Form 6c: Land use consent application – to construct a bridge, culvert or pipe in the bed of a watercourse or lake

Please answer all questions fully. The questions provide a guide in order to satisfy the minimum information requirements that must be included with your application as prescribed in Schedule 4 of the Resource Management Act 1991 (RMA). Depending on the scale of your proposed activity, more detailed information and an Assessment of Environmental Effects (AEE) will be required to support the resource consent application.

Officers from the Greater Wellington Regional Council's (GWRC) Environmental Regulation department are available to assist with filling out this form or to clarify information to include with your application. Some basic/standard pre-application advice is provided at no cost.

This form is required to be filled out in conjunction with Form 1 Resource Consent Application

This application form is for the construction of a bridge, culvert or pipe. If you are constructing erosion protection structures please fill in application form 6d. If you are undertaking general works in the bed of a watercourse or lake please fill in form 6a.

Part A: General information on nature and scale of your activity

1. Type of structure proposed

What type of consent are you applying for (please indicate below by ticking the appropriate box)

☐ **River Crossing – Culvert** (any structure which encloses a watercourse and is the width necessary for the crossing. Excludes any river crossing that dams a watercourse)

☐ **River Crossing – Bridge** (any structure over a watercourse which is the width necessary for the crossing. Excludes any river crossing that dams a watercourse)

☐ **Pipe** (any structure which encloses a watercourse and is of a width greater than is necessary for a crossing. Excludes any structure that dams a watercourse)

2. What is the purpose of the proposed structure?

[Continue of a separate page if necessary]

3. Name the watercourse where the works will occur

If the watercourse is an unnamed tributary then what is the name of the stream/river it flows into?

4. Describe the current nature of the watercourse at the proposed site for the works

Nature of channel, ie, meandering or straight:

Water colour/clarity:

Average flow (m^3/sec):

Intermittent or continuously flowing:	
Bed material (eg, rocky, silty):	
Bank material:	
Vegetation:	
Fish and invertebrate life:	

(Note: you may be required to provide an ecological assessment)

Other:	

5. Construction methodology

Please provide a step by step construction methodology for the works, including:

- Details of the works that will be undertaken to prepare the site including construction of any temporary water diversions and access across the stream
- Detailing your proposed methodology for the stream works including the machinery to be used, whether material will be stockpiled and where, any dewatering, whether the works are a one off or ongoing and if ongoing how frequently, volume of any vegetation and bed material to be removed, where and how often will machinery be crossing the stream, whether the works will be staged etc
- Details of mitigation measures proposed to minimise the adverse effects of the works including ecological effects, sedimentation, and effects on other water users
- Details of site rehabilitation and ongoing monitoring once the works are complete

[Continue of a separate page if necessary]

6. Locality map

Show the location and a detailed sketch/plan of your proposed activity. Please show the proposed activity in relation to roads, property boundaries, neighbouring properties, watercourses, wetlands and other wildlife habitats, existing surrounding structures, historic or wāhi tapu sites, key landmarks, and any other relevant features of the surrounding environment. Alternatively you may wish to attach a plan/aerial photograph showing the above information.

Note: Remember to show where north is.

7. Site photographs

Please attach labelled photographs of the site in its present form which include:

- any existing structures at the site
- any eroded areas of bank in the vicinity of the proposed works
- the view of the watercourse downstream of the site
- the view of the watercourse upsteam of the site
- the view of the watercourse and its banks where it will be affected by the works

Please describe the location from which the photographs were taken and indicate whether the proposed site is typical of the watercourse, eg, 10m downstream, from the proposed site, vegetation type typical of the watercourse. Please also provide a scale, eg, have a person in the photograph.

8. Who will be undertaking the work?

9. What are the proposed hours of operation/construction?

10. What is the proposed commencement date of the work?

11. What is the duration of the works?

If the works are to be staged, please provide a timeframe for each stage

12. What is the duration of the works to be undertaken within the watercourse?

13. Have any alternatives been considered when planning the proposal? ☐ **Yes** ☐ **No**

Please explain what these alternatives are and why the proposed option was chosen:

Part B: Design data

Please fill in the following section as fully as possible. **Professional assistance may be required to undertake the calculations required to fill in this section.**

1. **Design analysis**

   Please complete (and tick the identified box) at least one of the following methods of analysis and attach the calculations. Results of flow frequency analysis should be used if available.

   ☐ **Tech Memo 61** – use modified TM61 formula for catchments less than 25km^2

   ☐ **Rational method** – give estimated run-off coefficient "C"

   ☐ **Regional flood estimation** of Hydrology Centre Publication No. 20 Flood Frequency in New Zealand

   When completing design analysis please submit background workings, eg, for catchment area design, provide a map showing the area and how it was calculated.

