Grand River Conservation Authority
Complete Application Supplementary Checklist
Floodplain Modeling

This checklist is supplemental to the GRCA Complete Application Checklist (2025). It is provided to streamline the review process and assist applicants in providing a complete permit application. The level of detail required for the application will depend on the scope of proposed works, as well as the natural hazards present on site. The checklist should be submitted by the applicant with all the required information as part of submission of a formal permit application. Incomplete applications will not be reviewed.

The checklist applies to the proposal as submitted. For an application to be considered complete, all items identified below are to be submitted unless otherwise noted on the GRCA Complete Application Checklist.

Submission Details

Municipal Address: _____

Project Description: _____

Planning Act File Number: _____

Submitted	Submission Requirements
☐	Floodplain Modelling Report or Section of the SWM Report[1]
☐	Hydraulic Analysis[1]
☐	Hydrologic Analysis (Not required if flows provided by Conservation Authority (CA) staff)[1]
☐	Cover Letter or Comment-Response Matrix in spreadsheet format (resubmissions)
☐	Engineering Plans[1]
☐	Topographic Survey signed by OLS (scale, datum, & coordinate system)
☐	Digital Hydraulic Modelling Files including Digital Elevation Model
☐	Digital Hydrologic Modelling Files (Not required if flows provided by CA staff)
☐	Digital GIS Files (Not required if floodplain is not modified)* Note that GIS data must be in an Esri Geodatabase Feature Classes or GeoPackage Feature Classes. Spatial data must be used Projected CRS - NAD83 CSRS v8 Zone 17 (EPSG: 22717), and Vertical CRS - CGVD2013 (EPSG: 9245). For detailed GIS files submission requirements refer to GRCA Geospatial Data Standards

[1]Signed and stamped by a qualified P.Eng.

*In addition to **GRCA Geospatial Data Standards**, the submitted digital floodplain files should meet following GRCA requirements: the delineated floodplain shall accurately reflect modelling results, contain no isolated internal pockets, and avoid smaller floodplain areas disconnected from the main floodplain.

Submitted	General Floodplain Plan[1]
☐	Watercourse labelled on all plans
☐	Regional Floodplain Lines (existing and proposed) delineated

☐	15 metre regulated allowance
☐	Cross sections (with cross-sections ID and water surface elevations)
☐	Contour lines /elevations (list vertical datum), existing and proposed structures

[1]Signed and stamped by a qualified P.Eng.

Submitted	Floodplain Modeling Report[1]
Hydrological Analysis *(*Not required if flows provided by CA)[1]	
☐	Methods of computing flows, computational procedures, required input data, and modeling parameters
☐	Catchment area delineated using the most accurate data available (topographic survey and the newest LiDAR data)
☐	All hydrologic modelling parameters within the range specified in the relevant reference
☐	Schematic representations of Hydrologic Modeling
☐	Hydrologic Modelling output results
☐	Tables providing summary of results (comparison of pre-development and post-development results where applicable) including location and corresponding cross section number used in hydraulic modelling
☐	Calibration and validation of Hydrologic Modeling provided (required for Engineered Floodplain Mapping only)
Hydraulic Analysis[1]	
☐	Modeling methodology conforming to the Technical Guidelines for Flood Hazard Mapping (Technical Guidelines March 31 2017) including bridge/culvert modeling methodology, computational procedures, required input data, and modeling parameters
☐	Hydraulic model revision tracking sheet
☐	Detailed background notes provided in the description section of the Hydraulic Model (name and date, plan description, vertical geodetic datum, purpose, changes, etc.)
☐	Manning's n values coefficients derived from a recognized standard reference with the specific source clearly cited
☐	Bridge and Culvert modelling parameters and coefficients derived from a recognized standard reference with the specific source clearly cited
☐	Ineffective flow areas shown on all applicable cross sections including section located upstream and downstream of structures
☐	Expansion and Contraction coefficients applied upstream and downstream of bridges and culverts, in accordance with relevant hydraulic modeling references.
☐	Appropriate Boundary Conditions in accordance with relevant hydraulic modeling references Boundary Conditions should be defined to accurately represent the hydraulic conditions, ensuring they are applied at a sufficiently downstream location to avoid influencing modeling results. Boundary conditions discussion should be provided in the report
☐	Identification of any backwater spill area and extensive shallow flooding, where applicable
☐	Hydraulic Analysis output tubular results including comparison of the existing and proposed conditions water surface elevations (presenting all storm events including Regional Storm), velocity and critical flow influence (where applicable)

☐	Calibration and validation of hydraulic modeling, including sensitivity analysis to define calibration parameters (required for Engineered Floodplain Mapping only)
☐	Separate hydraulic modeling plans for the existing geometry and proposed geometry
☐	Demonstration of Safe Access as per GRCA Policy, if required**
☐	Accurate geometry data provided If LiDAR is used for overbank cross section data, 95% accuracy must be met - compared with periodic topographic survey data, conformance to this requirement to be provided

[1]Signed and stamped by a qualified P.Eng.

** Where the floodplain encroaches on the access road, safe access must be demonstrated

ADDITIONAL STAFF COMMENTS

COMPLETE APPLICATION ACKNOWLEDGEMENT	
Applicant/Agent: Please submit the required information along with this form as part of a complete application. Please note that if the application is deemed incomplete, you will be notified and it will not be reviewed by GRCA staff. An agent acting on behalf of a client must provide a copy of the completed checklist to the applicant and landowner.	
I sign and certify that the attached submission includes all the required documentation as noted in the above complete application checklist.	X _____ Signature of Applicant/Agency

General Note: It is the applicant's responsibility to obtain any required approvals under federal and provincial legislation. Consultation with the local municipality is recommended before proceeding with a GRCA permit application.