Ministry of Forests and Range

FIA Activity Standards Document (Version 3 – 2008/2009)

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

Fish Passage Activity (design, construction and post-construction inspections)

May 20, 2008

Restoration and Rehabilitation Component, Aquatic Activity Area, Fish Passage Activity:

This activity specific standard for fish passage addresses *only* **design, construction and post-construction inspections (i.e., engineering activities)** for 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 "Eligibility Criteria". Targeted funds will be used for priority watersheds determined by the Ministry of Environment (MoE), but Recipient discretionary funding can be used for local priorities. Pre-design activities such as assessment and prioritization for restoration of fish passage at stream crossings are separate activities.

The detailed **eligibility criteria** and pre-design activites for FIA fish passage restoration projects are provided in documents available at the following FIA web site: http://www.for.gov.bc.ca/hcp/fia/landbase/fishpassage.htm

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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.

"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 $6m^3$/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.

Objectives of Fish Passage Restoration Projects

1.2 The overall objectives of fish passage restoration projects are to:

(a) identify priority fish stream crossings where culverts or bridges, or adversely modified channel conditions at the crossing location, act as partial or full barriers to fish passage; and,

(b) design and construct cost effective and stable restoration works to provide passage of fish for the purposes of spawning, rearing or migration to support increased fish sustainability, survival and production.

ARTICLE 2: EXAMPLES OF ELIGIBLE FISH PASSAGE RESTORATION PROJECTS

Examples of Eligible Projects

2.1 Four types of projects are eligible for FIA funding:

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

(Note: This project type typically results in removal of both the crossing structure and motor vehicle access, and would likely apply most often to environmental maintenance projects on non-status forest roads. To increase the efficiency of program delivery, consider the benefits of constructing this project type concurrently with other activities carried out for environmental maintenance projects. The standards for environmental maintenance projects are available at http://www.for.gov.bc.ca/hcp/fia/landbase/enviro_maintenance.htm.)

(b) Removal of a priority stream culvert that is blocking fish passage, and replacement with a new stream culvert or bridge that facilitates fish passage.

(Note: To maximize the benefits of FIA investments, culvert and bridge replacement activities on non-status roads are not generally eligible for FIA funding. The preference is for project types 2.1(a), 2.1(c) or 2.1(d) on non-status roads, unless there are extenuating circumstances.)

(c) Structural repairs to an existing priority stream culvert or bridge to provide fish passage.

(d) Installation of fish baffles, alterations to the stream channel to change backwater conditions, or other activities related to restoration of fish passage at the priority-crossing site.

ARTICLE 3: GENERAL REQUIREMENTS

Project Implementation

3.1 Figure 1 (attached) is a flowchart that shows the linkage between the different project phases of (1) planning, assessing, and prioritizing fish passage restoration projects, (2) design, (3) construction, and (4) post-construction inspections, and the associated approvals and submission requirements associated with each phase.

Contractual and Legal Requirements

3.2 Carry out all work for design, construction and post-construction inspections consistent with the requirements of this FIA Activity Standards Document, the Ministry of Forests and Range General FIA Standards (FS 1001), the *Forest Practices Code of British Columbia Act* or *Forest and Range Practices Act* as applicable, and Forest Road Regulation or Forest Planning and Practices Regulation as applicable, and all other applicable provincial and federal legislation.

Qualifications and Duties of Personnel

3.3 The Recipient will carry out suitable project management for the project. The Recipient will ensure the person assigned to this task has appropriate training and experience to coordinate and manage projects, including but not limited to the following activities:

(a) retain and coordinate the activities of the appropriate team of technical and professional consultants (such as structural, hydrological, geomorphological and biological) as required for the project; prepare contracts for technical and professional services; and as appropriate, coordinate purchase and delivery of required materials for the project;

(b) make all required referrals to government agencies, obtain all required approvals and permits, and provide all required written notification at appropriate stages of the project;

(c) administer and retain copies of all required documentation associated with design approvals required under legislation, construction, and project sign-off of completed work and other necessary documentation;

(d) coordinate and appropriately schedule the timing of fish passage restoration projects with stakeholders;

(e) carry out other related project management duties for the project.

3.4 Engineering Design of a Major Culvert or Bridge:

(a) A Professional Engineer must be retained to provide designs, construction drawings and specifications for a new **major culvert** or structural repairs to an existing major culvert.

