Fraser Salmon & Watersheds Program

2009 Template for Detailed Proposals:

When answering the following questions, do not alter the size or shape of the text boxes.
Answer the following questions using a minimum of 10 pt font.

FSWP File Number*	FSWP 09 101

*Please use the FSWP File Number provided in your acceptance letter

Contact Information

Sponsoring Organization's Legal Name
Musqueam Ecosystem Conservation Society

Are you a federally registered Charity, Non-profit organization or Business (Yes /No)?							No
If yes, please indicate which.		Charity		Non-profit organization		Business	
Registration number				GST number			
Are you a registered Society (Yes / No)?	Yes	Society Registration number			S-47923		

Mailing Address
125A- 1030 Denman Street, Vancouver, BC, V6G 2M6

Physical Address *(if different from above)*
302- 975 Chilco Street, Vancouver, BC, V6G 2R5

Project Manager[1]

Name: Nicholas Scapillati	Title: Executive Director
Affiliation: Musqueam Ecosystem Conservation Society	Phone: (604) 762.4110
Fax: ( )	E-mail: mecsinfo@mac.com

[1] *All correspondence will be directed to the Project Manager.*

Alternate Project Contact

Name: Viki Jackson	Title: Treasurer
Affiliation: Musqueam Ecosystem Conservation Society	Phone: (778) 338.3171
Fax: ( )	E-mail: vjackson@shaw.ca

Partners / Subcontractors

Name: Ryan Mathison Phone: (604) 765.5306	Affiliation: Musqueam Fisheries Commission E-mail: rhinolegend@yahoo.com
Name: Dave Bates Phone: (604) 740.2637	Affiliation: FSCI Biological Consultants E-mail: db5891@telus.net

Project Information

Project Title
Musqueam Creek Wild Salmon Habitat Stewardship & Restoration Project: *Hydrological Assessment Phase Two*

Project Location
Musqueam/ Cutthroat Creek Watershed, Vancouver, BC

Amount Requested	$ 38,280.00	Total Project Value	$ 49,710.00	Non-FSWP funds[2]	$ 11,430.00

[2] *Non-FSWP funds include both cash and in-kind funding. In-kind funding refers to all non-cash contributions such as equipment, supplies, labour, etc. Please refer to Budget Section for further details.*

Project Review

Proposals that have been reviewed by key government agencies must include letters of support. How many letters of support are included in this proposal?	0

Please provide contact information for all reviewers.	
Reviewer: Ryan Mathison Phone: (604) 765-5306	Affiliation: Musqueam Fisheries Commission E-mail: rhinolegend@yahoo.com
Reviewer: Brian Naito Phone: (604) 666-8190	Affiliation: Fisheries & Oceans Canada E-mail: naitob@pac.dfo-mpo.gc.ca
Reviewer: Mike Wilcox Phone: (604) 582-5200	Affiliation: Provincial Ministry of the Environment E-mail: michael.willcox@gov.bc.ca

How will key Federal and Provincial agencies be engaged in this project? 100 words MAXIMUM

Agency: Musqueam Indian Band: Fisheries Department (MFD)

Details: We will provide a project outline to the MFD Watershed Committee & request support and technical assistance for this project. Further, we will work with the Musqueam GIS department to creating a watershed map.

Agency: Fisheries & Oceans Canada

Details: We will provide a project outline to Brian Naito and will work with him to ensure that our project is conducted in compliance with the Fisheries Act and the Standards and Best Practices for In-stream Work. Brian's feed back will be incorporated into our report. In addition, we will enlist the assistance of our community advisor Sandi Hollick-Kenyon in building partnerships with local stakeholders.

Agency: Provincial Ministry of the Environment: Water Stewardship Division
Details: We will provide a project outline to Brian Wilcox and will work with him to ensure that our project meets the Standards and Best Practices for In-stream Work. Mike's feedback will be incorporated into our report.

Does this project require any permits or approvals (Yes / No)?	No

List the type of permits / approvals required for this project.
Permit / Approval[3]: Attached (Yes / No): If No, please indicate the anticipated date of receipt or what steps have been taken to obtain the permit or approval.
Permit / Approval[3]: Attached (Yes/No): If No, please indicate the anticipated date of receipt or what steps have been taken to obtain the permit or approval.

[3] *A copy of all permits received to-date must be included in the application.*

Conceptual Proposal Review Feedback

Conceptual proposals undergo review by staff, advisory teams, management, government agencies and board committees. In many cases our review process has identified extensive questions, advice or requirements that must be addressed in the Detailed Proposal. Please describe how you have addressed the following concerns in the Detailed Proposal. 50 words MAXIMUM per text box. *Please note that while addressing this feedback is important, proposals will still be evaluated against the priority activities.*

Conceptual Review Feedback	Describe how review feedback has been incorporated. If you were unable to incorporate the feedback, please indicate why.
• We encourage you to contact your FSWP staff lead to discuss how to strengthen your 2009/2010 proposal.	Under the recommendation of the FSWP staff we revised our 2008 proposal to address reduced summer time flow, the priority factor limiting production in the Musqueam/ Cutthroat Creek system. Our revised proposal outlined how our Streamkeepers, consultants and conservation partners will work together to produce a hydrological assessment report that will collect and analyze data on the hydrology of the Musqueam/ Cutthroat Creek watershed. Further feedback by the FSWP staff suggested that we split our project in to two phases. Phase one will be completed by March 2009 and phase two will continue the research initiated in phase one and provide a complete analysis and report with recommendations by March 2010. This report will be titled "**State of the Watershed**".

Project Description

Summarize this project in 2 – 3 sentences. 60 words MAXIMUM.

State of the Watershed– *A report on the Hydrology and Biological Productivity of Vancouver's Last Wild Salmon Stream. This report* will provide us with a deeper understanding of the factors limiting the production of salmonids in the Musqueam/ Cutthroat Creek system. Further, it will guide are continuing efforts to protect and restore this important Fraser River tributary.

Provide a general overview of this project. 200 words MAXIMUM.

Musqueam Creek is Vancouver's last wild salmon stream supporting runs of wild Coho, Chum and Cutthroat Trout. It is estimated that at one time this system supported returns of more than 300 Coho per year. Today returns are much smaller hovering around 50 Coho per year.

The Musqueam Coho stock is wild and therefore holds the genetic variability needed to bounce back and once again support abundant runs of wild salmon. Further, Musqueam having been steward to these stocks for more than 4000 years, has a unique and important cultural relationship with this system which has proved to be a significant factor in the survival of this important stream.

Since 1996 the Musqueam Ecosystem Conservation Society has been working towards the protection and restoration of this system. It is our mission to work through science and traditional ecological knowledge towards protecting and restoring the full diversity of species and their habitats within the Musqueam Creek ecosystem, now and for future generations. Salmon are the keystone species in this endeavor.

Due to the extremely reduced summer time flow conditions experienced in both Musqueam and its tributary Cutthroat Creek over the past summer, our consultant FSCI Biological & Hydrological Consultants, recommended that we restructure our restoration priorities and address the hydrological concerns limiting the productive capacity for salmon in these creeks, before we restore any further in-stream habitat.

Through this project our Streamkeepers, consultants and partnership agencies are working together to produce a **State of the Watershed** report. This report will compile and analyze historic information, Traditional Ecological Knowledge, hydrological and biological data on the Musqueam Creek watershed. Phase One of this project was initiated in the autumn of 2008 and will be completed by March 2009. Our 2009 proposal will continue the research and analysis initiated in Phase One, and provide a final report, with recommendations on future conservation projects by March 2010.

List the objectives of your project. 30 words MAXIMUM per text box.

Objective #1	Produce a collection & analysis of 1) hydrological data on the creek stream channels, watershed and aquifer; 2) biological data on salmonid smolt production and adult escapement estimates; 3) the flow capacity of the Pacific Spirit Park creek flow augmentation wells; and 4) Traditional Ecological Knowledge & historic records.
Objective #2	Produce a collection and analysis of detailed Geographical Information Systems (GIS), Light Detection & Ranging remote sensing, and stream survey data.
Objective #3	Produce 1) a detailed understanding of the hydrology of the Musqueam Creek watershed and 2) a detailed understanding of the productive capabilities of both Musqueam and Cutthroat Creek.

Describe the methodology you will use to address the above objectives. 300 words MAXIMUM.

Our project will follow the following methodology…

Hydrological Gauging
Work with FSCI Biological Consultants and community Streamkeepers to maintain and collect data from 6 stream gauging stations, pressure transducers and staff gauges which are recording data throughout the Musqueam/ Cutthroat Creek watershed and its stream channels.

Watershed Mapping
Work with FSCI Biological Consultants and Musqueam GIS Department to collect and analyze detailed GIS, LIDar and habitat survey map data on the watershed, stream channels, storm drains, trails roads, ditches, bogs, aquifer, wetlands, etc.. use this data to produce both a detailed GIS and outreach map.

Estimating Productive Capacity
Work with FSCI Biological Consultants and community Streamkeepers to maintain and collect data from smolt trapping station positioned in strategic locations within the Musqueam/ Cutthroat Creek system.

Analysis
Work with FSCI Biological Consultants to analyze all hydrological, biological, Traditional Ecological Knowledge, and historic data collected.

Report & Recommendations
Work with FSCI Biological Consultants to write a draft **State of the Watershed** report. This report will include an introduction, description of the study area and its history, the methods used in this study, the results and findings, and discussion. The benchmark for this report will be the 1990 Kurt Fausch report: **Management of Habitat in Musqueam Creek for Resident Anadromous Salmonids**. Recommendations from project partners will be gathered, considered and incorporated in to the final report.

List the expected outcomes of this project (i.e., the tangible end products resulting from this work). 30 words MAXIMUM per text box.

Outcome #1	Publish a detailed State of the Watershed report on the Hydrology and Biological Productivity of Vancouver's Last Wild Salmon Stream and distributed it to our project partners, watershed stakeholders and funders.
Outcome #2	Publish a detailed outreach map of the Musqueam Creek watershed used to educate the public, engage our partners in our conservation strategy and capture the imagination of our volunteers, funders and supporters.
Outcome #3	Provide a foundation of information from which to build a strategic plan for the restoration of the Musqueam Creek watershed, its stream channels and its salmon runs.
Outcome #4	Establish a benchmark for which to measure the success of future habitat and stock enhancement projects.

Describe why this project is innovative and not a refinement or application of an existing technique or method. 150 words MAXIMUM.

We feel that our approach is innovative in that we will be incorporating Traditional Ecological Knowledge (TEK) into our report. Accompanied with the scientific data we gather TEK will provide a historic, culture and local observation component to our report.

TEK represents the experienced of many members of the community accumulated through generations of close interactions between people and the natural world. This specific local knowledge includes the environmental linkages occurring in the Musqueam Creek ecosystem as well as a historic perspective of the development of the area and the abundance of annual salmonid returns.

By recognizing the utility of TEK, we engage in an exchange of knowledge and help to foster a deeper conservation ethic within the Musqueam community. Both science and TEK are uniquely positioned to inform each other and to provide critical insights and new perspectives on the way conservation is conducted.

Describe how your project / organization will become self-sufficient in the future. Specifically, describe how you will access funding resources and initiate local fundraising initiatives to ensure the long-term sustainability of this project. 100 words MAXIMUM.

Over the last ten years MECS has build relations with many different funding organizations. These organizations are actively engaged in our monthly volunteer work parties and special events. We feel that by directly engaging our funders and partners in our organization, by recruiting an active and dynamic board of directors and by engaging our volunteers in fun and interesting events that we help to ensure the long-term financial sustainability of our organization.

In particular board member David Wood, General Manager of the Shaughnessy Golf & Country Club, was instrumental in building our relationship with the Pacific Salmon Foundation (PSF). And, in 2008 one of our founding supporter, Dr. David Suzuki, hosted our first Earth Day fundraising event. This event engaged corporate sponsors, community partners, our members and volunteers in a fundraising dinner and silent auction. This event was such a success that we are currently planning our 2009 event and have already begun to secure sponsors.

Break the project into discrete, sequential tasks providing the expected completion date for each task.

Task	Completion Date
Hydrological Gauging	Ongoing
Estimating Productive Capacity	April 2009
Watershed Mapping	September 2009
Analysis	January 2010
Partner Review	February 2010
Final Report	March 2010

Describe the experience and qualifications of your organization. 100 words MAXIMUM.
MECS was born out of a partnership between the Musqueam Indian Band and the David Suzuki Foundation. Over the last decade we have been guided by the values and wisdom of these two respected founding organizations. During that time we built relationships with local stakeholders and gathered valuable biological and Traditional Ecological Knowledge that enable us make informed and strategic decisions. Through our Streamkeeper program we have developed capacity within the Musqueam community, which not only allows us to draw upon experienced labour but also to maintain a direct link to the community. Further, our diverse board of directors provides us with the experience of engineers, biologists, NGO executive directors, community leaders, local business representatives and First Nations leaders. Bringing all these resources together is our Executive Director who has a Biogeography Degree from McMaster University and who has continuously managed this project since 1996.

