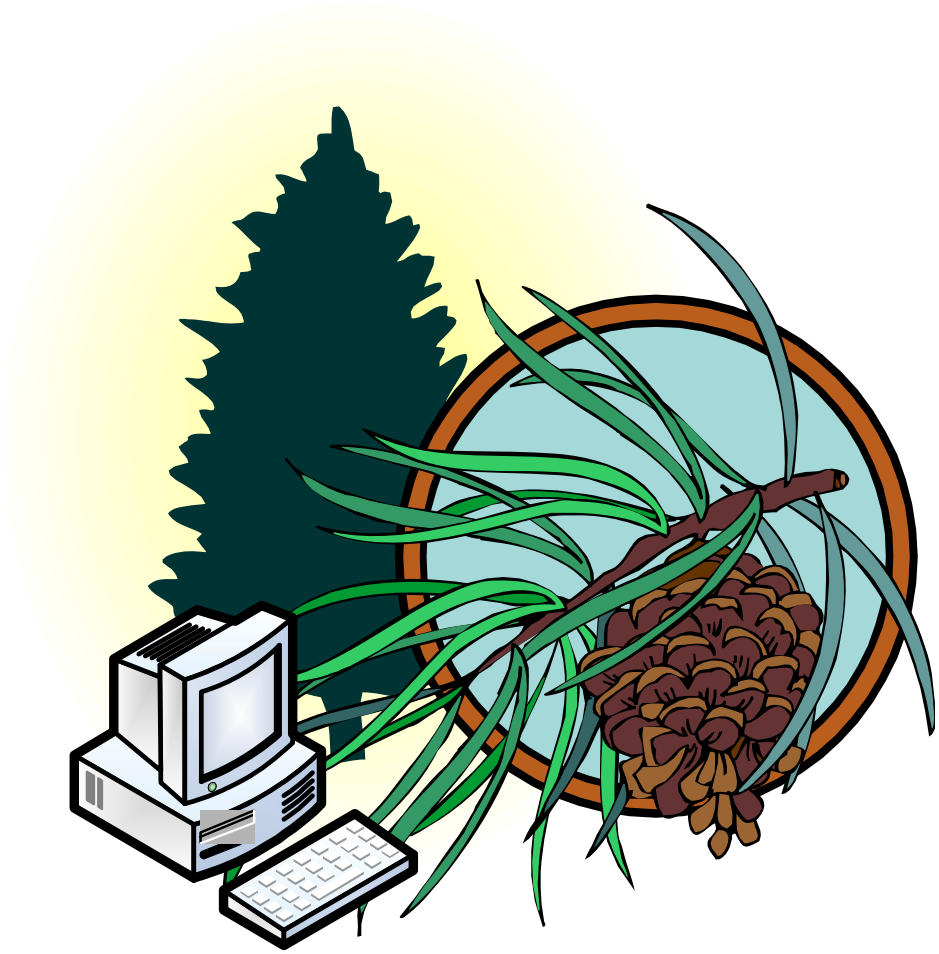
Woodlot e-FM Strategic Plan Project

General Report



November 28, 2008
Woodlot e-FM Strategic Plan Project Team Members

Executive Summary

The Woodlot e-FM Strategic Plan Project is a joint project between the Ministry of Forests and Range (MFR) and the Federation of BC Woodlot Associations (FBCWA). The intent of this project is to develop a plan that provides short, medium and long-term recommendations to support woodlot licensees' shift to electronic forest management (e-FM). While woodlot tenures are not exempt from the new requirements and opportunities offered by e-FM, the unique challenges faced by woodlot licensees trying to work within the e-FM system must be addressed.

The need for this project has come about because of a series of legislative, regulatory, and policy changes, the implementation of e-FM, and challenging market conditions that have had a relatively higher impact on woodlot licensees than larger licensees. In addition, woodlot licensees generally have limited access to, and experience with, the industrial software needed to create the XML/GML data required by e-FM systems. This has prevented many licensees from accomplishing even basic submissions. Those who have attempted submissions have often failed, even after investing many hours of effort. Although there have been some historical initiatives that have attempted to support licensees through this shift, these initiatives have generally lacked implementation, have fallen short of expectations, and woodlot licensees continue to struggle at this time.