(b) A Professional Engineer must be retained to provide designs, construction drawings and specifications for a new **bridge** or structural repairs to an existing bridge.

3.5 Prescriptions for Culvert Removal and Re-establishment of the Stream Channel, and Design of a Fish Stream Culvert that is not a Major Culvert): A registered professional with appropriate training and experience, must be retained to make:

(a) a prescription for removal of a priority stream culvert that is blocking fish passage, and re-establishment of the stream channel;

(b) a design for removal of a priority stream culvert that is blocking fish passage, and replacement with a new fish stream culvert (other than a major culvert) that facilitates safe fish passage;

(c) a design for structural repairs to a priority fish stream culvert that is not classified as a major culvert;

(d) a design for installation of fish baffles, alterations to the stream channel to change backwater conditions, or other such non-structural activities related to restoration of fish passage at the priority-crossing site.

3.6 Construction:

(a) A Professional Engineer for a major culvert or bridge, or an appropriate registered professional for other eligible fish passage project activities, who is responsible for all field reviews required with respect to the project, must sign and seal a Statement of Construction Conformance and as-built drawings upon completion of construction. Forms have been prepared to facilitate these requirements (see Appendix).

(b) Additionally, after construction of a bridge or major culvert, a Coordinating Registered Professional must sign and seal a Crossing Assurance Statement consistent with 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/library/library/guidelines/guides_psfs_crossings.pdf.

3.7 Post-construction Inspections: If a post-construction inspection under Article 7 is required to confirm that the works are functioning as designed, the inspection should be performed by the person who prepared the prescription or design, or by the person who signed the Statement of Construction Conformance, or a similarly qualified person.

Technical References

3.8 The following reference documents describe acceptable forest practices. However, where the work is carried out by a registered professional, that person must choose methods and techniques that best serve the individual project objectives, consistent with legislative requirements and professional practice.

(a) Fish-Stream Crossing Guidebook (March 2002) available at http://www.for.gov.bc.ca/tasb/legsregs/fpc/FPCGUIDE/Guidetoc.htm

(b) 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

(c) Engineering Manual, Chapter 5, Design and Construction of Bridges and Major Culverts) available through: http://www.for.gov.bc.ca/hth/engineering/Bridges_And_Major_Culverts.htm

(d) *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/library/library/guidelines/guides_psfs_crossings.pdf

(e) Best Management Practices Handbook http://www.for.gov.bc.ca/hth/engineering/documents/publications_guidebooks/publications_reports/bmp_hndbk_nov_01.pdf

(f) WRP Technical Circular Number 9 http://wlapwww.gov.bc.ca/wld/documents/wrp/wrtc_9.pdf

(g) 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 eligibility criteria. 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.

4.2 At a more detailed level, carry out pre-design activities in accordance with the activity standard that addresses project planning, assessment and prioritization components for restoration of fish passage, available at the following FIA web site: http://www.env.gov.bc.ca/wld/fia/instream.html

4.3 Design and construction of fish passage restoration projects will only be considered for eligible projects as provided for at: http://www.for.gov.bc.ca/hcp/fia/landbase/fishpassage.htm.

Proposed Bridge or Major Culvert Projects on FSRs

4.4 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.

4.5 Within 30 days of receiving a notice referred to in paragraph 4.4, the district manager, by written notice given to the Recipient and Road Use Permit holder, may specify requirements respecting the design, building or installing 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 confirm in writing to the FIA Administrator that all conditions described in the Eligibility Criteria for FIA fish passage

projects have been satisfied. A form has been prepared to facilitate this process (see Appendix).

5.2 All activities and practices important to ensuring the successful design and construction of bridges and major culverts on forest roads must generally conform to Chapter 5 (Design and Construction of Bridges and Major Culverts) of the Ministry of Forests and Range Engineering Manual (March 31, 2006) available at http://www.for.gov.bc.ca/hth/engineering/Bridges_And_Major_Culverts.htm.

Mandatory requirements include:

(a) Suitable preparation of prescriptions or designs, construction drawings, and specifications to adequately communicate the requirements of the project to construction personnel.

(b) 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.

(c) 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/library/library/guidelines/guides_psfs_crossings.pdf.

