



Ministry
of Forests and
Range



FIA Activity Standards Document

Land-base Program, Restoration & Rehabilitation
Component, Aquatic Activity Area

Fish Passage Activity (Engineering Activities)

(crossing design, construction and
post-construction inspections)

Version 5.0

Fish Passage Activity (Engineering Activities): Restoration and Rehabilitation Component, Aquatic Activity Area

This activity standards document is intended to outline Ministry of Forests and Range Engineering criteria for proponents of Fish Passage Activity projects. Engineering Activities are focused on the **design, construction and post-construction inspections** for the restoration of fish passage at priority fish stream crossings on Forest Service roads (FSRs), Road Permit roads (pre-1995), and non-status roads.

Project eligibility for targeted fish passage funding is provided in the document "FIA Eligibility Criteria," available on line at: <http://www.for.gov.bc.ca/hfp/fish/FishPassage.html>. Targeted funds will be used for priority watersheds determined by the Ministry of Environment (MOE), however, Recipient discretionary funding can be used for local priorities. Pre-design activities, such as assessments and prioritization, are separate activities.

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ARTICLE 1: DEFINITIONS AND OBJECTIVES

Definitions

1.1 In this document:

“bridge” means a temporary or permanent structure carrying a road above a stream or other opening.

“coordinating registered professional” has the same meaning as given in the *Guidelines for Professional Services in the Forest Sector – Crossings, March 2005*.

“culvert” means a transverse drain pipe or log structure covered with soil and lying below the road surface.

“major culvert” means a stream culvert having a pipe diameter of 2000 mm or greater, or a maximum design discharge of 6m³/sec or greater.

“non-status forest road” (non-status road) means an existing road on Crown land that is not being used under any authorization by a government agency.

“professional engineer” has the same meaning as given in the *Engineers and Geoscientists Act*, Association of Engineers and Geoscientists of British Columbia.

“referral obligations” means the submission of prescriptions or design plans and specifications at various stages of planning and development to other agencies to ensure that the requirements of the *Forest and Range Practices Act*, *Federal Fisheries Act*, the *Water Act* and other related legislation are met.

“registered professional” means a member in good standing with one of the following professional associations: Association of BC Forest Professionals, Association of Professional Biologists of British Columbia (*College of Applied Biology Act*), Association of Professional Engineers and Geoscientists of British Columbia, and British Columbia Institute of Agrologists.

“safe fish passage” means safe passage of fish through culverts for the purposes of spawning, rearing or migration.

“stakeholder” means any individual, group, or private or public organization able to affect, be affected by, or believe might be affected by, a decision or activity.

“stream culvert” means a culvert used to carry stream flow in an ephemeral or perennial stream channel from one side of the road to the other.

ARTICLE 2: FISH PASSAGE RESTORATION PROJECTS

Eligible Projects

2.1 Four types of projects are eligible for FIA funding:

(a) Modifications to Structure or Stream Channel:

Site modifications can consist of but are not restricted to:

- i. the installation of fish baffles;
- ii. alterations to the stream channel to change backwater conditions;
- iii. other activities related to site restoration for improved fish passage.

(b) Repairs to a Culvert or Bridge (Structural):

Structural repairs to an existing priority stream culvert or bridge, to facilitate fish passage.

(c) Culvert Removal & Channel Restoration:

Removal of a priority stream culvert that is blocking fish passage, and re-establishment of the stream channel.

- i. applies most often to environmental maintenance projects on non-status roads;
- ii. typically results in removal of both the crossing structure and vehicle access;
- iii. consider conducting project concurrently with other environmental maintenance projects. http://www.for.gov.bc.ca/hcp/fia/landbase/enviro_maintenance.htm.

(d) Culvert Removal & Replacement with Fish Passage Structure:

Removal of a priority stream culvert that is blocking fish passage, and replacement with a new suitable fish passage culvert or bridge.

(Note: On Non-Status Roads, culvert and bridge replacement activities are generally not eligible for FIA funding unless there are extenuating circumstances, to maximize FIA investment benefits.)

ARTICLE 3: GENERAL REQUIREMENTS

Project Implementation

- 3.1 **Figure 1 “Fish Passage Activity Flow Chart”** (attached) shows the linkage between the various project phases of:

- (1) Assessment / Planning,
- (2) Proposal Submission,
- (3) Design,
- (4) Construction,
- (5) Inspections / Conformance, and
- (6) Post Construction Inspections.

The “**Activity / Process Tracking Checklist**” in Appendix 1 provides a reminder of the linkages between the associated submission requirements and the approvals. Not For Submission.

Contractual and Legal Requirements

- 3.2 Carry out all work phases consistent with the requirements of this FIA Activity Standards Document, the “Ministry of Forests and Range General FIA Standards (FS 1001),” the *Forest and Range Practices Act*, and its Regulations as applicable, and all other pertinent provincial and federal legislation.

Qualifications and Duties of Personnel

- 3.3 The Recipient is responsible for project management and its duties, such as to:
- (a) Labour & Materials:
 - i. retain and coordinate the activities of required consultants (such as structural, hydrological, geomorphological and biological);
 - ii. prepare and administer service contracts; and
 - iii. coordinate acquisition and delivery of required materials.
 - (b) Referrals & Notifications:
 - i. refer and provide copies of all designs to the MFR district engineering officer;
 - ii. make all required referrals to government agencies and stakeholders;
 - iii. obtain all required approvals and permits;
 - iv. as appropriate, incorporate the requirements of referrals;
 - v. provide all required written notification at appropriate stages of the project; and
 - vi. schedule the timing of fish passage restoration projects with stakeholders.
 - (c) Document Control:

Administer and retain copies of all legally required documentation associated with:

 - i. design approvals;
 - ii. construction and inspections;
 - iii. sign-off conformance of completed work; and
 - iv. other necessary documentation.
 - (d) a design for structural repairs to a fish stream culvert;
 - (e) a design for modifications to a channel for the benefit of improving fish passage.

Technical References

- 3.4 The following reference documents describe acceptable forest practices that must be carried out by a registered professional. The procedure chosen must serve the project objectives, and be consistent with legislative requirements and professional practice:
- (a) Pre-design activity standards available at:
<http://www.env.gov.bc.ca/wld/fia/instream.html>
 - (b) Standards for environmental maintenance projects:
http://www.for.gov.bc.ca/hcp/fia/landbase/enviro_maintenance.htm
 - (c) *Fish-Stream Crossing Guidebook* (March 2002), available at:
<http://www.for.gov.bc.ca/tasb/legsregs/fpc/FPCGUIDE/Guidetoc.htm>
<http://www.for.gov.bc.ca/tasb/legsregs/fpc/FPCGUIDE/FishStreamCrossing/FSCGdBk.pdf>

- (d) *Forest Service Bridge Design and Construction Manual*, and other relevant guidelines, standards, specifications, documents for design and construction of Ministry of Forests and Range bridges and major culverts:
http://www.for.gov.bc.ca/hth/engineering/Bridges_And_Major_Culverts.htm
- (e) *Engineering Manual*, Chapter 4, “Design and Construction of Bridges and Major Culverts” available through:
http://www.for.gov.bc.ca/hth/engineering/Bridges_And_Major_Culverts.htm
- (f) *Guidelines for Professional Services in the Forest Sector – Crossings*, prepared by the Joint Practices Board (Association of Professional Engineers and Geoscientists of BC and Association of BC Forest Professionals) available at:
<http://www.apeg.bc.ca/ppractice/documents/ppguidelines/guidelinesforestcrossings.pdf>.
- (g) Road Inspection Reports, *Forest Road Engineering Guidebook (June 2002)*:
<http://www.for.gov.bc.ca/tasb/legsregs/fpc/FPCGUIDE/Road/FRE.pdf>
- (h) *Best Management Practices Handbook*:
http://www.for.gov.bc.ca/hth/engineering/documents/publications_guidebooks/publications_reports/bmp_hndbk_nov_01.pdf
 - i. WRP Technical Circular Number 9:
http://wlapwww.gov.bc.ca/wld/documents/wrp/wrtc_9.pdf
 - ii. WRP Technical Circular Number 11:
http://wlapwww.gov.bc.ca/wld/documents/wrp/wrtc_11.pdf

ARTICLE 4: PLANNING PROJECTS

Candidate Projects and Project Priorities

- 4.1 Identify potential FIA Fish Passage restoration projects that satisfy the “**FIA Eligibility Criteria**,” <http://www.for.gov.bc.ca/hcp/fia/landbase/fishpassage.htm> and conform to priority sites for mitigative works consistent with the Strategic Approach to Fish Passage. It is expected that local knowledge of problem sites and recognition of special concerns within a management unit area, together with knowledge about the importance of restoring fish passage, will play some role in identifying candidate projects.

