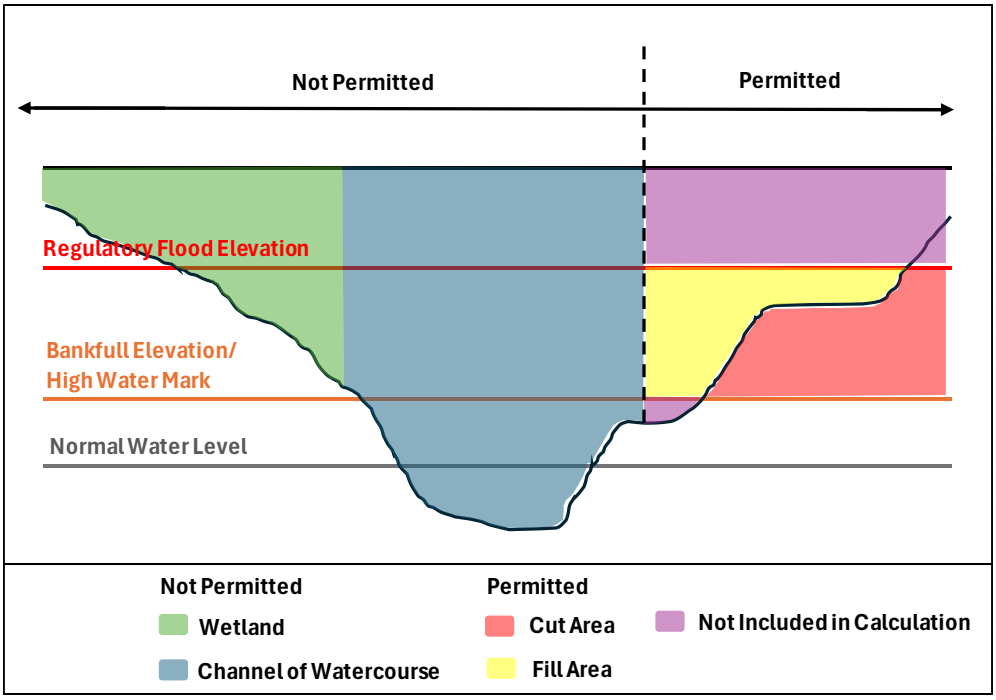

Figure 3: Identification of Generally Permissible Cut and Fill Locations

2.3 GENERAL DESIGN REQUIREMENTS

In general, proposals must demonstrate:

2.3.1 HYDRAULIC CONNECTIVITY

- Balanced cut and fill activities must avoid disrupting meander belts and wetlands.
- For the purposes of volume calculations the minimum proposed ground elevation in the compensating cut area shall not be lower than the minimum existing ground in the proposed fill area.

- The volume of available flood plain storage capacity within the affected river or stream reach shall not be reduced.
- For watercourses, the proposed site grading (cut and fill) must be designed to result in no increase in upstream water surface elevations and no increase in flow velocities in the affected river cross-sections under a full range of potential flood discharge conditions from the 2 year return period to the regulatory flood event.
- For waterbodies, the proposed cut and fill must be designed to ensure floodplain storage volumes are maintained for all storm events up to the regulatory flood.
- Hydraulic analyses must confirm no adverse impacts to the hydrologic function of watercourses, wetlands, and valleylands.
- Hydraulic and erosion analyses must confirm no adverse impacts on floodplain conveyance and erosion processes.
- Adequate overland flow routes onto and within the subject lot must be maintained.
- In order the maintain the control of flooding, the full extent of cut areas must be hydraulically connected to the 2 year return period flood elevation via overland flow (i.e. must completely drain overland to watercourse, waterbody or wetland).
- The full extent of fill areas cannot sever the overland flow path or disrupt the hydraulic connection for any other portion of the floodplain that is not to be filled.
- Overland flow routes to neighbouring properties must be maintained and cannot be impacted.
- Hydraulic connection from the lowest existing elevations must be maintained.
- For the purposes of access routes only culverts can be used to maintain hydraulic connectivity, however the culverts must be sized appropriately to ensure adequate conveyance and prevent clogging.

2.3.2 FILL PLACEMENT STANDARDS

- The regulatory floodplain delineated by QC must be used in the analysis.
- Only the cut and fill volumes proposed for the floodplain of the same watercourse or waterbody will be applicable for balanced cut and fill calculations.
- Cut and fill areas must tie back into original ground elevations at their perimeter at a slope no greater than 3 horizontal to 1 vertical (3H:1V).
- Flood-proofing measures as detailed in Appendix B of the Policy Manual are incorporated into the design of all proposed buildings or structures. Safe access must be available to the site.
- Fill material must not be susceptible to erosion by ice and/or water.
- Exposed soils must be stabilized to prevent erosion.