(d) 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 Regional Bridge Engineer, Ministry of Forests and Range prior to commencing detailed design.

(e) Where project proposals consist of proprietary or non-conventional bridge or culvert structures (e.g., 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. 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. Adequate specifications must be provided to bidders for both the alternative and conventional structures. Where tendering is not required, the recipient must conduct a cost comparison analysis to demonstrate relative cost effectiveness of the proposed alternative structure. 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 comparative cost analysis to the Regional Bridge Engineer for **approval (for FSRs) or advice (non-FSRs)** prior to making financial commitments. Costs for design, construction and long term maintenance must be considered in the comparative cost analysis. The requirement for a comparative cost analysis may be waived with agreement from the Regional Bridge Engineer.

(f) All new fabricated bridge superstructures must be permanently labelled with unique identifiers.

(g) 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, as a measure of quality assurance.

5.3 Prescriptions or designs, construction drawings and specifications prepared for eligible fish passage projects will:

(a) comply with the requirements of the Forest Road Regulation or the Forest Planning and Practices Regulation, as applicable

(b) generally conform to the review process, design and construction guidelines, and fish stream protection measures for fish-stream crossings provided in Chapters 2, 3 and 4 of

the *Fish-stream Crossing Guidebook (March 2002)* available at http://www.for.gov.bc.ca/tasb/legsregs/fpc/FPCGUIDE/FishStreamCrossing/FSCGdBk.pdf

(c) as appropriate, incorporate the review comments provided by a Professional Biologist in accordance with paragraph 5.4, and referral comments made by other agencies in accordance with paragraph 5.7.

5.4 The Registered Coordinating Professional (in consultation with the Recipient) for new bridges and major culverts or structural repairs to existing bridges and major culverts, or the Recipient (in consultation with the registered professional) for other eligible fish passage restoration projects, will determine if a Professional Biologist trained and experienced in fish biology should be retained to:

(a) provide review comments on prescriptions or design plans and specifications during their development;

(b) carryout site inspections during construction as may be required.

5.5 The person who takes responsibility for a prescription or design must 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.

5.6 In accordance with Article 3, 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 structure be carried out to confirm that the project works are functioning as designed.

Referral Obligations and Agency Approvals Prior to Construction

5.7 Prior to construction, the Recipient must make all required referrals to government agencies and obtain all required approvals and permits. The Recipient will comply with relevant legislative authorities and approvals, including provincial and federal legislation outlined in Chapter 1 of the *Fish-stream Crossing Guidebook (March 2002)*. In particular, the Recipient must obtain approvals for any work in and about a stream required from the Ministry of Water, Land and Air Protection (Part 7 of the *Water Regulation*, pursuant to section 9 of the *Water Act*) and Fisheries and Oceans Canada (migratory fish). Incorporate the requirements of other agencies into the design, and provide copies of the referral and agency response to the district manager upon request.

Professional's Sign-off on Prescriptions or Design Plans and Specifications

5.8 The registered professional who takes responsibility for a prescription or design, construction drawings and specifications must sign and seal the prescription or design, construction drawings and specifications prior to commencement of construction. Note specific professional requirements of Article 3.

District Manager's Approval of Designs or Acceptance of Projects Prior to Construction

5.9 For fish passage restoration 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. A form has been prepared to facilitate this process (see Appendix). The Recipient must submit the prescriptions or designs, construction drawings and specifications with the completed form.

5.10 For fish passage restoration 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 (if appropriate). A form has been prepared to facilitate this process (see Appendix). In this case, since the district manager will not be approving the prescriptions or designs, construction drawings and specifications, the Recipient does not need to submit the prescriptions or designs, construction drawings and specifications with the completed form.

Bridge Materials Acquisition

5.11 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.

ARTICLE 6: CONSTRUCTION

General

6.1 Carry out the work activities in accordance with the requirements of the prescription or design, construction drawings and specifications.

6.2 The professional taking responsibility for the construction works shall have carried out under their direction, suitable site supervision and field reviews, before, during and upon completion of the construction work. The professional will be responsible for documentation of all site inspections and construction correspondence, and take photographs of the crossing site before, during and upon completion of construction.