Proposed Bridge or Major Culvert Projects on FSRs

- 4.2 During the planning stage and prior to design of new or replacement bridges, major culverts, and other stream culverts located on fish streams on FSRs, a Recipient (with agreement of the Road Use Permit holder that is responsible for road maintenance) must give written notice to the district manager of the location of the bridges or culverts.
- 4.3 Within 30 days of receiving a notice referred to in paragraph 4.2, the district manager, by written notice given to the Recipient and Road Use Permit holder, may specify requirements respecting the design, construction or installation of those bridges or culverts. In the case of a bridge on an FSR, the district manager must complete an FS 1288 form and issue it to the Recipient and Road Use Permit holder. The FS 1288 form is available at http://www.for.gov.bc.ca/hth/engineering/documents/Bridges_and_MC/RUPBridgeConditions.doc

ARTICLE 5: DESIGN

Prescription and Design Requirements

- 5.1 Before commencing work on a prescription or design, the Recipient must provide a completed “Confirmation Statement of Project Eligibility” form, to the FIA Administrator. (*See Appendix for form.*)
- 5.2 All projects on FSRs must be referred to the MFR District Engineering Officer and the MFR Regional Structures Engineer, during the “**preliminary design phase**” for review and comment.
- 5.3 **Design of Major Culvert or Bridge:**
A “professional engineer” must be retained to provide the following for all new or structural repair projects:
- (a) designs;
 - (b) construction drawings; and
 - (c) specifications of project details.

5.4 **Non-Major Culvert and Stream Channel Projects:**

A “registered professional” must be retained for stream culvert or channel restoration works to make:

- (a) a design for modifications to a channel for the benefit of improving fish passage;
- (b) a design for structural repairs to a fish stream culvert;
- (c) a design and prescription for removal and channel restoration;
- (d) a design for the culvert removal and the new replacement fish stream culvert.

Mandatory Project Requirements

5.5 Managing a successful project requires adherence to several mandatory requirements. These mandatory requirements shall include but may not be limited to the following:

- (a) **Design Life:** All new structures will be designed as permanent structures, unless specified otherwise through the referral process illustrated in Figure 1.
- (b) **Design Quality:** Suitable preparation of prescriptions or designs, construction drawings, and specifications to adequately communicate the requirements of the project to construction personnel.
- (c) **Sign and Seal:** All designs for new bridges and major culverts, or for structural repairs to existing bridges and major culverts, must be signed and sealed by a Professional Engineer.
- (d) **CRP:** All bridges and major culverts must be constructed with the involvement of a Coordinating Registered Professional. See the *Guidelines for Professional Services in the Forest Sector – Crossings* prepared by the Association of Professional Engineers and Geoscientists available at:
<http://www.apeg.bc.ca/ppractice/documents/ppguidelines/guidelinesforestcrossings.pdf>. Also refer to section 4.5 “Design Requirements for Bridges and Major Culverts” of the Ministry’s Engineering Manual for additional information on the roles and responsibilities of the CRP available at:
http://www.for.gov.bc.ca/hth/engineering/documents/publications_guidebooks/manuals_standards/Eng-Manual.pdf.
- (e) **Professional Biologist:** The Coordinating Registered Professional or Recipient will determine if a Professional Biologist trained and experienced in fish biology should be retained to:
 - i. provide review comments on: prescriptions, or design plans and specifications, during their development;
 - ii. carry out site inspections during construction as required.
- (f) **Person Responsible:** The person who takes responsibility for a prescription or design must:
 - i. provide a statement (either in a report, on the design drawings, or in a separate letter) that the prescription or design was prepared consistent with the requirements of the applicable FIA Activity Standards Document, (*specify title, version number and date*), the Forest Road Regulation or Forest Planning and Practices Regulation as appropriate, and all other applicable legislation.
- (g) **Design Conformance:** All bridges must be designed and constructed in general conformance with the *Forest Service Bridge Design and Construction Manual* (FSBDCM) available at http://www.for.gov.bc.ca/hth/engineering/Bridges_And_Major_Culverts.htm. If alternative crossing structures are contemplated that deviate from the FSBDCM or conventional culverts, obtain **approval (for FSRs) or advice (non-FSRs)** about suitability from the Ministry of Forests and Range, Regional Structures Engineer, prior to commencing a detailed design.
- (h) **Construction Drawing Requirements:** All projects require a set of construction drawings consisting of the general arrangement drawings supplemented with detailed superstructure and substructure drawings and other fabrication, material, and construction specifications:

A. General Arrangement Drawings: The contents for bridge and major culvert general arrangement drawings include:

 - i. site location key map)
 - ii. designer’s name (and seal)
 - iii. name of the stream, road, and station (km) and adequate information to detail the location of the structure
 - iv. design vehicle configuration for load and alignment

- v. design code references (e.g., CAN/CSA S6 – Canadian Highway Bridge Design Code, Canadian Foundation Engineering Manual) or other design guidelines
- vi. expected life of the permanent structure in place
- vii. design high-water elevation for bridges and design discharge
- viii. clearances between the design high-water level and soffit (low point of underside of superstructure) of bridges
- ix. details of debris passage or management strategies, if required
- x. road approaches and grades, including width requirements (e.g., allowance for vehicle side tracking) and side slopes, to a sufficient distance back from the bridge to show potential problems, or to the end of the first cut or fill)
- xi. dimensioning and labelling of component parts (to be confirmed with the shop drawings
- xii. connection requirements for component elements
- xiii. drawings scales
- xiv. relevant site plan and profile data. For suggested contents, see section 4.8 “Site Data and Survey Requirements for Bridges and Major Culverts” and sample general arrangement drawings (Figures 4-1 and 4-2) in the Ministry’s Engineering Manual http://www.for.gov.bc.ca/hth/engineering/documents/publications_guidebooks/manuals_standards/Eng-Manual.pdf.
- xv. location (vertical and horizontal) of proposed structure relative to field reference points
- xvi. deck elevations at bridge ends
- xvii. possible ford or temporary bridge crossing locations
- xviii. road and bridge or culvert signs
- xix. approach barriers, if required
- xx. rip rap areal coverage
- xxi. limit of construction for contract purposes
- xxii. special provisions related to the unique nature of the site and crossing, including specific instructions to bidders related to process or results, as appropriate
- xxiii. special instructions relating to material erection, installation standards, requirements, or methods as deemed necessary

B. Detailed superstructure and substructure drawings: The suggested contents for detailed bridge and major culvert drawings are described in the following sections of the Ministry’s Engineering Manual available at http://www.for.gov.bc.ca/hth/engineering/documents/publications_guidebooks/manuals_standards/Eng-Manual.pdf:

- i. section 4.11.2 “Bridge superstructure drawing requirements”
 - ii. section 4.11.3 “Bridge sub-structure drawing requirements”
 - iii. section 4.11.5 “Major culvert drawing requirements”
- (i) **MFR Structure Identifier:** All new fabricated bridge superstructures or major culverts, to be installed on an FSR, must be permanently labelled with unique identifier supplied by the MFR Regional Structures Engineer.
- (j) **Non-Conventional Designs:** Always first consider the use of conventional structures for all new designs. Where project proposals consider proprietary or non-conventional bridge or major culvert structures (i.e., structures, materials, or material combinations not captured by the FSBDCM), the recipient must analyze and evaluate the relative cost effectiveness of these alternative structures against conventional structures such as described in the FSBDCM. The use of non-conventional structures are acceptable only if the recipient can demonstrate that they have equal or lesser costs, and are comprised of materials or material combinations that have the same or better strength and durability, compared to permanent conventional structures over the design life. Additionally:
- i. where such projects are required to be tendered, the recipient must carry out a fair and competitive solicitation that will include both the alternative and conventional structures;
 - ii. adequate specifications must be provided to bidders for both the alternative and conventional structures;
 - iii. alternative and conventional structures must be provided with suitable erosion and scour protection of the stream channel and sub-structure foundation with consideration of minimizing long term maintenance particularly on high energy streams;