Using information gathered from MFR Business Area Experts as well as a broader panel of licensees, MFR staff, and consultants, the project team drafted 15 Business Process Maps (BPMs) and identified 54 issues, 52 inconsistencies, and 16 perceived duplications. This information was used to develop a list of 75 short, medium and long term recommendations. The highest priority short, medium, and long term recommendations included:

Top 10 Short Term Recommendations

1. A cross-functional team (CF Team) should be formed to build on the work completed by the Woodlot e-FM Strategic Plan project, and to work towards implementing the recommendations that receive approval.
2. A Woodlot specific e-FM expert should be available as the first point of contact when woodlot licensees require assistance.
3. Provide additional outreach and training for licensees.
4. Identify, obtain and distribute a suitable tool to facilitate e-FM spatial and tabular data entry by licensees.
5. Develop an audience specific web portal for client access to e-FM applications and guidance material.
6. Provide e-FM training for MFR staff.
7. Finish Data Clean up projects.
8. Staff a full time position to lead the Cross Functional Team.
9. Grant view access to all e-FM applications to woodlot licensees and to district staff.
10. Change system requirements and definitions for Stocking Standards in RESULTS to match woodlot legislation and regulations.

Top 5 Medium Term Recommendations

1. Create two cross-program/branch full time positions for e-FM implementation (includes position identified above in Short Term Recommendation #8).
2. Review and update base map information in each woodlot licence using orthophotos to identify apparent mapping errors.
3. Improved, client-focused reports from the RESULTS, CRS and HBS systems.
4. Develop appropriate standards for improved licensee data submission, focusing on usability of interface, data definitions, and user help facilities.
5. Reassess current WASTE methods and reporting requirements.

Top 3 Long Term Recommendations

1. Tenure Recognition: All e-FM systems should recognize the woodlot licence tenure and accurately reflect appropriate business rules.
2. Implement improved e-FM guidelines related to: look and feel, standardized terminology and help tools, save principles, navigation between systems, etc.
3. Develop an interactive webpage based on the overview business map that allows users to drill down to detailed BPMs and offers links to related systems and supporting information.

The recommendations from this project provide the basis for developing a strategic plan that, if implemented, would serve to allow woodlot licensees to effectively and efficiently interact with e-FM systems. This would benefit both licensees and MFR by decreasing workloads, increasing the quality of the data submitted, increasing the reliability of data in the systems, and promote a more collaborative relationship. Ultimately, this will provide both parties the chance to make better forest management decisions.

The key to realizing these benefits is to move forward with the preparations for implementing the recommendations with the continued support of the Joint Working Group and the Operational Leadership Team.

Table of Contents

Executive Summary i
Table of Contents iii
List of Tables iii
1. Introduction 1
1.1. Location of Materials 1
1.2. Definition of Terms 1
2. Project Background 3
2.1. The Woodlot e-FM Team 4
2.2. Project Charter Summary 5
3. Project Methodology 6
3.1. Research 6
3.2. Review and Analysis 6
3.3. Recommendations 6
3.4. Strategic Plan 7
4. Project Outcomes 7
4.1. Business Process Maps 7
4.2. Inventory of e-FM Concerns 8
4.2.1. Issues 8
4.2.2. Inconsistencies 8
4.2.3. Perceived Duplication 8
5. Project Recommendations 9
5.1. Recommendation Themes 9
5.1.1. Theme 1: Data Clean Up 9
5.1.2. Theme 2: Audience-Focused Systems 10
5.1.3. Theme 3: Review of Data Requirements 10
5.1.4. Theme 4: Audience Focused Training 10
5.1.5. Theme 5: e-FM Coordination and Integration 10
5.1.6. Theme 6: Policy Practices Review 11
5.2. Priority Short, Medium, and Long Term 11
5.2.1. Top 10 Short Term Recommendations 11
5.2.2. Top 5 Medium Term Recommendations 11
5.2.3. Top 3 Long Term Recommendations 12
6. Key Learnings 12
6.1. Business Drives the Systems 12
6.2. Knowledge Transfer 12
6.2.1. Ministry of Forests Staff 12
6.2.2. Woodlot Licensees 13
6.3. The Past Revisited – Need for Implementation 13
6.4. Essential Culture Shifts 13
7. Conclusion 14
Appendix A 15
Appendix B 16
Appendix C 17

List of Tables

Table 2-1: e-FM Project Team Members. 5

Table 4-1: Inventory of Business Process Maps created as part of the Woodlot e-FM Project. 7

1. Introduction

The Woodlot e-FM Strategic Plan Project is a joint project between the Ministry of Forests and Range and the Federation of BC Woodlot Associations that attempts to address the electronic Forest Management (e-FM) obstacles facing woodlot licensees. Although initially focused solely on woodlot licensees, the Project Team quickly realized MFR staff also struggle with components of e-FM. For that reason the Project Team considered that clients of the e-FM systems included both woodlot licensees and MFR staff.