6.3 Before the construction work commences, and during the course of the work, erect appropriate warning signs and/or barriers on the approach roads to protect road users. Where it may be necessary to barricade any road to temporarily preclude motor vehicle access during times of unacceptable hazards to user safety, contact the district manager for pre-approval.

Notification Requirements Before Commencing the Work

6.4 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 10 days written notice** before the commencement of any equipment operations on road permit roads and non-status roads

(b) **at least 30 days written notice** before the commencement of any equipment operations on FSRs.

6.5 In the case of an FSR, notify the district manager and the FIA Administrator when the work scope of an approved design substantially changes or change is anticipated.

6.6 Unanticipated conditions can be encountered during the work. In such an event, and if potential adverse affects to adjacent resources are identified, the construction contractor or the person responsible for field reviews will notify and consult with both the Recipient and the person who taking responsibility for the design before continuing with the project.

6.7 Modifications to a design may be necessary to address unforeseen site conditions. A proposed revision to a design prepared by a registered professional must be approved in writing by the registered professional responsible for the design, and approved in writing by the district manager in the case of an FSR, before being implemented.

6.8 Notify all appropriate agencies if a soil erosion event occurs and adversely affects forest resources or other values.

Fabrication and Construction Documentation

6.9 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.

6.10 The person responsible for construction must obtain and retain the following as-built records:

(a) pertinent construction data including, but not limited to, any pile driving records, hammer type, penetration, set criteria, and any critical dimensions

(b) fabrication plant inspection reports, including mill test certificates, and 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.

6.11 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 list preceding). The as-built drawings should 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.

Submission Requirements after Construction

6.12 Upon completion of the construction work, the Recipient must submit the following documentation to the district manager:

(a) completed and signed Project Completion Statement (give a copy to FIA Administrator);

(b) copies of fabrication and construction documentation, records, correspondence and project photographs (do not give a copy to FIA Administrator);

(c) for projects on all roads, a copy of as-built prescriptions, designs, construction drawings and specifications, including reports (do not give a copy to FIA Administrator);

(d) a Statement of Construction Conformance and a Crossing Assurance Statement in accordance with Article 3 (give a copy to the FIA Administrator);

(e) in the case of an FSR, written notification of any recommended post-construction inspections for the project.

6.13 Additionally, after completion of the project, the Recipient must complete a Project Completion Abstract (template provided in the Appendix), and must submit it to the district manager (give a copy to the FIA Administrator). An individual familiar with the project should complete the Project Completion Abstract. The **maximum** size of the abstract is 2 pages. Attach a copy of the key map prepared for this project at the back of the abstract.

6.14 The necessary forms, including a template for the Project Completion Abstract, are provided in the Appendix section of this standards document. To help facilitate the preparation of abstracts, an electronic Word file of the Project Completion Abstract is also available from the FIA web site.

ARTICLE 7: POST-CONSTRUCTION INSPECTIONS (IF NECESSARY)