- iv. where tendering is not required, the recipient must conduct a cost comparison analysis to demonstrate relative cost effectiveness of the proposed alternative non-conventional structure; a cost comparison analysis of conventional and non-conventional designs must include consideration of costs for engineering design, supply and fabrication of materials, transport of materials, installation, construction supervision and monitoring, maintenance inspections and long-term maintenance costs over the design life. The requirement for a comparative cost analysis may be waived with agreement from the Regional Structures Engineer;
- v. the recipient will forward the compiled quotes (in the case of tendered projects), or cost estimates (for non-tendered projects), along with project details, drawings, and the results of the independent external peer review described in clause 5.5(j)(vi) and comparative cost analysis, to the Regional Structures Engineer for **approval (for FSRs) or advice (non-FSRs)**, prior to making financial commitments;
- vi. as part of quality assurance / quality control, an independent external peer review by a professional engineer of the non-conventional structure design that is prepared by another professional engineer must be carried out prior to the design being submitted to the Regional Structures Engineer. The external peer review should consider the geotechnical and structural engineering aspects of the design and drawings, as appropriate, to confirm that the alternative structure will perform satisfactorily and meets the requirements of these standards. The external reviewer must submit a signed, sealed and dated letter or report to the professional engineer who prepared the design, and the recipient will include this submission with the design notes documentation for non-conventional structures specified in clause 6.7(f). The report should include limitations and qualifications with regards to the peer review. The requirement for an external peer review may be waived with agreement from the Regional Structures Engineer. Where an external peer review has been carried out already for a specific non-conventional design configuration, it would not need to be repeated unless of course the significant aspects of the design have changed. If an external review will not be repeated, the results from the original and relevant independent external peer review should still be appended to the design notes package of each non-conventional structure design.

Bridge Materials Fabrication Requirements

- 5.6 As a measure of quality assurance, all new, steel, pre-cast concrete, and treated timber, bridge materials that will be **installed on FSRs** must be inspected at the fabrication plant by inspectors retained directly by the Ministry of Forests and Range.
- 5.7 The Recipient will incorporate the Ministry of Forests and Range requirements for materials and fabrication requirements, including in-plant inspections by the Ministry's inspector, as provided for in the Standard Bridge Material Templates, into specifications for acquisition of any materials for any new or replacement bridges constructed **on FSRs**. The standard templates are available at http://www.for.gov.bc.ca/hth/engineering/Bridges_And_Major_Culverts.htm.

District Manager's Approval / Acceptance Prior to Construction

- 5.8 **FSR:** For projects on FSRs or within the FSR right-of-away, the Recipient will forward a copy of the completed prescriptions or designs, construction drawings and specifications to the district manager for review and **approval** prior to commencement of construction. *(See Appendix for form)*.
- 5.9 **Non-FSR:** For projects on roads other than FSRs, the Recipient will request the district manager's signature that a project is **accepted** and may proceed to construction. *(See Appendix for form)*. As the district manager will not be approving the prescriptions or designs, construction drawings and specifications, the Recipient does not need to submit these documents with the form.

ARTICLE 6: CONSTRUCTION

General

- 6.1 Warning signs and/or barriers must be in place before the construction work commences and, during the course of the work, on the approach roads to protect road users. On FSR projects, district manager pre-approval is required prior to any traffic control devices/signage being put in place.

Notification Requirements Prior to Works

- 6.2 As necessary, provide all required written notification to the appropriate agencies (e.g., Ministry of Forests and Range, Ministry of Environment, Integrated Land Management Bureau, or Department of Fisheries and Oceans) before any equipment works are carried out at the crossing site. In all cases, provide the district manager with:
- (a) **at least 30 days written notice** before the commencement of any equipment operations on FSRs;
 - (b) **at least 10 days written notice** before the commencement of any equipment operations on road permit roads and non-status roads.

Changes to Works

- 6.3 CHANGES to Works shall be addressed as follows:
- (b) substantial changes (or anticipated changes) to project scope for works on an FSR require notification to the district manager and the FIA administrator;
 - (c) unforeseen site conditions must be reported to the recipient and the coordinating registered professional by the contractor or field personnel prior to the continuation of works;
 - (d) modification to a design addressing unforeseen site conditions:
 - i. must be approved in writing by the original “signing/sealing” professional, and
 - ii. approved in writing by the district manager for works on FSRs, before being implemented;
 - (e) notify appropriate agencies if a soil erosion event occurs that may have a material adverse effect on adjacent forest resource values.

Fabrication and Construction Documentation

- 6.4 Documentation of materials used, along with material fabrication and as-built records for the bridge, major culvert or other stream culvert on a fish stream, must be obtained during fabrication and construction.

Project Records

- 6.5 The person responsible for construction must obtain and retain the following as-built records:
- (a) pertinent construction data including, but not limited to:
 - i. any pile driving records,
 - ii. hammer type,
 - iii. penetration,
 - iv. set criteria, and
 - v. any critical dimensions;
 - (b) fabrication plant inspection reports, including:
 - i. mill test certificates, and
 - ii. concrete test results;
 - (c) shop or as-built fabrication drawings;
 - (d) concrete and grout test results; field compaction results; confirmation of scour protection requirements;
 - (e) footing base elevation, deck elevation, and alignment location; and
 - (f) other pertinent fabrication, field, and construction data.
- 6.6 As-built drawings are the “approved for construction” drawings (which may in fact be the approved design drawings), marked up to show all significant variations from the original design. Mark-ups should show “as constructed” details of the records kept by the construction inspector (see the preceding list). The as-built drawings must be signed (and sealed, where applicable) by the professional engineer (for a bridge or major culvert), or registered professional (for other eligible fish restoration projects) in charge of ensuring that the as-constructed structure is in general conformance with the design. Where the original design has been modified, these drawings should have been amended accordingly by the designer before the as-built notes and details are inserted.

Documentation Submission Requirements after Construction

- 6.7 Upon completion of the construction work, the Recipient must submit the following documentation to the district manager and the FIA Administrator (unless otherwise noted):
- (a) “Project Completion Statement (Engineering Activities)” (*See Appendix for form*);

- (b) copies of fabrication and construction documentation, records, correspondence and project photo logs, *(copy to District Manager only)*;
- (c) for projects on all roads, a copy of as-built documentation, designs, construction drawings and specifications, including reports, *(copy to District Manager only)*;
- (d) a “Statement of Construction Conformance(...)”, that must be signed and sealed by a Registered Professional, complete with as-built drawings. *(See Appendix for appropriate form)*;
- (e) a “Crossing Assurance Statement” completed by a Coordinating Registered Professional consistent with the *Guidelines for Professional Services in the Forest Sector – Crossings*, prepared by the Association of Professional Engineers and Geoscientists (<http://www.apeng.bc.ca/ppractice/documents/ppguidelines/guidelinesforestcrossings.pdf>);
- (f) detailed engineering design notes package for projects that consist of proprietary or non-conventional bridge or major culvert structures (e.g., structures not captured by the FSBDCM, including Geotextile Reinforced Soil (GRS) bridge abutments, box culverts that use GRS abutments and composite GRS and steel superstructures, open-bottomed GRS arches); The design notes must include, as applicable: design and analysis methodology including method of analysis for carrying design loads; design guidelines used; design assumptions, loads, and parameters; safety factors, design parameters, design calculations; and relevant computer program results (if applicable). The detailed design notes must be comprehensive enough to allow a ministry geotechnical engineer and/or ministry structural engineer (as appropriate) to independently load rate the structure for different vehicle configurations that may be considered in the future or if the structure becomes damaged during its service life. The detailed design notes package must include a copy of the independent external peer review submission described in clause 5.5(j)(vi) for non-conventional structure designs. *(A copy of the design notes package should only be submitted to the District Manager.)*
- (g) for projects on an FSR, written notification of any recommended post-construction inspections.