This document is the General Report. It is accompanied by a second document, the Woodlot e-FM Project Technical Report.

This General Report presents the 18 highest priority recommendations for action as well as an overview of the Woodlot e-FM Strategic Plan Project to date, background information on why the project was required, and the approach taken to the Project.

The Technical report contains the full suite of 75 recommendations, and the detailed business process charts that map the regulatory and reporting environment that woodlots work within.

1.1. Location of Materials

Materials related to this project including this report and the Technical Report can be found at the sites listed below. Specific webpage locations may change over time, thus are not shown.

Public Access:

- Resource Tenures & Engineering Branch Woodlot Program Website: http://www.for.gov.bc.ca/hth/woodlots/woodlot-program.htm
- Federation of BC Woodlot Associations Website: http://www.woodlot.bc.ca/
- FTP site: www.for.gov.bc.ca - /ftp/DCC/external/!publish/Woodlot EFM Project Products/Woodlot EFM Project Products

MFR Access only:

- TRIM e-filing Workgroup System – accessed through Outlook using any of the following:

  Classification: ARCS-00400-20

  Title: 100001 - PLANS AND PROGRAMS: GENERAL - PROGRAM PLANNING FILES - Woodlot EFM Strategic Planning

  Retrieval Code: WOODLOT EFM

Woodlot e-FM Team and Broad Referral Panel Access only:

- SharePoint Site for Woodlot e-FM Project: https://sharepoint.forests.gov.bc.ca/Woodlot_EFM/default.aspx

1.2. Definition of Terms

This section lists a series of terms and associated definitions that are used throughout this document and/or the Technical Report.

Term	Definition
AFS	Audience Focused Systems
BPM	Business Process Map
Business Area Staff	MFR staff employed at the Branch level who are specialists in those business areas listed under Section 3.1
C&E	Compliance and Enforcement Branch – custodians of CIMS

CIMS	Compliance Information Management System - MFR system used by the Compliance and Enforcement Branch to track licensee compliance
CIO	Chief Information Officer
Clients	Woodlot Licensees and their consultants as well as MFR Staff and their consultants
CP	Cutting Permit
CRS	Corporate Reporting System - MFR system used to report out information contained in other systems (e.g. FTA, RESULTS)
Duplication	Data that appears to be requested more than once
ECAS	Electronic Commerce Appraisals System – MFR system used to submit appraisal data to MFR
e-FM	Electronic Forest Management
ESF	Electronic Submissions Framework – MFR system enabling submission of electronic data to other MFR systems (FTA & RESULTS)
FAIB	Forest Analysis and Inventory Branch - custodians of VRIMS
FAQ	Frequently Asked Questions
FBCWA	Federation of BC Woodlot Associations
FDP	Forest Development Plan
FPB	Forest Practices Branch – custodians of RESULTS
FPC	Forest Practices Code of British Columbia Act
FSP	Forest Stewardship Plan
FSP Clients	Major Forest Tenure Holders who will be managing forests under Forest Stewardship Plans (FSP)
FRPA	Forest and Range Practices Act
FTA	Forest Tenure Administration System - MFR system responsible for receiving, processing and issuing tenure documents including Cutting Permits, Road Permits, Licenses to Cut
GAS	General Appraisal System – MFR system responsible for generating stumpage rate
GML	Geography Mark-up Language - GML is a subset of XML that is used for representing spatial data
HBS	Harvest Billing System – MFR system responsible for managing scale data and invoices
IMG	Information Management Group – recently changed to Information Management Branch
ILMB	Information Land Management Bureau – custodians of LRDW
Inconsistencies	Lack of uniformity between two or more pieces of documentation, advice, guidance or business practice description
Issues	Problems preventing efficient completion of a particular task
JWG	Joint Working Group
LRDW	Land and Resource Data Warehouse
MFR	Ministry of Forests and Range

Non-FSP Clients	Tenure holders and/or forest managers who are responsible for managing forests, but do so outside of a Forest Stewardship Plan (FSP) including woodlot licensees, MFR district staff, etc.
OLT	Operations Leadership Team
RESULTS	Reporting Silviculture Updates and Land Status Tracking System – MFR system responsible for tracking silviculture information and obligations
Review Panel	Although all MFR woodlot staff and all woodlot licensees were invited to participate, the final panel consisted of a broad based group of approximately 44 MFR staff and 12 Woodlot Licensees, 3 consultants, and 1 ILMB staff person. The review panel and business area staff contributed greatly to this project.
RP	Road Permit
RTEB	Resource Tenures and Engineering Branch – custodians of FTA
SPAR	Seed Planning And Registry – MFR system responsible for entry and maintenance of seed and vegetative lot information and queries
Team	The e-FM Strategic Plan Project Team
TRIM	Terrain Resource Information Mapping
VRIMS	Vegetation Resource Inventory Management System – MFR system used to track and update the Provincial Forest Inventory
WASTE	Waste and Residue Reporting System - MFR system used to submit waste and residue data to MFR
WeSP	Woodlot e-FM Strategic Plan Project
WLFMR	Woodlot Licence Forest Management Regulation (under FPC)
WLP	Woodlot Licence Plan
WLPPR	Woodlot Licence Planning and Practices Regulation (under FRPA)
XML	Extensible Mark-up Language - XML is a general-purpose specification for creating markup languages to describe and encode information allowing information systems to share structured data