2. **What is the time of concentration and formula used?** (flow time from the furthest point of the catchment to the site)

3. **What is the design rainfall?** _____ mm/hour [not required for Publication No. 20]

4. **What is the design discharge?** _____ m^3/sec

5. **What is the design discharge frequency?** (return period of annual exceedance probability) _____

6. **Do you have any measured flows?** ☐ Yes ☐ No

   If Yes, please attach showing date, discharge (m3/sec), estimated frequency, and method of measurement

7. **What is the highest known flood level at the site?** _____ metres

8. **What was the estimated frequency for this flood event?** _____ years

9. **What was the method for obtaining this flood level?**

10. **Are there any other bridges, culverts, or pipes nearby on the same channel?** ☐ Yes ☐ No

    If Yes, give details:

11. **What is the velocity of the design flood for the proposed structure?** _____ m/sec

12. **Are the flood levels affected by backwater effects?** ☐ Yes ☐ No

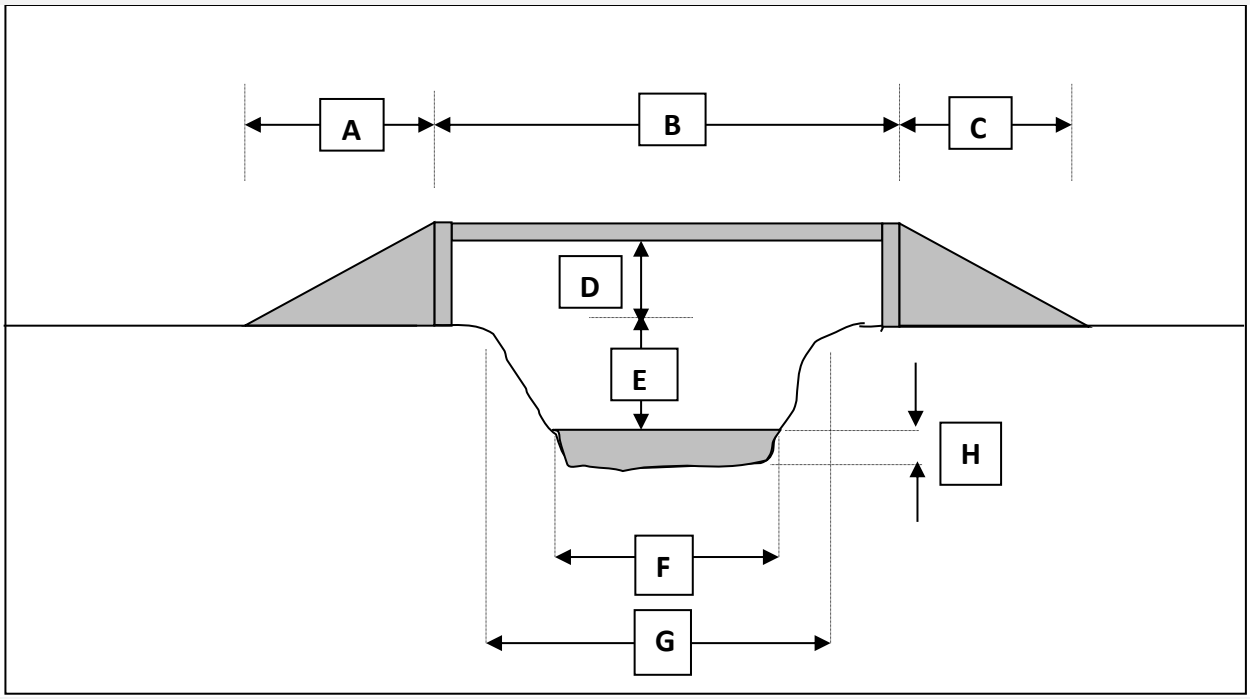
    If Yes, give details:

Part C: Construction of a bridge

Please fill in the following section as fully as possible if your application is for constructing a bridge. If your application is for constructing a culvert or pipe, please proceed to Part D. **Professional assistance may be required to fill in this section adequately.**

1. **Will the abutments of the bridge be outside the banks of the watercourse, in the banks of the watercourse or in the bed of the watercourse?** Please explain:

2. **Please fill in the dimensions shown on the diagram in the list below** (If the bridge design is different from that below please include a diagram showing all dimensions).