Project Completion Abstract Submission

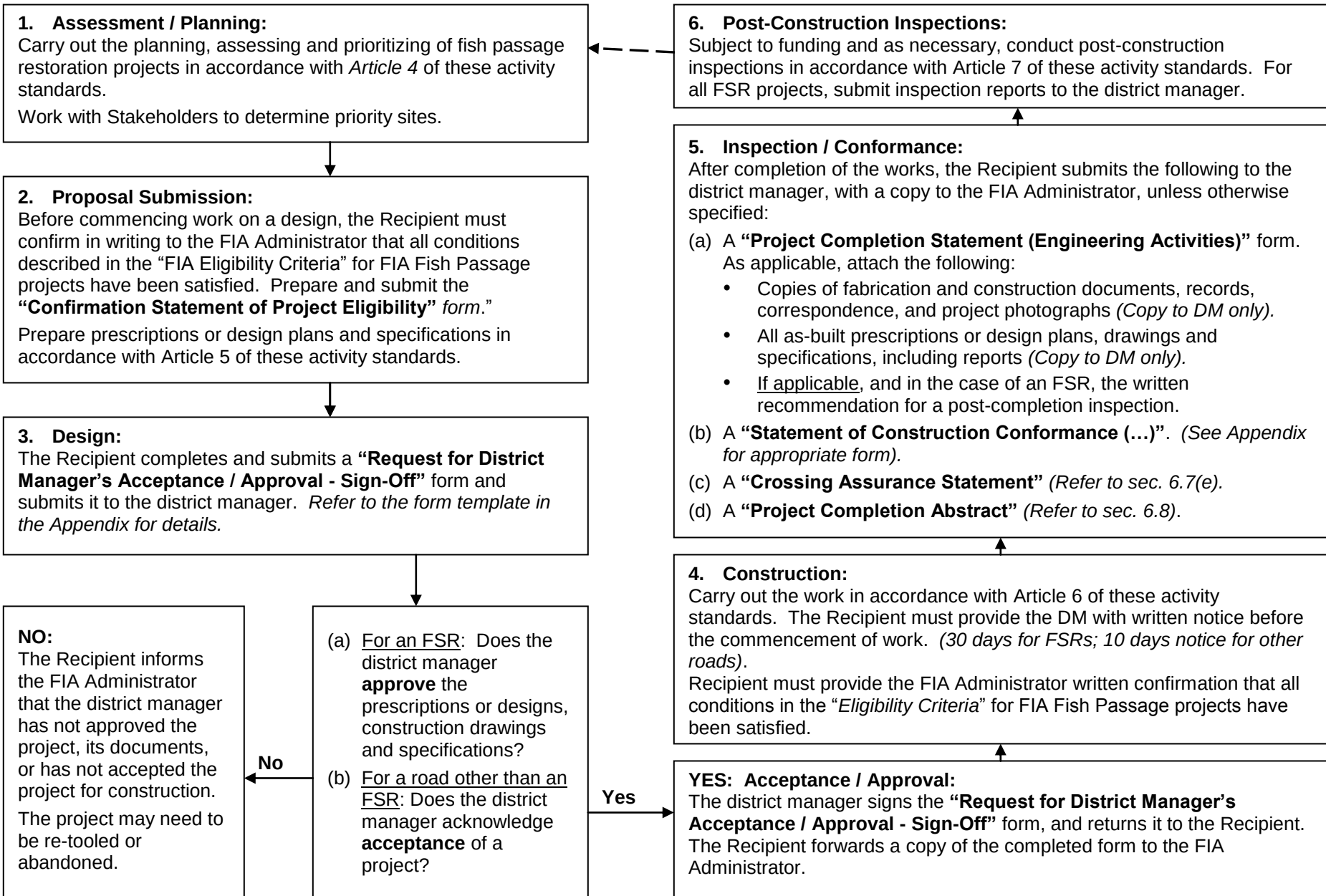
- 6.8 A “Project Completion Abstract” (*See Appendix for template*), must be completed by the Recipient and submitted to the district manager (copy to the FIA Administrator) upon completion. The Abstract must be prepared by an individual familiar with the project. The abstract shall be a maximum of two pages, and also include a copy of the project key map. *(An electronic Word file of the “Project Completion Abstract” is available from the FIA web site.)*

ARTICLE 7: POST-CONSTRUCTION WORKS - INSPECTIONS

Post-Construction Works - Inspections

- 7.1 Following the completion of the construction work, a registered professional may recommend to the Recipient (in consultation as necessary with the Professional Biologist if involved in the project) that a post-construction inspection of the works be carried out to confirm that the project functions as designed. Record all inspection findings.
- Remedial works may be necessary to address important deficiencies. Such projects would be considered NEW Projects. If remedial works are necessary,
- (a) carry out further project planning as described earlier in Article 4; and
 - (b) prioritize this new project in consideration of other competing projects on the basis of known hazards, and risk of damage to environmental, social and economic values.
- 7.2 A sample road inspection report is provided in Appendix 6 of the *Forest Road Engineering Guidebook (June 2002)*, or utilize other similarly appropriate inspection reports to complete this inspection: <http://www.for.gov.bc.ca/tasb/legsregs/fpc/FPCGUIDE/Road/FRE.pdf>,
- 7.3 The inspector must sign the completed inspection report. In the case of FSRs, the Recipient must submit the inspection results to the district manager.

FIGURE 1 – PROCESS FLOWCHART



LIST OF REVISIONS TO STANDARDS AND APPENDICES

Version	Date	Comments / Changes to Standards
5	Sept. 2009	Primary Revisions: <ul style="list-style-type: none"> Page 4/11: corrected 3.4(e) – MFR Engineering Manual chapter number revised to “4” Page 5/11: added 5.5(a) – explicit statement that new structures will be permanent unless otherwise specified Page 5/11: changed 5.5(d) to include reference to Engineering Manual for more info on CRP Pages 5 & 6/11: added 5.5(h) to specify (clarify) construction drawing requirements Pages 6 & 7: edited 5.5 (j), and added new clauses to include more stringent requirements for non-conventional structure designs Page 9: added 6.7(f) to include requirement for design notes package for non-conventional structure designs
4	March 2009	Primary Revisions (not all revisions capture here): <ul style="list-style-type: none"> General rewording and restructuring of Articles 1 to 7 for ease of reading and improved understanding of requirements by all involved with projects. Figure 1 – Process Flowchart refashioned for improved ease of use. Appendices: “Section A” of the forms and templates, have been reconfigured to be consistent making them more user friendly and easier to follow and find data. An “Activity / Process Tracking Checklist” has been added to assist the recipients and MFR staff. Can be used to ensure all requirements are completed and processes are not overlooked. The checklist is not required for submission.
3	April 30, 2008	Primary Revisions (not all revisions capture here): <ul style="list-style-type: none"> Incorporation of revised project eligibility criteria (http://www.for.gov.bc.ca/hcp/fia/landbase/fishpassage.htm). Article 5.2 : provide for procedures non-conventional or proprietary crossing structure designs “Confirmation Statement of Project Eligibility Form” – to reflect new eligibility criteria. “Request for District Manager’s Signature of Project Acceptance / Approval of Prescriptions or Design Plans Form” - to reflect new eligibility criteria and capture article 5.2.
2	April 16, 2007	General list of changes: <ul style="list-style-type: none"> Article 3: Significant revisions to paragraphs 3.5, 3.7, and 3.9. Article 4: Added new paragraphs 4.4 and 4.5. Article 5: Significant revisions throughout. Article 6: Significant revisions to paragraph 6.4 and 6.12; Added new paragraphs 6.9 to 6.11. Figure 1: Minor revisions to match with text revisions. List of Revisions to Standards and Appendices: Added list. Forms: Minor revisions to “Confirmation Statement of Project Eligibility Form,” “Request for District Manager’s Acceptance / Approval of Prescriptions or Design Plans” Form,” and “Project Completion Statement Form.” Forms: Significant revision to “Statement of Construction Conformance (for structural repair or replacement of a major culvert or bridge),” and minor revision to “Statement of Construction Conformance (for fish passage restoration works <u>except</u> for structural repair or replacement of a major culvert or bridge).” Minor edits throughout the document, including updates to website links.
1	April 30, 2003	Original 2003/2004 release version.