2. Project Background

Changes to forest management regulations and the implementation of the e-FM initiative have greatly affected the way in which forest industry business is conducted. Appendix A provides a detailed chronology of key recent forest management changes and challenges. While the move to e-FM was intended to improve recording of and access to information, the cumulative impact of these changes has had unintended, adverse impacts to both the MFR and woodlot licensees, including:

- reduced quality of data collected,
- reduced level of reliance that can be placed on the data,
- increased workloads on staff and licensees,
- reduced willingness to gather and/or submit information,
- questionable usefulness of the currently required information, and
- unclear methodology for collecting information.

Since the implementation of e-FM in 2003-2005, the issues encountered by woodlot licensees have evolved, but there remains a clear feeling among licensees that costs and expectations of e-FM are onerous. Although all forest tenure holders were impacted by the move to e-FM, the relative impact to woodlot licensees was exceptional. Some examples of why the impact has been greater to woodlot licensees than to other forest tenure holders include:

- design of the current e-FM system has focused on the FSP clients, and has neglected to include input options for woodlot specific administrative regimes,
- efforts since 1995 to streamline the administrative business rules for woodlots have not been reflected in changes to the systems,
- woodlot licensees have limited cash flow, varying levels of access to and ability to work with technology, and interact with the e-FM systems infrequently, and
- purchasing industrial grade software to successfully interact with the e-FM system is not a viable option for individual licensees.

Appendix B lists a series of initiatives that attempted to support woodlot licensees through the transition to e-FM. Partly because of the reasons listed below, initiatives between 2003 and 2007 have had little success, and woodlot licensees continue to struggle with e-FM:

- Initiatives occurred largely at a level technically "above" the average woodlot licensee.
- Training initiatives were confounded by the sweeping scope of the changes underway at the time and by ongoing uncertainty regarding what would be required and when it would be required.
- Limited access to and experience with software needed to create the GML spatial data required by the e-FM system prevented many licensees from accomplishing even basic submissions. Those who attempted submissions often failed, after investing many hours of effort.
- Ongoing crises in forest health and log markets fully occupied many licensees.

Since 2007, there has been increased effort by the MFR and FBCWA to include woodlot representation on the planning and testing panels of various branches, work groups and committees. The CIO Forum, RESULTS working group, and RESULTS training team have, with some success, initiated client specific outcomes with TRIM access, system modifications, and client specific training. However, there are still many unresolved e-FM issues that continue to plague licensees and district staff, and these must be addressed in a coordinated fashion.

A prime example of the impacts of e-FM and MFR policy was highlighted in a recent Forest Practices Board Investigation in which the Board found that MFR Policy and the need to submit spatial information for single tree salvage situations imposed onerous requirements on the licensees and the value of the collected data was questionable. See http://www.fpb.gov.bc.ca/complaints/IRC145/IRC145_ml.pdf for the complete investigation. (Note: the majority of the work done by e-FM strategic plan project team was concluded prior to this investigation report being released)

2.1. The Woodlot e-FM Team

In order to improve relations and work to address some of the above-mentioned concerns, the Woodlot e-FM Strategic Plan Project was initiated in late 2007 as a joint venture between MFR and FBCWA.

Recognizing that this project may have significant impacts to licensees and all levels of MFR, the Woodlot e-FM Team (the Team) included representatives from a variety of MFR Branches and the FBCWA.

Table 2-1: e-FM Project Team Members.

Name	Affiliation	Position
Nelson Lah, Chief Information Officer	Information Management Group	Project Sponsor
Gloria Wills, Manager	Information Management Group	Project Sponsor
Peter Wyatt, Manager	Operations Policy	Project Sponsor
Stephanie Mooney, Woodlot Licence Forester	Resource Tenures & Engineering Branch	Project Coordinator/Business Lead
Coleen MacLean-Marlow, Manager, e-FM Portfolio	Woodlot Licensee and Consultant	Federation of BC Woodlot Associations Representative
Tom Bradley, Director	Woodlot Licensee and Consultant	Federation of BC Woodlot Associations Representative
Dave Haley, Timber Tenures Forester	Resource Tenures & Engineering Branch	RTEB Representative
Jacques Bousquet, Timber Tenures Forester	Resource Tenures & Engineering Branch	Business Mapping Project Representative
Doug Stewart, A/Manager, Operations Policy	Operations Division	Operations Division Representative
Gord Wall, Tenures Supervisor	Quesnel Forest District	Operations Division Representative
Susan Prosser, A/Manager, Forest Operations Solutions	Information Management Group	ESF Custodian/IMG Representative

2.2. Project Charter Summary

The Project Charter states that the objective of this project is "to develop a strategic plan that provides and addresses short, mid and long-term recommendations for woodlot holders' submission of electronic data to the [MFR] in an efficient and cost effective manner that will improve consistency across districts and provide the greatest benefit and return for the effort to both licensees and the [MFR]". The Charter also states that the recommendations must be implemented in order for these benefits to be realized.

Project Deliverables:

1. Business process map depicting a woodlot holder's requirement to submit information electronically to the ministry throughout the lifecycle of the woodlot tenure.
2. Identification and documentation of outstanding problems and issues with woodlot licensees' submission of electronic data to MFR.
    a. Identification and documentation of suggested options and solutions, including potential technology options.
    b. A strategic plan that addresses short, mid, and long-term recommendations for woodlot licensees' electronic submission of data to the [MFR] that will provide the greatest benefit and return for the effort of both licensees and the [MFR].

3. Project Methodology

The project was approached in 4 phases.

1. Research,
2. Review and Analysis,
3. Recommendations, and
4. Strategic Plan.

3.1. Research

Information and data relating to the lifecycle of a woodlot tenure, its associated obligations, and related e-FM systems were accumulated from a series of interviews and demonstrations with relevant MFR Business Areas including:

- Revenue Branch,
- Resource Tenures & Engineering Branch (RTEB),
- Forest Practices Branch (FPB),
- Compliance and Enforcement Branch (C&E),
- Information Management Group (IMG),
- Forest Analysis and Inventory Branch (FAIB), and
- Information Land Management Bureau (ILMB) – not MFR but custodian of LRDW.

Discussions and demonstrations focused on the electronic process(es) required to submit data to the MFR. The data gathered was used to construct business process maps depicting the overall lifecycle of a woodlot, and the specific business processes a woodlot licensee must fulfill during that lifecycle. Maps were circulated to the Review Panel for review, comments, and identification of issues.

3.2. Review and Analysis

Considering review comments received from the Review Panel, the Team examined each process in detail to identify issues, inconsistencies and duplications. Business Area staff provided ongoing assistance and clarification as required.

Two previous reports on e-FM implementation and woodlots were also reviewed:

- Electronic Forest Management Strategy and Action Plan Development for Woodlot Licensees and Community Forests (March 22, 2004), and
- Woodlots and Electronic Forest Management (e-FM) User Needs Report (September 25, 2007).

Relevant information and/or recommendations from those documents were included in the development of this report.

3.3. Recommendations

Based on the outcome of the Review and Analysis Phase, recommendations were drafted, consolidated, classified by implementation timeframe, and once again circulated for review and prioritization. Recommendations were finalized, by timeframe, based on input provided by the Review Panel.

The timeframes were selected to suggest a reasonable period of time in which a particular item could feasibly be addressed, and are listed below. Classifications can be inter-related. Successful resolution of a short or medium term recommendation may lead to the implementation of a long term recommendation.

- Short term – 3 to 9 months,
- Medium term – 9 to 24 months, and
- Long term – 24 months and longer.

3.4. Strategic Plan

The interim Recommendations were presented to the MFR and FBCWA Joint Working Group at the end of June, 2008 for their endorsement. The recommendations have been finalized since that time.

These recommendations form the basis for the Strategic Plan. In order to take the Strategic plan further additional details from the application and data custodians is required, and additional funding is required to add those details to the plan.

4. Project Outcomes

With the help of the Review Panel, the Team produced the following deliverables:

- Business Process Maps,
- Inventory of e-FM concerns, and
- Project Recommendations (See Section 5).

4.1. Business Process Maps

A total of 15 business process maps (BPMs), or flowcharts, were completed. These charts are listed in Table 4.1 and are contained in the accompanying Technical Report.

Table 4-1: Inventory of Business Process Maps created as part of the Woodlot e-FM Project.