Post-construction Inspections

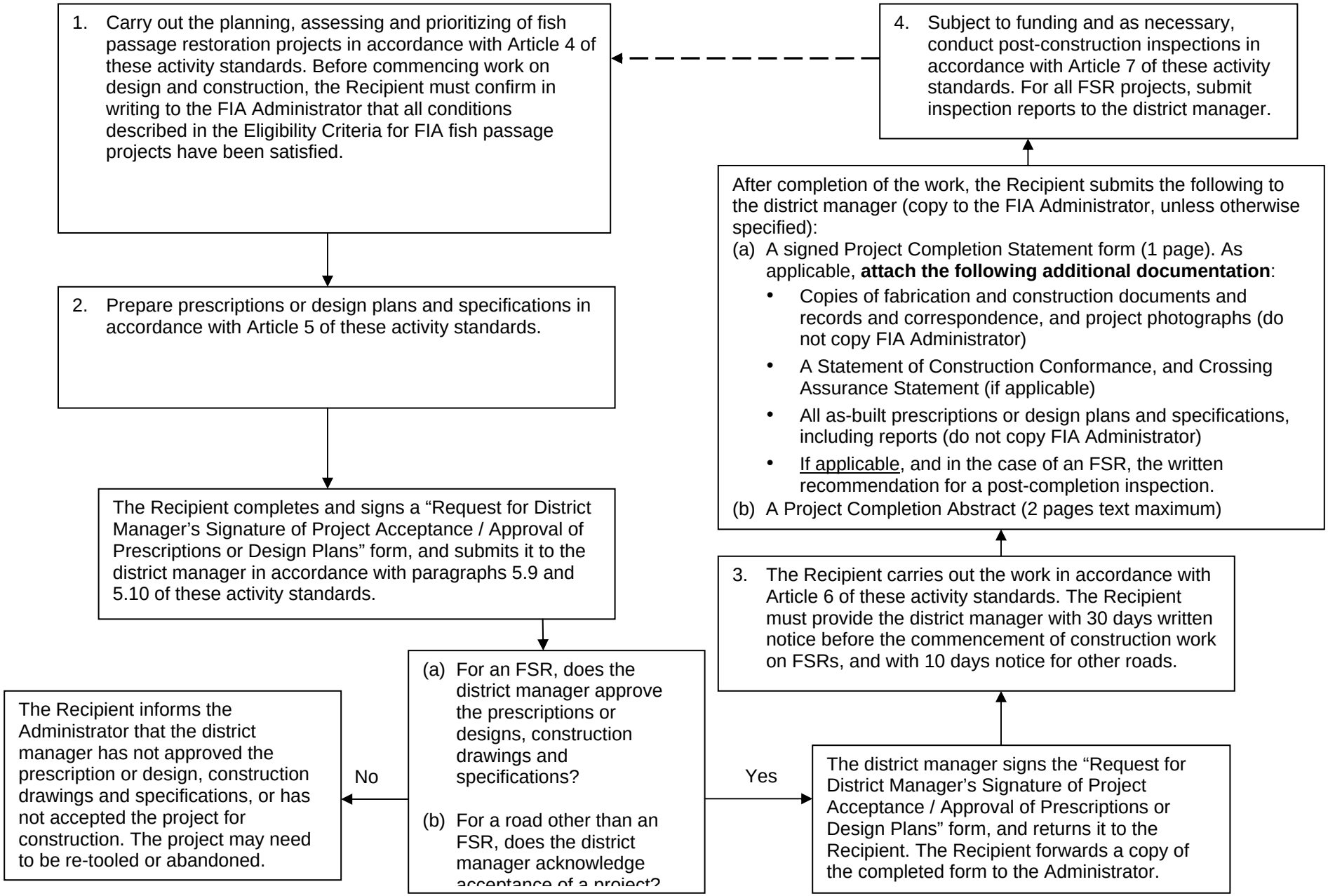
7.1 As necessary after completion of the construction work, and in accordance with paragraphs 5.6 and 6.12, it may be necessary to conduct a post-construction inspection to confirm that the works are functioning as designed. Record all inspections and findings. Remedial works may be necessary to address important deficiencies. If additional remedial works are necessary (consider this to be a new project), carry out further project planning as described earlier in Article 4 and prioritize this new project together with other competing projects on the basis of known hazards and risk of damage to environmental, social and economic values.

7.2 The sample road inspection report provided in Appendix 6 of the *Forest Road Engineering Guidebook (June 2002)* available at http://www.for.gov.bc.ca/tasb/legsregs/fpc/FPCGUIDE/Road/FRE.pdf, or other similar or appropriate inspection report may be used to carry out this inspection.

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 – Fish Passage Restoration Projects

Flowchart of implementation steps, approval processes, and submission requirements



LIST OF REVISIONS TO STANDARDS AND APPENDICES

Version	Date	Comments / Changes to Standards
3	April 30, 2008	Primary Revisions (not all revisions capture here): • 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:** • **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:** Signicant 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 except 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

Confirmation Statement of Project Eligibility Form

Request for District Manager's Signature of Project Acceptance / Approval of Prescriptions or Design Plans Form

Project Completion Statement Form (Engineering Activities)

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

Statement of Construction Conformance (for fish passage restoration works except for structural repair or replacement of a major culvert or bridge)

Project Completion Abstract Template

Confirmation Statement of Project Eligibility Form

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

RECIPIENT MUST COMPLETE ALL SECTIONS AND SUBMIT TO FIA ADMINISTRATOR

SECTION A – GENERAL INFORMATION

Investment Schedule #:_____

Project #:_____

Recipient's Name / Division:_____

Forest District / Region _____

Project type (✓check only one):

- ☐ Removal of a priority stream culvert that is blocking fish passage, and re-establishment of the stream channel.
- ☐ Removal of a priority stream culvert that is blocking fish passage, and replacement with a new stream culvert or bridge that facilitates fish passage.
- ☐ Structural repairs to an existing priority stream culvert or bridge to provide fish passage.
- ☐ Installation of fish baffles, alterations to the stream channel to change backwater conditions, or other activities related to restoration of fish passage at the priority crossing site.