Appendices – Forms & Templates

1. Activity / Process Tracking Checklist
2. Confirmation Statement of Project Eligibility
3. Request for District Manager's Acceptance / Approval – Sign-Off
4. Project Completion Statement (*Engineering Activities*)
5. Statement of Construction Conformance (...*major culvert or bridge*)
6. Statement of Construction Conformance (*for fish passage restoration works,...*)
7. Project Completion Abstract (*Template*)

Activity / Process Tracking Checklist

FIA -- Land-base Investment Program – Fish Passage Restoration Projects

To aid Recipients & MFR with project development and administration activities. NOT FOR SUBMISSION

SECTION A – GENERAL INFORMATION

Recipient: (name & division) _____ Forest Region / District: _____ Watershed Name / Operating Area: _____	FIA File No.: _____ / _____ FIA Investment Schedule No.: _____ FIA Project No.: _____
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Road Type: (✓ check only one) ☐ Forest Service Road ☐ Road Permit Road (pre-1995) ☐ Non-status road Road Name (formal): _____ Road File / Ref. No.: _____ Project Location: (road km): _____ UTM Coordinates: (attach a key map): _____ _____	Priority Stream Fish Passage Restoration Project: (✓ check if applicable) ☐ Modifications to a Structure or Stream Channel ☐ Structural Repairs to a Major Culvert or Bridge ☐ Culvert Removal & Stream Channel Works ☐ Culvert Removal & Major Culvert or Bridge Installation ----- ☐ New or Replacement Bridge ☐ Structural Repairs to Bridge ☐ New or Replacement Major Culvert ☐ Structural Repairs to Major Culvert
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Stream Name / Stream Classification / Fish Species: _____ Check one (article 5.2): ☐ <u>Conventional bridge/culvert OR</u> ☐ <u>Proprietary system or Non-conventional bridge / culvert</u>	PROJECT PRIORITY DETERMINATION <ul style="list-style-type: none"> • Reasonable investment (pre-2008/09) in: ☐ site plans ☐ designs ☐ pre-purchased materials • Watershed Group Ranking: _____ • Parker assessment (pre-2008/09) score: _____ ☐ Other Rationale: (attach justification)
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Crossing Name: _____	MFR Site No. / Structure No.: _____ / _____	Projected Completion Date: _____
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Note: In the Tracking lists below, the references to “Article” or “sec.” refers to the FIA Activity Standards Document for “Fish Passage Activity (Engineering Activities)”.

	SECTION B - ACTIVITY / PROCESS TRACKING	DATE												
1	Assessment / Planning Phase: (Refer to Article 4) ☐ Work with stakeholder group (MOE) to determine priority sites. ☐ Field visit proposed site to check for unknown conditions, such as possible fish passage barriers. ☐ Priority site chosen. _____													
2	Proposal Submission Phase: (Refer to Article 2 & 3) ☐ Recipient submits project proposals to the FIA Administrator. (Refer to Article 2) (Refer to the “ FIA Eligibility Criteria ” document (Version 1.0 April 23, 2008)) ☐ Recipient proceeds with the preliminary design phase following submission of: “ Confirmation Statement of Project Eligibility ” form. (Refer to, sec. 4.2 & 5.1 for details) ☐ Recipient must refer preliminary design plan to the MFR District Engineering Officer: (Referral to MFR, Regional Structures Engineer, at the conceptual design phase. Refer to sec. 5.2) MFR Engineering Activities: ☐ District Engineering Officer works with Recipient and Regional Structures Engineer to get an approved conceptual design. (Refer to Article 5) ☐ Provide Regional Structures Engineer with information to assist with review: <table style="width: 100%; margin-left: 20px;"> <tr> <td>• First hand knowledge available about the site conditions?</td> <td>☐ Yes</td> <td>☐ No</td> </tr> <tr> <td>• Location Map(s) included?</td> <td>☐ Yes</td> <td>☐ No</td> </tr> <tr> <td>• Photographs available?</td> <td>☐ Yes</td> <td>☐ No</td> </tr> <tr> <td>• Proposal fits MFR objectives for site?</td> <td>☐ Yes</td> <td>☐ No</td> </tr> </table> ☐ Ministry of Forests and Range Structure / File Number: _____ ☐ DM must respond (use FS 1288) to Recipient within 30 days regarding design requirements. (Refer to sec. 4.3) ☐ Approved Conceptual Design signed off by MFR P.Eng.: _____ Date: _____	• First hand knowledge available about the site conditions?	☐ Yes	☐ No	• Location Map(s) included?	☐ Yes	☐ No	• Photographs available?	☐ Yes	☐ No	• Proposal fits MFR objectives for site?	☐ Yes	☐ No	
• First hand knowledge available about the site conditions?	☐ Yes	☐ No												
• Location Map(s) included?	☐ Yes	☐ No												
• Photographs available?	☐ Yes	☐ No												
• Proposal fits MFR objectives for site?	☐ Yes	☐ No												

3	Design Phase: (Refer to Article 5) ☐ Recipient to work through conceptual design phase with district engineering officer. - Design requirements are identified in the: - <i>Engineering Manual</i> , chapter 5 (<i>Internal link to MFR only.</i>) - <i>Forest Service Bridge Design and Construction Manual</i> http://www.for.gov.bc.ca/hth/engineering/documents/publications_guidebooks/manuals_standards/bridge_manual.pdf ☐ Project Designed by: _____ Date: _____ ☐ Final design must incorporate recommendations set out in the Environmental Management Plan ☐ EMP prepared by: _____ Date: _____ ☐ Signed form is forwarded to FIA Administrator by recipient ☐ Recipient submits: ○ “Request for District Manager’s Acceptance / Approval – Sign-off” ○ Signed form is forwarded to FIA Administrator by recipient.	
	MFR Engineering Activities: ☐ Final design must have the approval of the MFR Regional Structures Engineer. (<i>Refer to sec. 5.5</i>) ☐ Final design approved by MFR P.Eng.: _____ Date: _____ ☐ DM signs “Request for District Manager’s Acceptance / Approval – Sign-off” .	
4	Construction Phase: (Refer to Article 6) ☐ Recipient must inform MFR District Engineering Officer of the: (<i>Refer to sec. 6.2</i>) ☐ construction schedule to facilitate joint site inspections with the engineers: (<i>Refer to sec. 6.3</i>) • on FSR’s, 30 days notice • on other roads, 10 days notice ☐ joint inspection invitees: _____ ☐ joint inspection date: _____ ☐ Recipient to ensure site inspections and photo logs are kept of all phases during construction.	
5	Construction Inspection / Conformance Phase: (Refer to sec. 6.5 & 6.7) ☐ Recipient must provide the district with copies of the following documents where applicable: ☐ progress inspection reports, complete with photographs ☐ As-built Documentation ☐ “Project Completion Statement (Engineering Activities)” form . ☐ “Statement of Construction Conformance (...)” . (<i>use appropriate form</i>) ☐ “Crossing Assurance Statement,” see “Guidelines for Professional Services in the Forest Sector – Crossings” prepared by APEGBC for sample document ☐ Geotechnical reports/inspection records ☐ Detailed engineering design notes package where applicable ☐ And, where applicable, the following documents: • in-plant inspection record • steel certification record • pile driving records • fabrication inspection reports	
6	Post-Construction Monitoring / Completion Abstract: ☐ Where post construction monitoring is required, copies of monitoring reports must be forwarded to the district engineering officer. (<i>Refer to Article 7</i>) ☐ Recipient to prepare and forward the “Project Completion Abstract” (<i>Refer to sec. 6.8</i>)	
7	Records Management: ☐ Recipient to maintain project files/records consistent with requirements. (<i>Refer to sec. 6.5 to 6.8</i>) MFR Engineering Activities: ☐ Copies of final project documents (inspections, as-built, conformance, etc.) concerning projects on FSRs must be forwarded to the Regional Structures Engineer. (<i>Refer to sec. 6.5 to 6.8</i>) ☐ All final documents must be placed on the appropriate MFR, FSR Project file or FSR Bridge file	

Confirmation Statement of Project Eligibility

FIA -- Land-base Investment Program – Fish Passage Restoration Projects

RECIPIENT MUST COMPLETE ALL SECTIONS AND SUBMIT TO FIA ADMINISTRATOR

SECTION A – GENERAL INFORMATION

Recipient: (name & division) _____ Forest Region / District: _____ Watershed Name / Operating Area: _____	FIA File No.: _____ / _____ FIA Investment Schedule No.: _____ FIA Project No.: _____
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Road Type: (✓ check only one)