Business Process Map
1. Woodlot Overview BPM
2. Bceid & MFR Access BPM
3. FTA – Cutting Permit using eziLink BPM
4. FTA – Road Permit using eziLink BPM
5. ECAS – Interior Appraisal BPM
6. ECAS – Coast Appraisal BPM
7. RESULTS – Opening Definition, Disturbance & Forest Cover Online BPM
8. RESULTS – Opening Definition, Disturbance & Forest Cover using eziLink BPM
9. RESULTS – Silviculture Activities Online BPM
10. RESULTS – Silviculture Activities using eziLink BPM
11. RESULTS – Forest Cover (free growing, regen or other) Online BPM
12. RESULTS – Forest Cover (free growing, regen or other) using eziLink BPM
13. RESULTS – Milestone Declaration (free growing, regen or other) Online BPM
14. RESULTS – Milestone Declaration (free growing, regen or other) using eziLink BPM
15. WASTE – Online BPM

Map # 1, the Woodlot Overview BPM, maps the steps and processes involved in the management lifecycle of a woodlot licence. It also identifies the legislation, regulation, and manual or policy associated with each requirement from both a licensee and MFR perspective. BPMs #2 through #15 are presented from the perspective of a woodlot licence holder, and document all steps and possible scenarios that may be encountered in order to meet the minimum legal submission requirements.

In total, 90 separate processes are depicted on the Overview BPM, including 34 e-FM related processes. Of the 34 e-FM processes, 12 required woodlot licensee interaction. Of these 12 e-FM processes, 9 were mapped in detail. The other 3 processes, deemed less critical to woodlot licensees, were not mapped due to time constraints and included the Seed Planning and Registry System (SPAR), the Harvest Billing System (HBS), and Mapview. Of the 9 processes mapped in detail, 5 required two sets of maps in order to demonstrate differences in coastal vs. interior requirements, or to illustrate submission options (on line direct entry vs. XML/GML upload).

In creating these maps, it has become apparent that this is ***the first time*** that these business processes have been fully mapped and used to compare business and systems rules. These business process maps provide a valuable resource for the discussion and implementation of recommendations and timelines.

While specific to Woodlots and their accompanying legislation and regulations, the maps can also provide a starting point for work by other tenure/business specialists and their IMG counterparts.

4.2. Inventory of e-FM Concerns

Findings from the research and analysis phases were separated into three groups.

- Issues,
- Inconsistencies, and
- Perceived Duplication.

4.2.1. Issues

A total of 54 issues were documented. A full list of identified issues is contained in the Technical Report. The causes of the majority of the issues can be grouped into 4 themes:

1. Confusion – lack of, or conflicting, direction/guidance/definitions,
2. Data Clean Up – incorrect or missing data in system,
3. Data Entry Problem – systems do not reflect woodlot business rules thus preventing or misconstruing data entry, and
4. Non-Audience Focused Systems – lack of communication leading to misunderstanding of system requirements, systems that require industrial software tools to use, systems that are not focused on client needs, and/or systems that are technically beyond many clients.

4.2.2. Inconsistencies

Inconsistencies cause client frustration with e-FM systems. Three main sources of inconsistencies were identified:

1. The e-FM systems were designed using FSP client business rules, and are inherently inconsistent with woodlot regulatory regime and reporting requirements.
2. The legislative, regulative, and personnel changes experienced over the past 13 years.
3. The disconnects and discrepancies between and amongst MFR Business Areas, Regions and Districts.

At least 52 inconsistencies were identified covering legislation (Forest Act, FPC, FRPA), regulations (WLFMR, WLPPR), documents and definitions. A detailed list is included in the Technical Report.

4.2.3. Perceived Duplication

Apparent duplication in data entries was a key reason for the initiation of the e-FM Project. Examples of perceived duplication include:

- The requirement for spatial submissions showing Planned Net Area and Planned Gross Area in FTA and RESULTS.

- The requirement for previous stand type in RESULTS, rather than obtaining this information from inventory records.
- The requirement for a disturbance start and end date in RESULTS versus a Notice of Commencement date in CIMS versus approval and completion dates in FTA.

The project identified 16 perceived duplications, which are listed in the Technical Report.

Actual duplication is largely limited to the entry of common information: Tenure ID, CP, Block Name, etc. Many perceived duplications were found, on examination, to be different data requirements that are described using similar terminology. These duplications should be resolved by revising the terminology.

Additional work in conjunction with systems and business experts is required to identify real duplications, and to identify possible system revisions and associated costs.