Stream Name/ Stream Classification/ Fish Species:___

_____

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**

Road Type: **(✓check only one):**

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

Road Name is:

_____

Project Location UTM coordinates (attach a key map):

_____

Specify km station on road:_____

Specify Structure No. (if applicable)_____

SECTION B – RECIPIENT'S SIGNATURE

To the best of my knowledge, I confirm that:

1. 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.
2. 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.)
3. 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.
4. The project is not being accommodated in a stumpage appraisal, and will not be in the future.
5. The project does not contradict an Access Management Plan, Forest Development Plan, or Forest Stewardship Plan.
6. 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 REPRESENTATIVE

NAME OF RECIPIENT REPRESENTATIVE *(please print)*	DATE SIGNED YR M M DD	*(if a registered professional, please affix professional seal here)*
RECIPIENTS'S NAME AND ADDRESS (*please print)*		
PHONE NO.	FAX NO.	E-MAIL ADDRESS

"Request for District Manager's Signature of Project Acceptance / Approval of Prescriptions or Design Plans" Form

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

Investment Schedule #: _____

Project #: _____

Recipient's Name / Division: _____

Forest District / Region _____

Project type (✓ check only one):

- ☐ Removal of a priority stream culvert that is blocking fish passage, and re-establishment of the stream channel.
- ☐ Removal of a priority stream culvert that is blocking fish passage, and replacement with a new stream culvert or bridge that facilitates fish passage.
- ☐ Structural repairs to an existing priority stream culvert or bridge to provide fish passage.
- ☐ Installation of fish baffles, alterations to the stream channel to change backwater conditions, or other activities related to restoration of fish passage at the priority crossing site.

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**

Road Type: (✓check only one):

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

Road Name is:

_____

Project Location UTM coordinates (attach a key map):

_____

Specify km station on road: _____

Specify Structure No. (if applicable) _____

SECTION B – ACCESS INFORMATION

1. Does the road require a barricade to temporarily preclude vehicle access until either appropriate repairs or structure replacement 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 comments 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 (design, construction and post-construction inspections)*;
- 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, 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 REPRESENTATIVE		
NAME OF RECIPIENT REPRESENTATIVE *(please print)*	DATE SIGNED YYYY MM DD | |	*(if a registered professional, please affix professional seal here)*
RECIPIENTS'S NAME AND 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 YYYY 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 YYYY MM DD | | |

Project Completion Statement Form (Engineering Activities)

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

RECIPIENT COMPLETES ALL SECTIONS

SECTION A – GENERAL INFORMATION

Investment Schedule #: _____

Project #: _____

Recipient's Name / Division: _____

Project type **(✓ check if applicable):**

- ☐ Removal of a priority stream culvert that is blocking fish passage, and re-establishment of the stream channel.
- ☐ Removal of a priority stream culvert that is blocking fish passage, and replacement with a new stream culvert or bridge that facilitates fish passage.
- ☐ Structural repairs to an existing priority stream culvert or bridge to provide fish passage.
- ☐ Installation of fish baffles, alterations to the stream channel to change backwater conditions, or other activities related to restoration of fish passage at the priority crossing site.

Project Location (attach a key map): _____

District / Region _____

Date work was completed: _____

Road Name or Number Location (reference to key map):

_____

Watershed Name or Operating Area: _____

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 and 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 potographs
- ☐ 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.

Signature of Recipient Representative

Name of Recipient Representative *(please print)*	DATE SIGNED YYYY MM DD	*(if a registered professional, please affix professional seal here)*

RECIPIENTS'S NAME AND 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)

*TO BE SUBMITTED **AFTER** COMPLETION OF THE PROJECT*

SUBMIT COMPLETED FORM TO DISTRICT MANAGER AND FIA ADMINISTRATOR

Structure Identification No. / Name	**Road Name:**	**Location**

Forest District & Forest Region	**Crossing Name**(as applicable)	**Project No.** (as applicable)

Structure Description:

☐ New or replacement bridge ☐ New or replacement major culvert

☐ Structural repairs to bridge ☐ Structural repairs to major culvert

List of Approved Design Drawings:

Drawing and Revision No. / Name of Designer/Date:

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.