- The material must not adversely affect any other natural hazard or wetland.
- All proposed buildings or structures must maintain required setbacks from any regulated features (floodplain, erosion hazard, wetland, etc.).

2.3.3 INCREMENTAL BALANCE CALCULATIONS

- The cut and fill volumes are required to be balanced in a maximum of 0.2 m elevation increments.
- Balanced cut and fill elevation increments must be referenced from the nearest regulatory flood elevation. The datum used should be clearly noted when referencing elevations.
- Compensation should be provided up to the 1:100-year floodplain
- Cut volumes should be greater than or equal to the fill volume for each elevation increment.

Table 1 is an example of a cut and fill compensation table. The numbers in Table 1 have been derived using the example shown in Figure 4 (below).

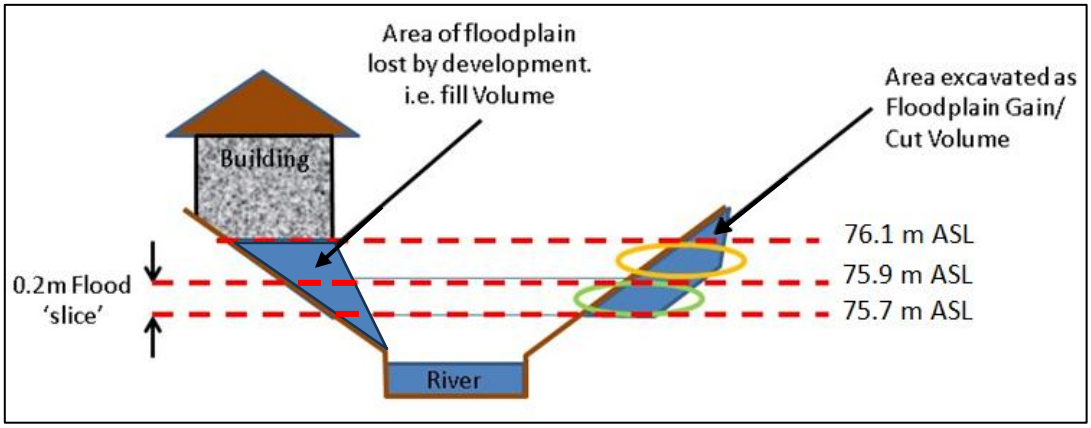

Figure 4: Example Figure for Cut and Fill Table (Table 1)

Table 1: Cut and Fill Table Example

Flood Slice	Depth (m)	Floodplain Fill			Floodplain Cut			Total Volume (B-A) (m^3)
		Average Plan View Area Per Slice		Volume (A) (m^3)	Average Plan View Area Per Slice		Volume (B) (m^3)	
		Area of Top of Slice (m^2)	Area of Bottom of Slice (m^2)		Area of Top of Slice (m^2)	Area of Bottom of Slice (m^2)		
76.1-75.9	0.2	30.0	10.0	4.0	65.0	25.0	9.0	5.0
75.9-75.7	0.2	10.0	4.0	1.4	25.0	11.0	3.6	2.2
75.7-75.55	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0

To be an acceptable balanced cut and fill proposal, the volume of floodplain gained in each particular increment should be greater than the volume lost for that same slice. For example, if less compensation volume is provided in the lower-level slices than what was there originally, then flood water will still be displaced even if the higher flood slices contain extra compensation volumes to make up for this. This is easiest to understand by looking at a small flood event where the flood waters only flood the lowest level slices where there is insufficient compensation volumes provided. Providing the extra compensation higher up does not prevent flood waters being displaced during this smaller flood.

2.3.3.1 COMMON MISTAKES

It is often possible to provide excess compensation for the lowest flood slices while being unable to provide enough compensation for the highest elevation flood slice. In these circumstances, a common mistake in the calculations is to add together the volume difference column of the compensation and try and show that the overall compensation being provided is greater than the overall volume being lost. This is incorrect and will increase flood risk.

Level for level compensation is about ensuring that the floodwaters behave in a similar way both pre and post development. The timing of how flooding occurs is particularly important for achieving this. If the floodplain is infilled but doesn't provide the same volumes at the same ground levels elsewhere, the inundation elevation will change. The lower flood slices will fill first so by the time the higher flood slice is reached by floodwaters all the compensation provided at the lower level is already full. This means that having extra compensation at a lower level will not provide any flood risk benefit at the higher ground level.

Table 2 (below) shows how **not** to calculate flood storage with an example of the most common errors. This proposed scheme will displace flood waters at the higher flood slice, thereby increasing flood risk even though the sum of the volume difference column suggests that there is a net increase in storage.