- ☐ Forest Service Road
☐ Road Permit Road (pre-1995)
☐ Non-status road

Road Name (formal): _____

Road File / Ref. No.: _____

Project Location: (road km): _____

UTM Coordinates: (attach a key map): _____

Priority Stream Fish Passage Restoration Project:

(✓ check if applicable)

- ☐ Modifications to a Structure or Stream Channel
☐ Structural Repairs to a Major Culvert or Bridge
☐ Culvert Removal & Stream Channel Works
☐ Culvert Removal & Major Culvert or Bridge Installation

- ☐ New or Replacement Bridge
☐ Structural Repairs to Bridge
☐ New or Replacement Major Culvert
☐ Structural Repairs to Major Culvert

Stream Name / Stream Classification / Fish Species: _____

Check one (article 5.2):

- ☐ Conventional bridge/culvert OR
☐ Proprietary system or Non-conventional bridge / culvert

PROJECT PRIORITY DETERMINATION

- **Reasonable investment (pre-2008/09) in:**
☐ site plans ☐ designs ☐ pre-purchased materials
- **Watershed Group Ranking:** _____
- **Parker assessment (pre-2008/09) score:** _____
- ☐ **Other Rationale:** (attach justification)

Crossing Name: _____	MFR Site No. / Structure No.: _____ / _____	Projected Completion Date: _____
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SECTION B – RECIPIENT'S SIGNATURE

To the best of my knowledge, I confirm that:

- the stream crossing is fish-bearing, (2) the existing structure does not provide fish passage, and (3) there are no other fish barriers located upstream or downstream that would significantly reduce the cost-benefit of the works proposed at the crossing site;
- for road permit roads, the existing culvert was constructed prior to June 15, 1995, and the proposed works at the crossing involve no activities which licensees are legally obliged to undertake at their own cost. (Note: The pre-1995 timetable does not apply to proposed projects on FSRs);
- in the case of an existing major culvert, the choice of a replacement structure is commensurate with the estimated life span of the structure at the site after the replacement work is completed;
- the project is not being accommodated in a stumpage appraisal, and will not be in the future;
- the project does not contradict an Access Management Plan, Forest Development Plan, or Forest Stewardship Plan;
- the project will comply with design and construction requirements specified in applicable federal and provincial legislation and FIA technical and administrative standards.

SIGNATURE OF RECIPIENT'S REPRESENTATIVE

Name of Recipient Representative: (please print)		(Please affix professional seal here.)
Signature of Recipient Representative:	DATE SIGNED YY MM DD / /	
Recipient's Name & Address: (please print)		
Phone No.:	Fax. No.:	E-mail Address:

Request for District Manager's Acceptance / Approval - Sign-Off

FIA -- Land-base Investment Program – Fish Passage Restoration Projects

RECIPIENT MUST COMPLETE SECTIONS "A TO E," AND SUBMIT TO DISTRICT MANAGER FOR SIGNATURE

SECTION A – GENERAL INFORMATION

Recipient: (name & division) _____ FIA File No.: _____ / _____
 Forest Region / District: _____ FIA Investment Schedule No.: _____
 Watershed Name / Operating Area: _____ FIA Project No.: _____

Road Type: (✓ check only one)

- ☐ Forest Service Road
☐ Road Permit Road (pre-1995)
☐ Non-status road

Road Name (formal): _____

Road File / Ref. No.: _____

Project Location: (road km): _____

UTM Coordinates: (attach a key map): _____

Priority Stream Fish Passage Restoration Project:

(✓ check if applicable)

- ☐ Modifications to a Structure or Stream Channel
☐ Structural Repairs to a Major Culvert or Bridge
☐ Culvert Removal & Stream Channel Works
☐ Culvert Removal & Major Culvert or Bridge Installation

- ☐ New or Replacement Bridge
☐ Structural Repairs to Bridge
☐ New or Replacement Major Culvert
☐ Structural Repairs to Major Culvert

Stream Name / Stream Classification / Fish Species:

Check one (article 5.2):

- ☐ Conventional bridge/culvert OR
☐ Proprietary system or Non-conventional bridge / culvert

PROJECT PRIORITY DETERMINATION

- Reasonable investment (pre-2008/09) in:
☐ site plans ☐ designs ☐ pre-purchased materials
- Watershed Group Ranking: _____
- Parker assessment (pre-2008/09) score: _____
- ☐ Other Rationale: (attach justification)

Crossing Name: _____ MFR Site No. / Structure No.: _____ / _____ Projected Completion Date: _____

SECTION B – ACCESS INFORMATION

1. Does the road require a barricade to temporarily preclude vehicle access until either appropriate repairs or structure replacements are made in accordance with the design plans? ☐ Yes ☐ No

SECTION C – RESOURCE VALUES / CONCERNS

1. Community watershed? ☐ Yes ☐ No (If yes, attach a list of water licensees who require notification of planned project activities)
2. Does the road(s) cross areas with a moderate or high likelihood of landslides? ☐ Yes ☐ No
 Comments: _____
3. Have necessary referrals been made and incorporated into the design? ☐ Yes ☐ No (If yes, list the referrals made)
 Comments: _____
4. Have timing windows and measures for works in and around stream crossings been incorporated into the design?
☐ Yes ☐ No Comments: _____
5. Describe known site safety hazards / Other comments:
 Comments: _____

SECTION D – DESCRIPTION OF WORK AND ATTACHMENTS

Provide a brief description of the proposed work (also provide details about the replacement structure, if applicable):
 List of attachments describing details of the work (✓ *check if attached*):

☐ Design Drawings: Specify drawing numbers, map sheets, or report name / date:

SECTION E – RECIPIENT'S SIGNATURE

To the best of my knowledge, I confirm that:

- the requirements of the "FIA General Standards (FS 1001)" will be met;
- the design was carried out by a Professional Engineer or registered professional in accordance with the FIA Activity Standards Document, "Fish Passage Activity (Engineering Activities)";
- the appropriate registered professional has signed and sealed all prescriptions or designs, construction drawings and specifications for the project, and provided a statement (in a report, on the drawings or in a separate letter) that the design was prepared consistent with the requirements of the applicable FIA Activity Standards Document, "Fish Passage Activity (Engineering Activities)," and all applicable legislation; and
- the design addresses the requirements of other agencies (e.g., Ministry of Forests and Range, Ministry of Environment, Integrated Land Management Bureau, Department of Fisheries and Oceans, other relevant government agency).

SIGNATURE OF RECIPIENT'S REPRESENTATIVE

Name of Recipient Representative: *(please print)*

Signature of Recipient Representative:

DATE SIGNED
YY MM DD

/ /

*(Please affix
professional seal here.)*

Recipient's Name & Address: *(please print)*

Phone No.:

Fax. No.:

E-mail Address:

SECTION F – (FOR FSRs ONLY) DISTRICT MANAGER'S approval of prescriptions or design plans and specifications.

For FSRs Only: Based on the above information and the attachments, I approve the prescriptions or designs, construction drawings and specifications for this project.

Name of District Manager: *(please print)* _____

Signature of District Manager: _____

DATE SIGNED
YY MM DD

/ /

SECTION G – (FOR NON-FSRs) DISTRICT MANAGER'S signature of project acceptance.

For Non-FSRs Only: Based on the information provided on this form, I accept the project and it may proceed to construction provided all FIA standards and legislative requirements are followed.