Signature of Professional Engineer		
Name of Professional Engineer *(please print)*	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 or replacement of a major culvert or bridge)

TO BE SUBMITTED** AFTER **COMPLETION OF THE PROJECT

SUBMIT COMPLETED FORM TO DISTRICT MANAGER AND FIA ADMINISTRATOR

Structure Identification No. / Name	**Road Name:**	**Location**
Forest District & Forest Region	**Crossing Name(as applicable)**	**FIA Investment Schedule/Project No.**

Project Description:

- ☐ Culvert removal and stream channel reconstruction
- ☐ Stream culvert (other than a major culvert) repair or replacement
- ☐ Installation of fish baffles
- ☐ Modification of stream channel at crossing
- ☐ Other

_____

List of Design Drawings:

Drawing and Revision No. / Name of Designer/Date:

_____

_____

_____

_____

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.

Signature of Registered Professional		*(please affix professional seal here)*
Name of Registered Professional *(please print)*	DATE SIGNED YY MM DD	
EMPLOYER'S NAME AND ADDRESS (*please print)*		
PHONE NO.	FAX NO.	E-MAIL ADDRESS

"Instructions" to Complete Project Completion Abstract for Fish Passage Restoration Projects (engineering activities)

[Insert project name, watershed, and Forest Region here]

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/ MoF District/ MoF Region

Specify the Recipient Name and Division responsible for the project and the MoF 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.

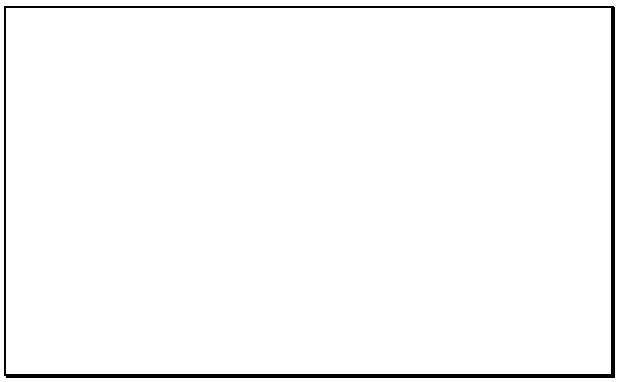


Photo 1. Caption

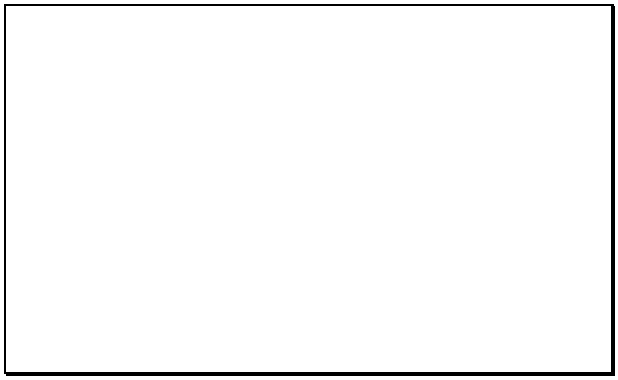


Photo 2. Caption

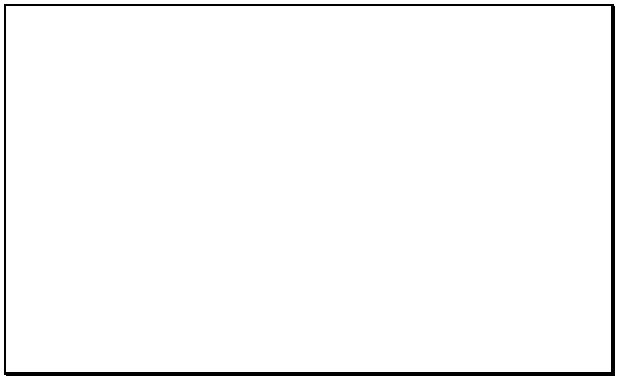


Photo 3. Caption

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