2A. Length of bridge approach (metres)

2B. Length of bridge (metres)

2C. Length of bridge approach (metres)

2D. Height of bridge underside above natural ground level (metres)

2E. Height of natural ground level above river/stream bed (metres)

2F. Bed width of river/stream channel (metres)

2G. Top width of river/stream channel (metres)

2H. Average depth of water in the river/stream? (metres)

3. **What is the distance from channel edge to abutment edge?** (metres)

4. **What is the width of any secondary overflow path?** (metres)

5. **What is the depth of any secondary overflow path?** (metres)

Please proceed to Part E

Part D: Construction of a culvert or pipe

Please fill in the following section as fully as possible if your application is for constructing a culvert or pipe. If your application is for constructing a bridge, please go back to Part C. **Professional assistance may be required to fill in this section adequately.**

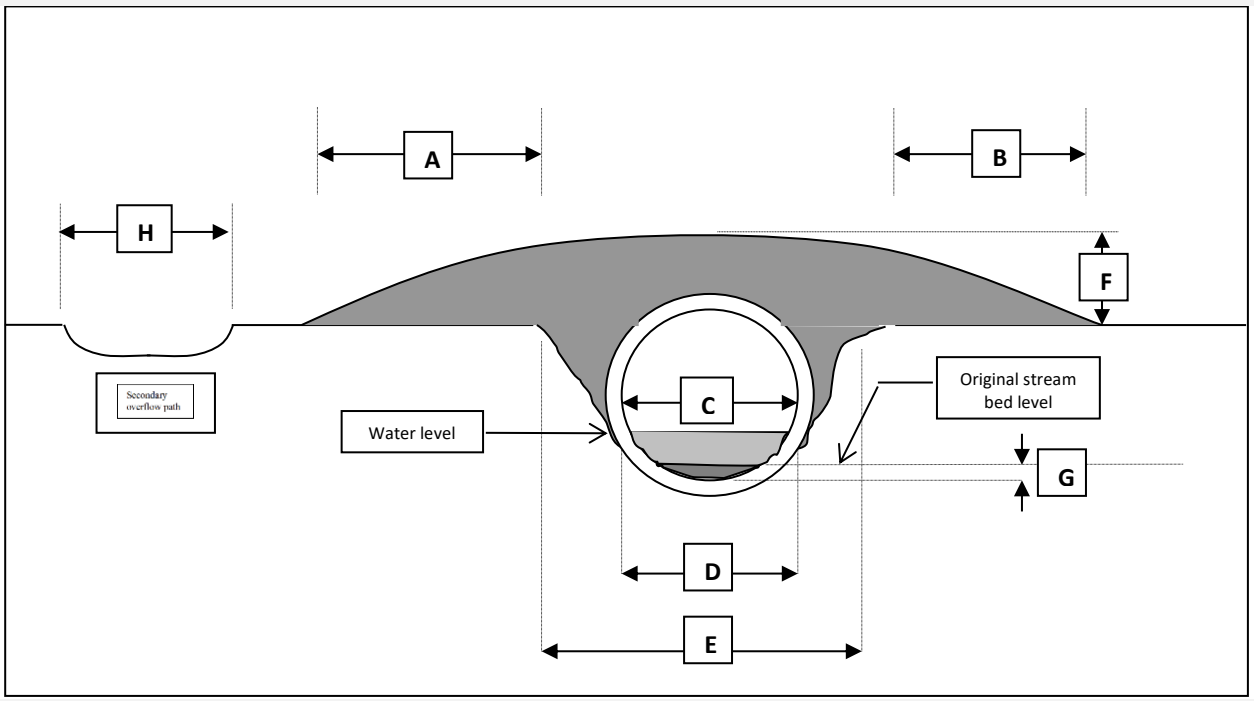
1. **What material is the proposed culvert or pipe to be constructed of?**

2. **What is the length of the culvert/pipe you intend to place in the stream?**

3. **At what gradient will the culvert/pipe be laid in the stream?**

4. **What is the gradient of the stream bed?**

5. **Please fill in the dimensions shown on the diagram in the list below** (If the bridge design is different from that below please include a diagram showing all dimensions).



5A. Length of culvert/pipe approach (metres)

5B. Length of culvert/pipe approach (metres)

5C. Dimensions of circular culvert/pipe (metres)

5D. Dimensions of box culvert/pipe metres – width metres – height

5E. Bed width of river/stream channel (metres)

5F. Depth of fill over culvert/pipe (metres)

5G. Depth of culvert/pipe base below original stream level (metres)

5H. Secondary overflow path metres – width metres – height

Please proceed to Part E

Part E: Assessment of effects on the environment (AEE)

1. Water quality

What are the actual and potential effects of your proposed activity in terms of water quality and loss of habitat and how do you propose to avoid or minimise these effects?

In consideration of this question, please provide detailed comment on each of the points listed below:

Sediment runoff:

Building debris:

Storage and use of machinery fuels:

Concrete:

Other objects or chemicals entering the watercourse:

[Continue on a separate page if necessary]

Note: For guidance on erosion and sediment control measures please refer to the Erosion and Sediment Control for Small sites our web site http://www.gw.govt.nz/council-publications/pdfs/Small%20sites%20guidelines1.pdf or the booklet available from the Greater Wellington Regional Council. To get a booklet sent out to you please call the Environment Helpdesk on 0800 496 734.