Name of District Manager: *(please print)* _____

Signature of District Manager: _____

DATE SIGNED
YY MM DD

/ /

Project Completion Statement (*Engineering Activities*)

FIA -- Land-base Investment Program – Fish Passage Restoration Projects

SUBMIT COMPLETED FORM TO DISTRICT MANAGER AND FIA ADMINISTRATOR AFTER PROJECT COMPLETION

SECTION A – GENERAL INFORMATION

Recipient: (name & division) _____ Forest Region / District: _____ Watershed Name / Operating Area: _____	FIA File No.: _____ / _____ FIA Investment Schedule No.: _____ FIA Project No.: _____
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Road Type: (✓ check only one) ☐ Forest Service Road ☐ Road Permit Road (pre-1995) ☐ Non-status road Road Name (formal): _____ Road File / Ref. No.: _____ Project Location: (road km): _____ UTM Coordinates: (attach a key map): _____ _____	Priority Stream Fish Passage Restoration Project: (✓ check if applicable) ☐ Modifications to a Structure or Stream Channel ☐ Structural Repairs to a Major Culvert or Bridge ☐ Culvert Removal & Stream Channel Works ☐ Culvert Removal & Major Culvert or Bridge Installation ----- ☐ New or Replacement Bridge ☐ Structural Repairs to Bridge ☐ New or Replacement Major Culvert ☐ Structural Repairs to Major Culvert
---	---

Stream Name / Stream Classification / Fish Species: _____ Check one (article 5.2): ☐ <u>Conventional bridge/culvert OR</u> ☐ <u>Proprietary system or Non-conventional bridge / culvert</u>	PROJECT PRIORITY DETERMINATION <ul style="list-style-type: none"> • Reasonable investment (pre-2008/09) in: ☐ site plans ☐ designs ☐ pre-purchased materials • Watershed Group Ranking: _____ • Parker assessment (pre-2008/09) score: _____ ☐ Other Rationale: (attach justification)
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Crossing Name: _____	MFR Site No. / Structure No.: _____ / _____	Project Completion Date: _____
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SECTION B – ROAD ACCESS SUMMARY and SCOPE OF WORK

Vehicle Access: The actual type of motor vehicle access level after completion of the fish passage restoration project is:

☐ Log haul (Specify Design Vehicle Load and give km) _____	☐ 4WD – (give km) _____	☐ ATV – (give km) _____
☐ None – (give km) _____	☐ Other (specify & give km) _____	

Other comments: _____

SECTION C – ATTACHMENTS

List of attachments: (✓ check if attached): **Attach the following:** (as applicable)

- ☐ Copies of fabrication, and construction documents, records and correspondence, and project photographs
- ☐ A Statement of Construction Conformance (signed by a Professional Engineer or registered professional, as appropriate)
- ☐ A Crossing Assurance Statement signed by the Coordinating Registered Professional
- ☐ All as-built prescriptions or designs, construction drawings and specifications, including reports
- ☐ If applicable, and in the case of an FSR, the written recommendation for a post-completion inspection.
- ☐ A Project Completion Abstract

SECTION D – RECIPIENT'S SIGNATURE

I confirm that construction of the fish passage restoration project is complete.

Name of Recipient Representative: (please print)		(Please affix professional seal here.)
Signature of Recipient Representative:	DATE SIGNED YY MM DD / /	
Recipient's Name & Address: (please print)		
Phone No.:	Fax. No.:	E-mail Address:

Statement of Construction Conformance (for structural repair or replacement of a major culvert or bridge)

FIA -- Land-base Investment Program – Fish Passage Restoration Projects

SUBMIT COMPLETED FORM TO DISTRICT MANAGER AND FIA ADMINISTRATOR AFTER PROJECT COMPLETION

SECTION A – GENERAL INFORMATION

Recipient: (name & division) _____ Forest Region / District: _____ Watershed Name / Operating Area: _____	FIA File No.: _____ / _____ FIA Investment Schedule No.: _____ FIA Project No.: _____
--	--

Road Type: (✓ check only one)

- ☐ Forest Service Road
☐ Road Permit Road (pre-1995)
☐ Non-status road

Road Name (formal): _____

Road File / Ref. No.: _____

Project Location: (road km): _____

UTM Coordinates: (attach a key map): _____

Priority Stream Fish Passage Restoration Project:

(✓ check if applicable)

- ☐ Modifications to a Structure or Stream Channel
☐ Structural Repairs to a Major Culvert or Bridge
☐ Culvert Removal & Stream Channel Works
☐ Culvert Removal & Major Culvert or Bridge Installation

- ☐ New or Replacement Bridge
☐ Structural Repairs to Bridge
☐ New or Replacement Major Culvert
☐ Structural Repairs to Major Culvert

Crossing Name: _____	MFR Site No. / Structure No.: _____ / _____	Project Completion Date: _____
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SECTION B – PROJECT RECORDS

List of Approved Design Drawings: (Drawing and Revision No. / Name of Designer/Date)

SECTION C – STATEMENT OF CONFORMANCE

I am a Professional Engineer, registered with the Association of Professional Engineers and Geoscientists of British Columbia (APEGBC) and I have undertaken professional responsibility for all field reviews required with respect to this structure. I have taken steps as regulated under the Provincial Statute for my profession and required by good practice, and consistent with *Guidelines for Professional Services in the Forest Sector – Crossings*, of the Joint Practice Board, in order to sign and seal this Schedule.

In my professional opinion:

- the as-built structure is in general conformance with the design drawings, specifications and all applicable supporting documents, including all design amendments, which supported the acceptance of the project by the appropriate authority;
- sufficient field reviews have been carried out at appropriate times during the construction work;
- significant revisions to the drawings, specifications and supporting documents prepared for this project, including all design amendments, have been documented and marked on a set of design/construction drawings marked “as-built” and where necessary described in supporting documents; and
- where structural field welding was required, it has been completed by a Division 2 or better CWB certified welding firm.

As used herein, “field reviews” means field reviews of the work at the project site [and/or at the fabrication location(s), if/as where applicable] considered necessary by, and at the discretion of the registered professional engineer (after consultation with a registered professional biologist if/as where necessary) to confirm that the as-built structure is in general conformance with the approved/accepted design/construction drawings, specifications and other supporting documents prepared for this project.

SECTION D – RECIPIENT'S SIGNATURE

Name of Professional Engineer: (please print) _____ Signature of Professional Engineer: _____	DATE SIGNED YY MM DD / /	(Please affix professional seal here.)
Employer's Name and Address: (please print) _____		
Phone No.: _____	Fax. No.: _____	E-mail Address: _____

Statement of Construction Conformance

(for fish passage restoration works, except for structural repair/replacement of a major culvert or bridge)

FIA -- Land-base Investment Program -- Fish Passage Restoration Projects

SUBMIT COMPLETED FORM TO DISTRICT MANAGER AND FIA ADMINISTRATOR AFTER PROJECT COMPLETION

SECTION A – GENERAL INFORMATION

Recipient: (name & division) _____		FIA File No.: _____ / _____	
Forest Region / District: _____		FIA Investment Schedule No.: _____	
Watershed Name / Operating Area: _____		FIA Project No.: _____	
Road Type: (✓ check only one) ☐ Forest Service Road ☐ Road Permit Road (pre-1995) ☐ Non-status road Road Name (formal): _____ Road File / Ref. No.: _____ Project Location: (road km): _____ UTM Coordinates: (attach a key map): _____		Priority Stream Fish Passage Restoration Project: (✓ check if applicable) ☐ Modifications to a Structure or Stream Channel ☐ Structural Repairs to a Major Culvert or Bridge ☐ Culvert Removal & Stream Channel Works ☐ Culvert Removal & Major Culvert or Bridge Installation <hr style="border-top: 1px dashed black;"/> ☐ New or Replacement Bridge ☐ Structural Repairs to Bridge ☐ New or Replacement Major Culvert ☐ Structural Repairs to Major Culvert	
Crossing Name: _____		MFR Site No. / Structure No.: _____ / _____	
Project Completion Date: _____			

SECTION B – PROJECT RECORDS

List of Approved Design Drawings: (Drawing and Revision No. / Name of Designer/Date)

SECTION C – STATEMENT OF CONFORMANCE

I am a registered professional as defined in the FIA Activity Standards Document, "Fish Passage Activity (design, construction and post-construction inspections)," and I have undertaken professional responsibility for all field reviews required with respect to this project. I have taken steps as regulated under the Provincial Statute for my profession and as required by good practice, in order to sign and seal this Statement of Construction Conformance consistent with the requirements of the Forest Road Regulation or Forest Planning and Practices Regulation as applicable, FIA Activity Standards Document, and all other applicable legislation.

In my professional opinion:

- the as-built structure is in general conformance with the prescriptions or design drawings, specifications and all applicable supporting documents, including all design amendments, which supported the approval / acceptance of the project by the appropriate authority;
- sufficient field reviews have been carried out at appropriate times during the construction work by me or on my behalf; and
- significant revisions to the prescriptions or drawings, specifications and supporting documents prepared for this project, including all design amendments, have been documented and marked on a set of design/construction drawings marked "as-built" and, where necessary, described in supporting documents.

