



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. Officers from the Greater Wellington's Environmental Regulation Department are available to assist with filling out this form or to clarify information to include with your application.

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 on a separate page if necessary]

3. Name the watercourse where the works will occur?

(if the watercourse is an unnamed tributary than what is the name of the stream/river it flows into?)

Part A: general (continued)

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.

Part A: general (continued)

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 upstream 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 e.g. 10m downstream, from the proposed site, vegetation type typical of the watercourse. Please also provide a scale e.g. 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 proposed completion date?

12. Have any alternatives been considered when planning the proposal? Yes No

Please explain:

13. As part of your proposal will you be undertaking any of the following activities?

- Diversion of water
- Bulk earthworks adjacent to any watercourse

Note: If you have ticked any of the above boxes you may be required to fill out an additional form to be submitted as part of your application. Please contact the Environment Helpdesk at Greater Wellington if you are unsure which forms you may require.

Part B: Design data

Please fill in the following section as fully as possible. Professional assistance may be required in filling in this section adequately.

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 25km²
- Rational method** – give estimated run-off coefficient “C”
- Regional flood estimation** of Hydrology Centre Publication No. 20 Flood Frequency in New Zealand

2. What is the time of concentration? (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? _____ m³/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

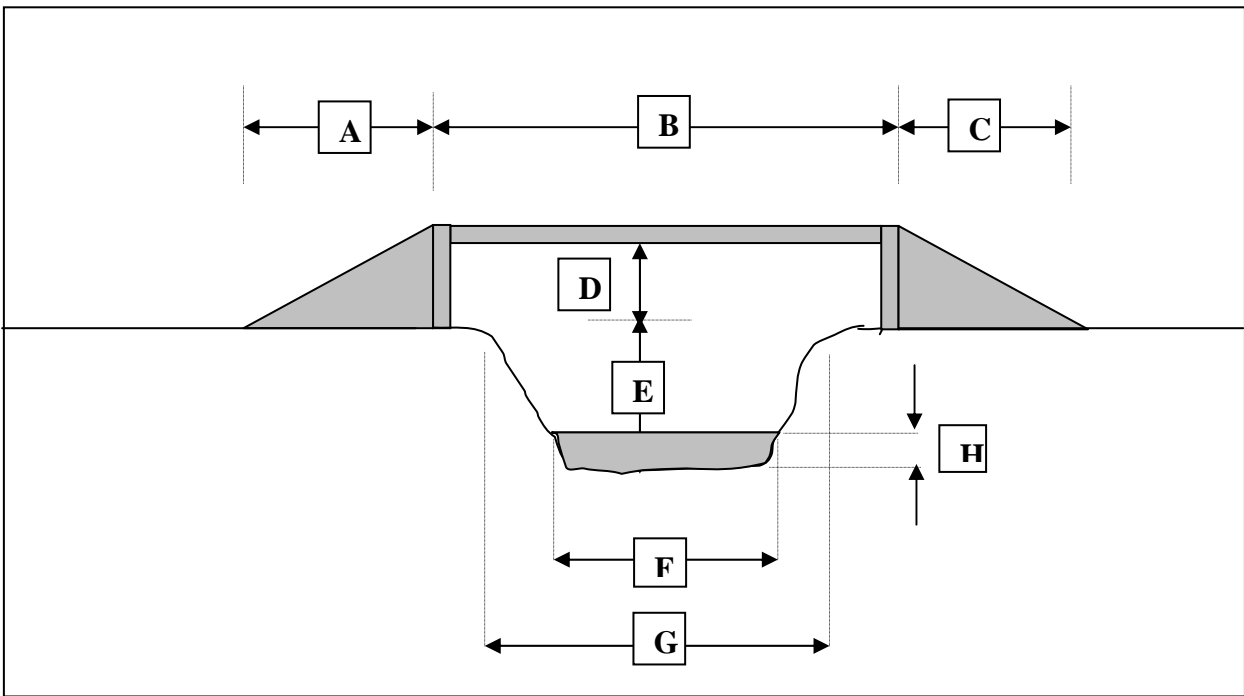
If Yes, give details:

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 you 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.