5. Project Recommendations

In total, 75 recommendations were drafted to address the issues, inconsistencies, duplications, and other findings. This section discusses the general themes of the recommendations, and lists the highest priority recommendations, as ranked by the Team and the Review Panel. Details of the high priority recommendations are contained in Appendix C. The full list of recommendations is contained in the Technical Report.

5.1. Recommendation Themes

Six general themes emerged during the recommendation process:

Theme 1: Data Clean-up,
Theme 2: Audience Focused Systems,
Theme 3: Review of Data Requirements,
Theme 4: Audience-Focused Training,
Theme 5: e-FM Coordination and Integration, and
Theme 6: Policy Practices Review.

5.1.1. Theme 1: Data Clean Up

Key recommendations were made relating to completing the current data clean up projects and to verify current spatial information for cutblocks using orthophotos.

Many issues still exist with old spatial and attribute data in both FTA and RESULTS despite clean up efforts over the past few years. Examples include:

- incorrect woodlot boundaries in systems,
- new cutblocks overlapping old cutblocks that are obviously spatially incorrect,
- incomplete spatial information such as standard units and forest cover, and
- missing tabular data, such as stocking standards.

FTA feeds spatial data to RESULTS, and RESULTS feeds spatial data to VRIMS. Accurate spatial data is required for consistency, inventory and land base planning.

The legacy of missing or inaccurate information in RESULTS and FTA creates inefficiencies for MFR staff and increases costs to licensees.

5.1.2. Theme 2: Audience-Focused Systems

To date, the e-FM systems and the business rules that drive them have focussed on FSP clients. Audience-Focused Systems" (AFS) recommendations address system modifications that would assist non-FSP clients including: MFR District, Regional, and Branch staff and woodlot licensees.

Areas for potential improvement include: how access to systems is granted, development of customized data entry tools, and better communication that recognizes the range of skill level in the audience.

The AFS recommendations contain the following sub-themes:

1. Improvement to Existing Systems – For example, RESULTS should recognize the differences between FSP, WLP, and Woodlot FDP stocking standards and site plan approval dates to ensure data integrity.
2. Tenure Recognition – The systems should recognize the various types of forest tenure and associated administrative regime, and show only valid input fields for each specific tenure.
3. New Tools – Non-FSP clients identified strong needs for:
    - cost effective and client friendly XML/GML upload preparation software, and
    - simplified, woodlot specific reporting options for FTA, RESULTS, and HBS data.

5.1.3. Theme 3: Extensive Review of Data Requirements

Team and Review Panel members agreed that a review of data requirements for each system is required, suggesting that Business Areas:

1. Question the validity of each field within their respective systems. More specifically, Business Areas may need to identify why a particular piece of data is captured, what it is used for, whether or not it is a legislated requirement.
2. Review definitions from an audience perspective. Are the definitions descriptive enough or are they subject to widely different interpretations by different user groups?
3. Eliminate or change "duplicated" fields.
4. Add fields to systems that would enhance systems and reports, so that licensees and MFR staff have ready access to required information (e.g. uplifts and associated volume, green versus salvage permit, free growing exempt block versus silviculture obligations, etc).

5.1.4. Theme 4: Audience Focused Training

Effective user training is required to achieve data integrity and consistency. To be effective, training must be tailored to client groups and their specific needs.

Woodlot licensees, MFR district staff and Business Area specialists vary in technical skill levels and system output requirements. MFR staff may be well served by LearnLinc training models and tutorials, but these approaches may not address woodlot licensees adequately. Woodlot licensees are a challenging training audience, especially considering they likely interact with a system only once or twice per year. The 2008 RESULTS Training for Woodlot Licensees training modules, designed for a low tech, hands on audience met with more success than previous attempts. Budget and classroom logistics have permitted approximately 10% of woodlot licensees to receive the modified RESULTS training to date.

5.1.5. Theme 5: e-FM Coordination and Integration

The Team identified a need for on-going focus on e-FM coordination and integration with the Business Areas requiring submissions. At the broadest scale, this focus is critical to ensuring that each of the Business Areas are accurately reflected in the e-FM systems and that they work harmoniously rather than independently. The benefit would be e-FM systems that minimize submission requirements (by reducing redundancies), minimize inconsistencies and issues between systems, improve the reliability and timeliness of data submissions and e-FM systems that accurately reflect current business requirements.

Initially, the Project Team expects that one full time position is required to focus on ensuring e-FM coordination and integration is occurring within the Woodlot Business Area. A second full time position would be required to ensure coordination and integration is occurring for other tenures as well.

In the short term the intent of these positions are to:

- champion the strategic plan, and
- coordinate current business integrations of systems.