As used herein, "field reviews" means field reviews of the work at the project site [and/or at the fabrication location(s), if/as where applicable] considered necessary by, and at the discretion of the registered professional (after consultation with a registered professional biologist if/as where necessary) to confirm that the as-built structure is in general conformance with the approved/accepted prescriptions or design/construction drawings, specifications and other supporting documents prepared for this project.

SECTION D – RECIPIENT'S SIGNATURE

Name of Professional Engineer: (please print) _____		(Please affix professional seal here.)
Signature of Professional Engineer: _____	DATE SIGNED YY MM DD / /	
Employer's Name and Address: (please print) _____		
Phone No.: _____	Fax. No.: _____	E-mail Address: _____

Project Completion Abstract Fish Passage Activity (Engineering Activities)		
<small>SUBMIT COMPLETED FORM TO DISTRICT MANAGER AND FIA ADMINISTRATOR AFTER PROJECT COMPLETION</small>		
SECTION A – GENERAL INFORMATION		
Recipient: (name & division) _____ Forest Region / District: _____ Watershed Name / Operating Area: _____	FIA File No.: _____ / _____ FIA Investment Schedule No.: _____ FIA Project No.: _____	
Road Type: (✓ check only one) ☐ Forest Service Road ☐ Road Permit Road (pre-1995) ☐ Non-status road Road Name (formal): _____ Road File / Ref. No.: _____ Project Location: (road km): _____ UTM Coordinates: (attach a key map): _____ _____	Priority Stream Fish Passage Restoration Project: (✓ check if applicable) ☐ Modifications to a Structure or Stream Channel ☐ Structural Repairs to a Major Culvert or Bridge ☐ Culvert Removal & Stream Channel Works ☐ Culvert Removal & Major Culvert or Bridge Installation ----- ☐ New or Replacement Bridge ☐ Structural Repairs to Bridge ☐ New or Replacement Major Culvert ☐ Structural Repairs to Major Culvert	
Stream Name / Stream Classification / Fish Species: _____ Check one (article 5.2): ☐ Conventional bridge/culvert OR ☐ Proprietary system or Non-conventional bridge / culvert	PROJECT PRIORITY DETERMINATION <ul style="list-style-type: none"> • Reasonable investment (pre-2008/09) in: ☐ site plans ☐ designs ☐ pre-purchased materials • Watershed Group Ranking: _____ • Parker assessment (pre-2008/09) score: _____ ☐ Other Rationale: (attach justification) 	
Crossing Name: _____	MFR Site No. / Structure No.: _____ / _____	Project Completion Date: _____

Objectives of the overall project

Briefly state the objectives of the project. *[Give the stream name, stream classification, and fish species. State whether or not the project is located within a community watershed.]*

FIA Investment Schedule Number, Project Number, and Fiscal Year

For cross-reference purposes, provide the unique FIA Investment Schedule Number, Project Number, and Fiscal Year the construction was completed.

Recipient Name and Division/ MFR District/ MFR Region

Specify the Recipient Name and Division responsible for the project and the MFR region and district where the project work was carried out.

Names/Affiliation of Registered Professionals Involved in the Project

Specify the names/affiliations of the registered professionals involved in the project.

Author(s) of the Project Completion Abstract

Give the author's name(s), title, affiliation, mailing address, fax number, telephone number, email address.

Name of Watershed / Sub-basin, & Location

Give the name of the watershed / sub-basin. Describe the geographical location of the work area, and how best to access the area. For quick and simple point location and identification, provide the Universal Transverse Mercator (UTM) grid coordinates of the stream crossing structure(s) from National Topographic System (NTS) series maps or GPS. *[Attach a copy of the key map prepared for this project that shows the location of the site.]*

Introduction

Provide a brief summary of the background and history that prompted development of the project.

[This information should be summarized from details provided in the prescriptions or design plans. For example, include such details as the type and condition of the existing stream crossing structure, and how it restricts fish passage. Provide details about the road and stream crossing structure (e.g., type of road, age of the road, and age of the stream crossing structure(s) that will be removed, repaired or replaced to provide fish passage. Briefly describe details of any previous work that may have

been carried out at the site related to fish passage (e.g., installation of fish baffles, structure repairs).]

List the assessments that contributed to decision to restore fish passage at this crossing. Specify the priority rank score according to the *Fish Passage Culvert Inspection Procedures*, Watershed Technical Circular No. 11, and pages 28 to 29.

Description of Design

Provide details about the prescription or design requirements at the stream crossing. Include a summary of the design assumptions and criteria used in the design, and the rationale for the type of repairs or replacement structure selected.

Description of Completed Work

Provide the start and completion dates of the work at the site of the fish-stream crossing structure.

Summarize the outputs of the completed work, and provide details regarding the work activities and treatments provided.

Cost Summary

Activity costs -- list what ever applies (*labour, equipment and materials, machinery and materials*), and provide the total cost of the construction work.

Post-construction Inspection

If a post-construction inspection has been recommended for this project, briefly re-state the purpose and timing of this inspection.

Photographs

Include site photographs to show the existing structure, the problems with the existing structure related to fish passage, and the completed work at the stream crossing site that shows the restoration of fish passage (*maximum of 3 photos*). Provide photo numbers and captions for all photographs provided, and make reference to the photos in the above text.



Photo 1. Caption

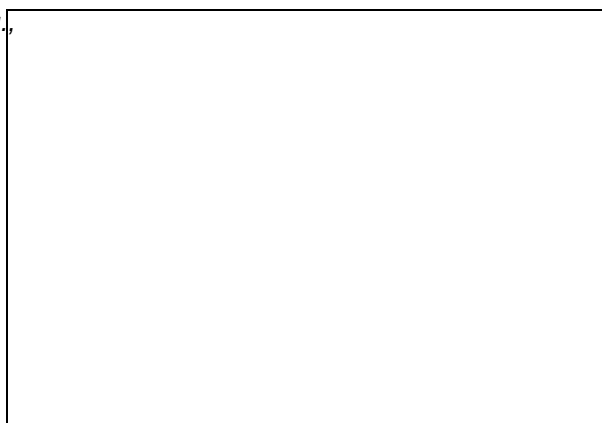


Photo 2. Caption

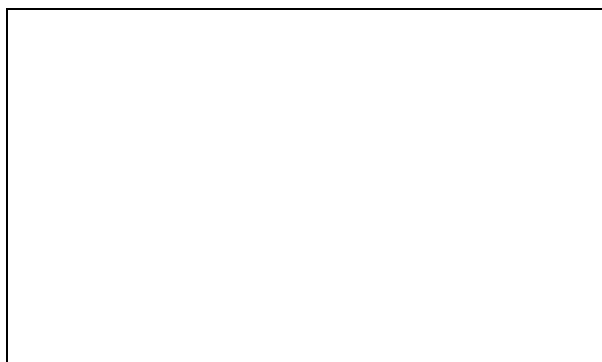


Photo 3. Caption

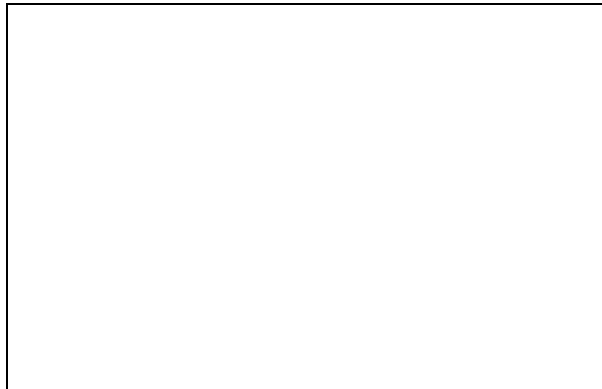


Photo 4. Caption

Note to Author:

The layout of the Project Completion Abstract should be in a two-column format (*as viewed in Page Layout mode*). The two page format of the abstract (*not the content*) is illustrated in the *Annual Compendium of Aquatic Rehabilitation Projects for the WRP 1999-2000* available at

<http://www.env.gov.bc.ca/cgi-bin/apps/faw/searchresult.cgi?series=WRP%20Project>