Table 2: Example of Errors in Calculation Table

Flood Slice	Depth (m)	Floodplain Fill			Floodplain Cut			Volume Difference (B-A) (m^3)
		Average Plan View Area Per Slice		Volume (A) (m^3)	Average Plan View Area Per Slice		Volume (B) (m^3)	
		Area of Top of Slice (m^2)	Area of Bottom of Slice (m^2)		Area of Top of Slice (m^2)	Area of Bottom of Slice (m^2)		
76.1-75.9	0.2	30.0	10.0	4.0	65.0	25.0	9.0	-0.4
75.9-75.7	0.2	10.0	4.0	1.4	25.0	11.0	3.6	2.2
75.7-75.55	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total				**5.4**			**7.2**	**1.8**

3.0 SUBMISSION REQUIREMENTS FOR BALANCED CUT AND FILL PROJECTS

At a minimum all applications for a balanced cut and fill proposal shall be prepared by a qualified engineer and are required to contain the following information:

1. Detailed Site Plans – including existing and proposed grades
2. Cut and Fill Calculations
3. Engineering Analysis and Supporting Technical Reports
4. Risk and Materials Management Plan
5. Post-Completion Requirements

Specific detailed requirements are provided below.

3.1 DETAILED SITE PLANS

Site plans (existing conditions, and proposed cut and fill conditions) of the property depicting existing and proposed conditions are required. At a minimum the following general Information is to be included on all drawings:

- Name and signature of certified professional
- Date of survey or information collection
- Date of plan preparation and revision number
- Property identifiers including municipal address and legal description
- Scale and scale bar
- Reference to geodetic datum

3.1.1 EXISTING CONDITIONS PLAN REQUIREMENTS

1. Detailed plan view and cross section contour/topographic drawing, at 0.5m increments, to scale showing existing conditions including floodplain location and ground elevations.
2. Property boundaries extending a minimum of 10m beyond the property.
3. Delineation of top and bottom of any slopes if applicable.
4. Existing ground features including tree lines, driveways and gravel pad limits.
5. Watercourses and waterbodies (where applicable) including centerline, top of bank, current water level, high water mark and flood elevation AND distance of feature to existing development.
6. Wetland limits (where appliable) AND distance of feature to existing development.
7. Footprint of all existing and proposed structures and septic systems, complete with finished floor elevations.
8. Ditches and drainage swales.
9. Culverts and drainage structures.
10. Other relevant features as they appear on the property.

3.1.2 PROPOSED PLAN REQUIREMENTS

1. Detailed plan view and cross section drawings that clearly delineates all proposed cut and fill area(s).

   a. Fill Plan Details
      - Limits of all fill areas extending to the toe of slope.
      - Delineation of top and bottom of any fill slopes including slope label (i.e. 3H:1V).

- Existing and proposed spot elevations and grades of the limits of fill (i.e. show matching at toe of slope).
- Minimum of one cross-section per fill area depicting original ground, proposed ground, regulatory flood elevation, and high-water level.
- Original and modified floodplain limits (to ensure hydraulic connectivity).
- A note on the type and source of all fill material.
- A note on how and when all new fill will be stabilized.
- Sediment control measures; and,
- Depending on the purpose of application, we may require:
    i. Footprint and finished floor elevation of all proposed structures;
    ii. Proposed spot elevations and grades around structure, limits of fill pads, and driveway surfaces;
    iii. Delineation of septic systems including tanks, filter beds and mantles as well as associated grading details.

b. Cut Plan Details
- Limits of cut area extending from top of cut to tie in point with original ground (to ensure hydraulic connectivity)
- Delineation of top and bottom of cut slopes including slope label (i.e. 3H:1V)
- Existing and proposed spot elevations and grades over cut area
- Minimum of one cross section per cut depicting original ground, proposed ground, and flood elevation
- Original and modified floodplain limits
- A note or description of where cut material will be placed or disposed of
- Sediment control measures
- A note on how all exposed soils within the cut area will be stabilized

3.2 CUT AND FILL CALCULATIONS

Cut and fill calculations must include:

a. A detailed table of the volume of fill placed and cut below the floodplain elevation calculated in a maximum of 0.2 m intervals;
b. Cross-sections and contour maps;

Notes:
-An overall surplus cut will be permitted
-The cut/fill calculation should be summarized and presented in tabular format

3.3 ENGINEERING ANALYSIS AND SUPPORTING TECHNICAL REPORTS

Supporting technical reports (soil, hydraulic, geomorphological, geotechnical, costal, and/or slope stability) will be required for a thorough assessment of the proposed cut/fill works and to demonstrate no adverse impacts. QC staff may identify supporting reports required for a balanced cut and fill application, preferably during pre-submission consultation which is highly recommended. The industry standard versions of technical software should be used, and existing regulatory models shall be used where possible, after confirmation with QC during pre-submission consultation. The purpose of such reports is to alleviate Flooding and Erosion Hazard concerns arising from the proposed cut and fill application. For example, supporting reports may be requested to:

- For riverine systems: show that the proposed development activities (i.e. cut and fill) will result in no increase in upstream water surface elevations and no increase in flow velocities in the affected river cross sections under a full range of potential flood discharge conditions (1:2 year to 1:100 year return periods).
    - Compliance with this requirement shall be demonstrated by means of hydraulic analysis completed to the satisfaction of QC technical staff.
    - HEC-RAS is recommended to be used for hydraulic analysis. Only the HEC-RAS version and methods (i.e. 1D steady-state) used in the relevant QC flood mapping model(s) will be accepted for modelling submissions. QC staff can provide this information upon request.
- Show that that the proposed development activities (i.e. cut and fill) will result in no increase in erosion in the affected watercourse cross sections or waterbodies under a full range of potential flood discharge conditions (1:2 year to 1:100 year return periods).

3.4 RISK AND MATERIALS MANAGEMENT PLAN

A risk and materials management plan addressing sediment and erosion control, material use, and safety concerns must be submitted with the application for a balanced cut and fill proposal. This plan should be prepared to address monitoring and management of the project to ensure worksite safety and stability and shall include measures to address for changing conditions such as weather, erosion, sediment migration throughout project's duration. This plan must include:

a. details on sediment and erosion control;
b. construction sequencing;
c. construction monitoring; and
d. contingency plans.

Details on material use, specifically addressing if the material from the cut area will be used in the fill area, or removed offsite and replaced with new material should be noted. Best management practices including reusing existing clean topsoil and limiting staging of machinery to existing disturbed areas should be included.

3.5 POST-COMPLETION REQUIREMENTS

Upon approval and completion of the project, additional documents will be required by Quinte Conservation Authority to ensure the development activities were completed as planned. The documents include:

a. An as-built drawing of the balanced cut and fill area that has been prepared and certified by a Professional Engineer or an Ontario Land Surveyor and must be referenced to geodetic datum. The as-built drawing must include constructed spot elevations with distinctive font/color/symbol overlaid on the approved cut plans.
b. A brief memo that includes a recalculated volume summary table based on as-built conditions.

Where the cut and fill is required to create a suitable building envelope for the construction of a structure, lot grading must be completed, and verification submitted to the satisfaction of QC staff, before permission will be granted for the erection of structures. In all cases where the proponent must verify that the structure meets floodproofing requirements, this will be required after the foundation has been established in addition to any lot grading verification.

4.0 TECHNOLOGIES AND TOOLS

Modern technologies and tools such as 3D modeling, drone surveys and GPS or GNSS systems, can generate accurate cut and fill maps quickly and efficiently. Using the most current industry standard mapping technologies and tools provides benefits in terms of accuracy and cost effectiveness when reviewing applications for balanced cut and fill projects. QC will consider the use of tested and trusted technologies and tools that can produce highly accurate information for the design, calculation and detailed analysis of cut and fill development activities. The Province has created Technical Bulletins as part of a guidance series to support flood hazard identification and management in Ontario and the following document should be reviewed in support of a balanced cut and fill project: *Technical Bulletin – Flooding Hazards: Data Survey and Mapping Specification (December 2023, MNR)*. QC may also consider the use evolving and emerging technologies that assist in improving accuracy to ensure protection that the approval of any application.

5.0 THIRD PARTY REVIEW

Quinte Conservation may engage a third-party expert(s) to review the work for consistency with the evolving state of practice and standard of care. The cost of this will be the responsibility of the applicant.

APPENDIX A – STANDARDS AND TECHNICAL GUIDELINES

Fill placement, excavation, and grade modifications must adhere to the following standards and technical guidelines:

a. Ontario Regulation 41/24: Specifies prohibited activities, exemptions and permits for areas regulated by Conservation Authorities. This includes development activity within regulatory floodplains.
b. Quinte Conservation Shoreline Management Plan and/or engineered Regulatory Floodplain Mapping.
c. Quinte Conservation Watershed Regulation O.Reg. 41/24 Policy Manual (2024).
d. Flooding Hazard Standards: Compliance with Ontario Ministry of Natural Resources Technical Guide – River and Stream Systems: Flooding Hazard Limit (2002).
e. Erosion Hazard Standards: Compliance with Ontario Ministry of Natural Resources Technical Guide – River and Stream Systems: Erosion Hazard Limit (2002).
f. Technical Bulletin – Flooding Hazards: Data Survey and Mapping Specifications, Ontario Ministry of Natural Resources (V. 1.0, December, 2023)