2. Machinery

Describe the extent to which machinery is required to undertake your activity and whether machinery is required to enter the watercourse. How do you propose to minimise the effects of machinery in or near the watercourse? How long will any machinery remain in or near the watercourse?

Note: If the works are significant in terms of the machinery required then a management plan for the use of machinery during the works may be required as part of the application.

In consideration of this question, please provide detailed comment on each of the points listed below:

Use of machinery on the banks of a watercourse:

Use of machinery in the bed of a watercourse:

Storage and use of machinery fuels and/or chemicals:

[Continue on a separate page if necessary]

3. Fish passage and spawning/migration

What are the actual and potential effects of your proposed activity in terms of fish passage and how do you propose to avoid or minimise these effects?

In consideration of this question, please provide detailed comment on each of the points listed below:

Placement of structures in the watercourse:

Alterations to water flow:

Physical barriers to fish passage:

Timing and duration of works that may affect fish spawning/migration:

[Continue on a separate page if necessary]

4. Erosion

What are the actual and potential effects of your proposed activity in terms of erosion and how do you propose to avoid or minimise these effects?

In consideration of this question, please provide detailed comment on each of the points listed below:

Placement of structures in the bed or banks of the watercourse including potential downstream erosion:

Change in water flow velocities and water flow paths:

Removal of vegetation associated with the works:

[Continue on a separate page if necessary]

5. Neighbours and other people

What are the actual and potential effects of your proposed activity in terms of effects on neighbours and/or other people and how do you propose to avoid or minimise these effects?

In consideration of this question, please provide detailed comment on each of the points listed below:

Neighbours:

Department of Conservation/Fish & Game:

Iwi/Heritage New Zealand:

Greater Wellington Regional Council Delivery:

Recreational users of the water source:

Downstream water users (eg, those that take water from the stream):

Utility providers with infrastructure in the immediate vicinity:

Other people who may be affected by the work:

[Continue on a separate page if necessary]

6. Other effects

Are there any other actual or potential effects of your proposed activity and how do you propose to avoid or minimise these effects (for example, visual effects, other physical effects)?

In consideration of this question, please provide detailed comment on each of the points listed below:

Downstream effects:

Other effects:

[Continue on a separate page if necessary]

Part F: Assessment against statutory documents

1. **Part 2 of Resource Management Act 1991 (RMA)**

   Have you provided an assessment against Part 2 (Purpose and Principles) of the RMA?
   http://www.legislation.govt.nz/act/public/1991/0069/latest/DLM231904.html

2. **National Environmental Standard (NES) or National Policy Statement (NPS)**

   Have you provided an assessment of the proposal against the relevant objectives and policies of any National Environmental Standard (https://environment.govt.nz/acts-and-regulations/regulations/) or National Policy Statement (https://environment.govt.nz/acts-and-regulations/national-policy-statements/)?

3. **Regional Policy Statement (RPS)**

   Have you provided an assessment of the proposal against the relevant objectives and policies of any proposed or operative Regional Policy Statement (http://www.gw.govt.nz/rps/)?

4. Natural Resources Plan (NRP)

Have you provided an assessment of the proposal against the relevant objectives, policies and rules of the operative or proposed Natural Resources Plan (https://www.gw.govt.nz/your-region/plans-policies-and-bylaws/plans-and-reports/environmental-plans/natural-resources-plan/)?

5. Other relevant statutory documents

Have you provided an assessment against all other relevant statutory documents?

6. Permitted activities

Will you be undertaking any permitted activities as part of the proposed works? (eg, a wataer take to facilitate dewatering, minor earthworks)

7. Other activities that are part of the proposal

Are there any other activities that are part of the proposed bridge/culvert/pipe which may require consent? (eg, the discharge of contaminants (sediment laden water) into a watercourse)

8. Value of investment

If you are applying to replace an existing consent, please provide an assessment of the value of the investment to which the activity relates.

Part G: Monitoring and management of your activity

1. **What monitoring and management do you propose during the works to ensure any potential adverse effects on the environment are avoided, remedied or mitigated?** (This may include, but is not limited to, monitoring of water quality and sediment discharges, monitoring of equipment to be used, briefing of contractors/operators undertaking the works, contingency measures etc). Include details on what is to be monitored, when, how, and why.

[Continue on a separate page if necessary]

2. **How will you ensure all the contractors/operators undertaking the works are aware of all the consent requirements?**

3. **What ongoing monitoring and management do you propose after the works are complete to ensure any potential adverse effects on the environment are avoided, remedied or mitigated?** (eg, how will stream bed and bank stability, erosion, fish passage etc be monitored and managed?)