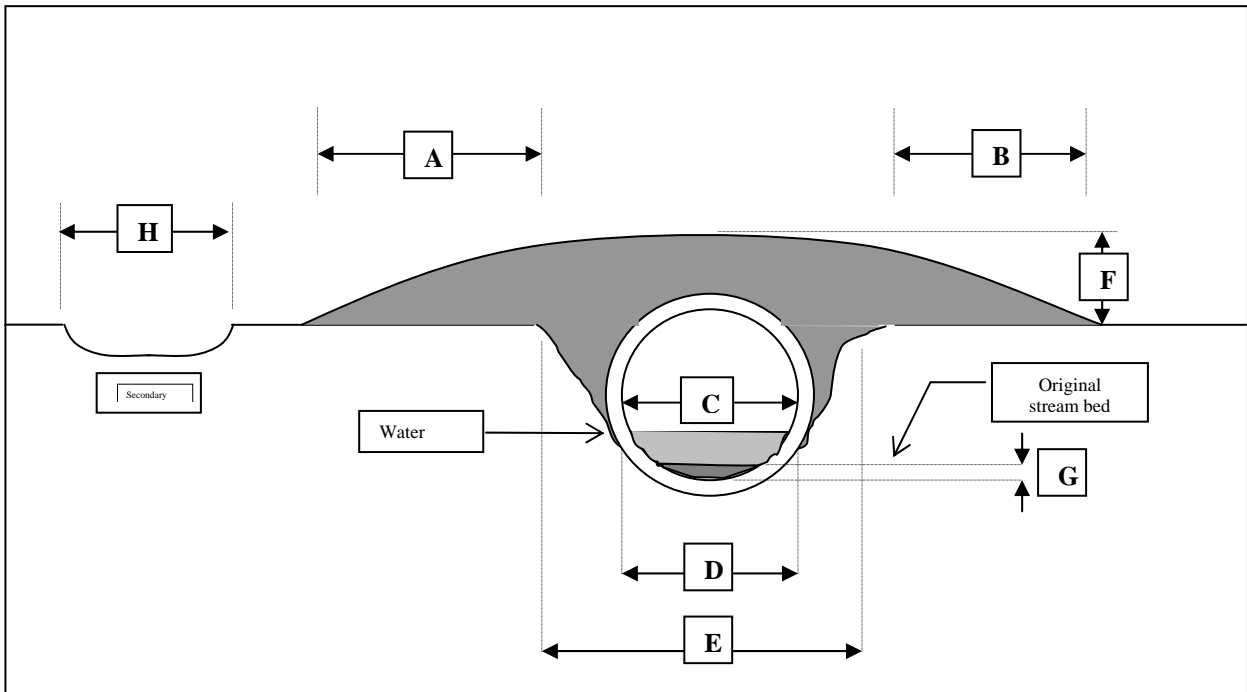
1. What material is the proposed culvert or pipe to be constructed of?

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) _____

5C Dimensions of box culvert/pipe _____ (metres – width) _____ (metres – height)

5D Bed width of river/stream channel (metres) _____

5E Top 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 – depth)

Please proceed to Part E

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

If your proposed activity is likely to have a significant impact on the environment you will need to complete a more detailed environmental assessment in accordance with the Fourth Schedule of the Resource Management Act 1991.

Water quality

1. 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:

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 Greater Wellington. To get a booklet sent out to you please call the Environment Helpdesk on 04 830 4255.

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

Machinery

2. 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 near or in the waterway?

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:

Machinery on the banks of a watercourse:

Machinery in the bed of a watercourse:

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:

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

Physical barriers to fish passage:

Timing 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:

Change in water flow velocities and water flow paths:

Removal of vegetation associated with the works:

[Continue on a separate page if necessary]

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

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:

Other people who may be affected by the works:

Upstream ponding or flooding:

Cultural, heritage and archaeological values:

Recreational users of the water course

[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:
