

Hectares BC

Project Charter

Prepared For

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Document Tracking

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REVISION HISTORY

Date	Version	Author	Description of Changes
May 25, 2007	1	Sue Fox (Refractions Research)	First draft
Jun 11, 2007	2	Sue Fox (Refractions Research)	Updates based on inputs from Matt Austin; incorporated wording from HaBC Business Case.
Jun 12, 2007	3	Sue Fox (Refractions Research)	Replaced Greg MacMillan with Wayne Bourque in stakeholder list. Added names to approval list.
Jun 20, 2007	4	Sue Fox (Refractions Research)	Added Project Team section; added description of Conservation Planning Tools Committee.

APPROVALS

Approval of the Project Charter indicates an understanding of the purpose and content described in this document. By signing this document, each individual agrees work should be initiated on this project and necessary resources should be committed as described herein.

Approver Name	Title	Signature	Date
Pia Archibald	Co-chair, Conservation Planning Tools Committee		
Marian Adair	Co-chair, Conservation Planning Tools Committee		

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1 PROJECT OVERVIEW

1.1 PROBLEM STATEMENT

The British Columbia provincial government has a wealth of geospatial data but limited staff and tools for its analysis. Many government agencies, non-government organizations, First Nations groups, researchers and other associations, including the general public, are involved in a range of planning, assessment, reporting and decision-making functions pertaining to the environmental and natural resources of British Columbia. Traditional processes for producing this information have been project-based: raw data are assembled from multiple sources; an overlay with the analysis units is carried out; metrics are calculated; a report is written; and the data are filed and forgotten. When new geographic areas are of interest or different attributes or metrics are required, the entire project process is repeated.

This process is time-consuming and inefficient due to the repeated effort each time a new requirement for data is identified. Data produced from these projects is not necessarily consistent as it is collected from different sources. Additionally, accessibility to information is limited to a subset of users as some technical expertise is required to obtain the information.

Construction of a collaborative environmental analysis system would allow users to share access to common data, provide easy access to their own data, generate summaries of environmental statistics for study areas, and combine information from different disciplines in a straightforward non-technical manner.

1.2 PROJECT DESCRIPTION

Hectares BC is a project to prototype a new tool for geospatial data analysis in the natural resource area. The project divides the Province into 95 million one-hectare cells and calculates key metrics of human impact and environmental conditions (e.g. length of road, forest characteristics, climate, projected climate change, known species habitat) for each cell.

The goal of Hectares BC is to improve access to summarized, integrated geospatial data for a wide range of clients and to deliver timely, consistent responses to clients with a minimum of intervention by geomatics professionals. It also aims to provide an analytical framework that is faster and more flexible for repeated analyses than what is currently available to advanced users of geospatial data outside of government.

Users of Hectares BC will be able to submit queries and get tabular responses and raster maps as outputs. These outputs may constitute the final results or may instead

be passed into other tools, such as specialized analysis routines, statistical packages, image analysis systems and geographic information systems.

If the pilot is successful, it is anticipated that data custodians and users will find it to be sufficiently beneficial to continue to maintain it over time. All of the data included in Hectares BC will have been determined by the data custodians to be suitable for release to the public (the vast majority is already accessible but in a form that limits its use).

The specific applications that Hectares BC will initially focus on are:

- Species at risk decision-making;
- Biodiversity status report and action plan;
- Species distribution and habitat supply modelling;
- State of Environment reporting;
- Forest inventory statistics, including State for Forests reporting;
- Hydrological modelling;
- Mountain pine beetle decision support;
- Replacing Watersheds Statistics database for decision support; and
- Future forest ecosystems.

Hectares BC is effectively an extension of the Land and Resource Data Warehouse (LRDW) and relies upon it as a source for many of its inputs and associated metadata. Hectares BC serves the purpose of the LRDW by further integrating geospatial data and facilitating its use.

1.3 PROJECT GOALS AND OBJECTIVES

The objectives of the Hectares BC project are to:

- Provide tools to better integrate scientific information with the social and economic factors considered in resource management decisions;
- Develop information resources to facilitate more effective environmental decision-making and maximizing the use of technology in the management of information resources; and
- Provide external users and internal provincial natural resource managers with the ability to more easily access and work with environmental geospatial data.

1.4 PROJECT BENEFITS

- Improved access to summarized, integrated data by a wider range of clients;
- More consistent and repeatable reporting of results/maps;
- Shortened timeline to respond to queries;
- Less time spent assembling data and producing maps resulting in more time available for analysis and decision-support;
- Increased modelling capability;
- Better service to clients; and
- Better decision-making.

1.5 OTHER ALTERNATIVES CONSIDERED

The only alternative to a raster-based approach for facilitating access to and use of geospatial environmental information by pre-processing data is a vector-based approach such as Watersheds BC. This approach has been tried and has yielded some benefit but has far less flexibility than a raster-based approach. For example the units are much larger and can not be combined into different analysis units without significant additional work. In addition, the combinations of data must be pre-determined (e.g. road density on steep slopes) and such a system is difficult to maintain because these combinations must be recalculated when one of the components (e.g. roads) is updated.

2 PROJECT STATUS

Two prior phases of the project have been completed for the Conservation Planning Tools Committee of the BC Trust for Public Lands. Phase 1 was completed in August 2006, and the goal was to minimize risk in subsequent phases by providing a design to guide the next phase, and to ensure that all the software components exist and function well enough to carry out the processing.

Phase 2 was completed in March 2007. Phase 2 involved creating a system for processing the data using the designs and tools investigated during Phase 1, and processing various data layers identified as important for supporting the immediate ecological planning needs of the client.

This charter describes Phase 3 of the project. The following tasks have been accomplished to date:

- Creation of Business Case;
- Creation of Project Plan for Requirements and Design phases;
- Identification of what data layers to include (in progress);
- Provide input to the draft of a provincial raster data standard;
- Presentation of business case to ILMB executive; and
- Secure funding.

3 SCOPE

This section describes the project boundaries in terms of its activities and the work to be performed.

3.1 IN SCOPE

The following items are in scope for this project:

- Interview user stakeholders to determine business requirements;
- Create user stories based on interviews;
- Develop requirements document;
- Develop user interface design document including screen mockups;
- Develop systems design document including system architecture and technical architecture;
- Provide users the ability to supply data, formulas for extracting data and areas of interest;
- Build CGDI data-access mechanisms, making the data and the system available to researchers, administrators, planners and the public;
- Provide a web interface for generating summary metrics from the system;
- Provide outputs in raster format including GeoTiff, Arc/Info ASCII grid and KML;
- Add a large representative population of climate, topography, watershed, wetland, local government, land use, ground cover and ecosystem layers;
- Add existing CGDI data layers;
- Provide a link to the LRDW, the BC Digital Road Atlas, and the BC Corporate Watershed Base, all of which will be used as data sources; and
- Provide a link from Hectares BC to a species distribution modeling tool.

3.2 OUT OF SCOPE

The following items are out of scope and provided here to help clarify the scope boundaries of the project:

- Manipulating raw data into a form suitable for upload into Hectares BC; and
- Addressing data quality issues.

4 MAJOR DELIVERABLES

The major deliverable products for this project are:

Major Deliverable	Description	Target Date
Project Plan – Requirements and Design Phases	Work plan showing major tasks and timelines for the requirements and design phases.	May 15, 2007
Business Requirements	Describes user requirements, including user stories.	Jul 24, 2007
User Interface Design Document	Describes the web user interface design, including screen mockups.	Sep 6, 2007
Project Plan – Implementation, Testing and Migration Phases	Work plan showing major tasks and timelines for the implementation, testing and migration phases.	Sep 10, 2007
Design Document	Describes the design of the system, including architecture.	Sep 14, 2007
Development and Implementation	Actual build and implementation of system.	Mar 31, 2008
Testing and Migration	Testing and migration of system, including internal testing and user acceptance testing.	Jun 30, 2008

5 PROJECT TEAM

The following table lists the project team members:

Name	Organization
Matt Austin (Project Manager)	Ministry of Environment
Art Tautz	Ministry of Environment
Al Becker	Integrated Land Management Bureau
Peter Friesen	Integrated Land Management Bureau
Malcolm Gray	Integrated Land Management Bureau
Greg Lawrance	Ministry of Forests and Range
Tim Salkeld	Ministry of Forests and Range
Adrian Walton	Ministry of Forests and Range
Dave Nicolson	Nature Conservancy of Canada
Paul Ramsay	Refractions Research Inc.
Sue Fox	Refractions Research Inc.

6 STAKEHOLDERS

The following stakeholders' interests must be considered throughout the project:

Stakeholder	Represented by
Conservation Planning Tools Committee	Matt Austin Dave Nicolson
Fisheries and Oceans Canada	Kim Hyatt Heather Stalberg
Integrated Land Management Bureau	Malcolm Gray Al Becker
Ministry of Environment	Matt Austin James Quayle
Ministry of Forests and Range	Greg Lawrance Tim Salkeld Adrian Walton Tom Niemann
Nature Conservancy of Canada	Dave Nicolson
Parks Canada	Wayne Bourque

The Conversation Planning Tools Committee (CPTC) includes representatives from all three levels of government as well as non-governmental organizations and has a mandate and dedicated funding through 2009 to develop and implement a provincial biodiversity strategy based on the best available scientific information. Under the CPTC is a Technical Subcommittee that is responsible for obtaining and organizing the best available scientific information to support the development and implementation of the biodiversity strategy. Hectares BC will be a foundational element for organizing and analyzing the geospatial environmental information

The Technical Subcommittee will provide oversight of the project on behalf of the CPTC. The Nature Trust is the financial representative for the CPTC.

7 ISSUES AND CONSTRAINTS

The following is a list of potential issues or constraints that could have an impact on the success of the project:

- The system will be managing a very large amount of data, and performance may be compromised. Performance testing will be conducted throughout the project to ensure any issues are addressed as early as possible.
- Funding may not be available to maintain Hectares BC after the pilot project is complete. This risk will be managed by focusing the development of the project on meeting the needs of users and data custodians with as low an ongoing cost as possible. Building Hectares BC outside government with a broad array of partners will also minimize the cost to government.
- Limited access to stakeholders for the duration of the project, especially those stakeholders that are not part of the Steering Committee.
- Broad initial conception of the system will need to be pared down into a design that is achievable within the project budget.
- The project will use technology that is not standard to the provincial government.

8 BUDGET

Project Cost	
Requirements and Design	\$70,000
Implementation	\$150,000
Testing and Migration	\$80,000
Total	\$300,000

Project Funding			
Project Collaborators	Financial Contribution (Cdn \$)		
	Cash Contribution	In-kind Contribution	
		Description	Cash value
BC Ministry of Environment	\$25,000	Labour	\$25,000
BC Integrated Land Management Bureau	\$30,000	Labour	\$20,000
Nature Conservancy of Canada		Labour	\$5,000
BC Ministry of Forests and Range	\$10,000		
Conservation Tools Planning Committee	\$10,000		
Parks Canada	\$5,000		
Fisheries and Oceans Canada	\$10,000		
Collaborator Total	\$100,000		\$50,000
GeoConnections Funding	\$150,000		
Total	\$300,000		