Describe the experience and qualifications of key individuals involved in this project.

Name	Title	What qualifies them to play their anticipated role in this project? Describe in point-form using 50 words MAXIMUM per text box.
Dave Bates FSCI Biological Consultants	Consultant	Coordinator of Fisheries Biology in the Applied Fisheries and Forestry Science Department at Capilano College. Dave's current research includes aquatic habitat assessment, utilization, rehabilitation and ecohydraulics with a focus on anadromous salmonids. Specifically his current work is attempting to meld hydraulics and the physics of flow to habitat utilization. Dave is also one of the contributing authors of the Streamkeepers Handbook A Practical Guide to Stream and Wetland Care. DFO, 1995. Further, Dave has extensive field experience with salmon habitat restoration projects across the province.
Terry Point	Project Manager	Terry has been a Streamkeeper since 1995. He was trained by Dave Bates and has coordinated every major habitat survey and restoration project for MECS since 2004.
John Termuende	Principle Termuende Hydrological Services	John is a partner in Sound Energy a small hydro electric company where he is the lead hydrologist. His experience is in the development of small cost effective gauging stations, data collection and analysis. Many of his small stations are in use around BC by hydro, mining and government restoration projects. Currently he is working on the hydrological analysis of the Sakinaw Lake (DFO) watershed and McNab Creek watershed (Sound Energy).
Nicholas Scapillati	Executive Director	Nicholas has a degree from McMaster University in Biogeography, worked as a project researcher and project coordinator for the David Suzuki Foundation and as Executive Director has continuously managed this project since 1996.

Describe how your project (40 words MAXIMUM per text box):	
Collaborates with and utilizes the capacity of First Nations	1) The Musqueam Indian Band (MIB) is one of our founding partners and three members of the Band sit on our board of directors. 2) MECS has a memorandum of understanding with the Musqueam Fisheries Department and regularly meets with the MFD Watershed Committee. 3) MECS works with Musqueam elders gathering TEK and incorporating this information into our strategic plans. 4) The MIB GIS Department is a working partner in this project.

continued…	
Involves community members in project activities	
Mentors and / or trains individual community members	Dave Bates is a former professor at Capilano College and coordinated our 2006 Streamkeeper training program. Through this project Dave will continue to mentor and train our Streamkeepers and Project Manager in data collection, analysis and interpretation as well, as how to formulate a restoration formula from these findings.
Plans to transfer project results to relevant individuals, groups or agencies within the Fraser Basin	We will make this report as well as, other supporting research available to other individuals, students and conservation groups as downloadable resources on our website.
Contributes to the long-term conservation of Pacific salmon	Our project will help to conserve the Musqueam Coho salmon stock, the last wild salmon stock in Vancouver and an important contributer to the larger Fraser River stock. Further, the Musqueam/ Cutthroat Creek system supports runs on Coho, Chum and Cutthroat Trout.
Fits with local and / or regional plans (e.g., recovery plans, watershed plans)[5] [5] *Please provide citations for all plans that you reference. Citations do not count in word limits.*	The City of Vancouver is initiating a Integrated Storm Water Management Plan for the Dunbar neighbourhood in 2009. The eastern portion of the Musqueam Creek Watershed falls in this area. MECS is in discussion with the City with regards to this project and will be an active member of this planning team. Further, as the Musqueam Coho run is wild the conservation of this stock and its habitat meet the requirements of the Wild Salmon Policy.

Project Budget

Please fill out the Budget Template provided on the following page. To use the Budget Template:

- **Place your cursor anywhere on the Budget Template**
- **Double click**

This will take you into a new Budget Spreadsheet. To use the Budget Spreadsheet:

- **Start by filling out Part A and identifying how much each item or service will cost**
- **Note: the Budget Spreadsheet is designed to sum totals automatically so it will not allow you to enter values in the 'Total' columns**
- **Next complete Part B and identify how you will pay for each item or service**

To exit the Budget Spreadsheet, place your cursor anywhere outside of the margins and click. This will return you to your working Word document where you can complete the rest of your application.

Please note:

- **Non-FSWP funding includes both cash and in-kind funding. In-kind funding refers to all non-cash contributions such as equipment, supplies, labour, etc.**
- **Volunteer labour is based on a standard charge out rate for professionals ($200/day for skilled labour and $120/day for unskilled).**