In the long term, the intent of these positions are to:

- monitor and assess the impacts of new legislation, regulations and policy on e-FM requirements,
- act as a coordinator/liaison between Business Areas/systems and clients to ensure woodlots are not inadvertently adversely impacted by business or system changes designed for FSP clients, and,
- provide a single point of contact for licensee e-FM support.

5.1.6. Theme 6: Policy Practices Review

Periodic reviewing of district practices would lead to better cross-district consistency with e-FM submissions, identify opportunities for improvement, provide hands on knowledge transfer/learning, and determine if practices are consistent with the legislative and policy framework.

5.2. Priority Short, Medium, and Long Term

During the Recommendations Phase of the project, the short, medium and long term recommendations were initially prioritized by the Team and the Review Panel. The following sections list the high priority recommendations by timeframe. Many of these recommendations will have appeared as parts of the themes discussed above. Full details of the high priority recommendations are contained in Appendix C. The full list of 75 recommendations is contained in the Technical Report. Note these recommendations have been significantly consolidated since the preliminary presentation on June 25, 2008.

5.2.1. Top 10 Short Term Recommendations

1. A cross-functional team (CF Team) should be formed to build on the work completed by the Woodlot e-FM Strategic Plan project, and to work towards implementing the recommendations that receive approval.
2. A Woodlot specific e-FM expert should be available as the first point of contact when woodlot licensees require assistance.
3. Provide additional outreach and training for licensees.
4. Identify, obtain and distribute a suitable tool to facilitate e-FM spatial and tabular data entry by licensees.
5. Develop an audience specific web portal for client access to e-FM applications and guidance material.
6. Provide e-FM training for MFR staff.
7. Finish Data Clean up projects.
8. Staff a full time position to lead the Cross Functional Team.
9. Grant view access to all e-FM applications to woodlot licensees and to district staff.
10. Change system requirements and definitions for Stocking Standards in RESULTS to match woodlot legislation and regulations.

5.2.2. Top 5 Medium Term Recommendations

1. Create two cross-program/branch full time positions for e-FM implementation.(includes position identified above in Short Term Recommendation #8).

2. Review and update base map information in each woodlot licence using orthophotos to identify apparent mapping errors.
3. Improved, client-focused reports from the RESULTS, CRS and HBS systems.
4. Develop appropriate standards for improved licensee data submission, focusing on usability of interface, data definitions, and user help facilities.
5. Reassess current WASTE methods and reporting requirements.

5.2.3. Top 3 Long Term Recommendations

1. Tenure Recognition: All e-FM systems should recognize the woodlot licence tenure and accurately reflect appropriate business rules.
2. Implement improved e-FM guidelines related to: look and feel, standardized terminology and help tools, save principles, navigation between systems, etc.
3. Develop an interactive webpage based on the overview business map that allows users to drill down to detailed BPMs and offers links to related systems and supporting information.

6. Key Learnings

Aside from the recommendations, the e-FM project has also yielded several key learnings with regard to business rules driving the system, client (MFR & Woodlot) knowledge of those systems, the importance of implementation and associated shifts in culture.

6.1. Business Drives the Systems

Business rules (Legislation, Regulation, Policy, etc) drive the data requirements of the e-FM systems. Before this project began, many of the Team and clients believed the reverse was true. This clarification will help foster acceptance of the e-FM process among clients by demonstrating that e-FM is not the source of many of the issues they face.

The time and resources invested have also provided a valuable return in the form of the first comprehensive maps of the business processes used to manage woodlot licence tenures. These graphical tools provide clear process documentation for clients, will facilitate planning of improvement to the business processes, and will assist in identifying the full impacts of proposed business process changes prior to implementation.

Business inconsistency, issues and duplications can be very expensive for both the MFR and clients. Without a provincial framework, districts may carry out business in an ad hoc manner which is time consuming, creates uncertainty and increases costs. The quality of data obtained through such processes is suspect and cannot be effectively utilized by systems or decision makers, in turn increasing frustration and cost.

6.2. Knowledge Transfer

The project found a need for knowledge improvement and knowledge transfer to MFR district staff. Through training and development, an individual's skills and knowledge are grown to enhance work performance, career advancement, and increase personal competencies. Knowledge transfer to woodlot licensees is also required, in order to facilitate their management of tenure using current government information systems.

6.2.1. Ministry of Forests Staff

E-FM knowledge and skill at the district level is variable and frequently inadequate to meet client needs. Within the next decade, the MFR can expect increased retirements, as 44% of Ministry of Forest employees will have reached age 55 by 2010. This implies a significant risk of loss of intellectual capital

and corporate memory, which will continue to exacerbate the problem of inadequate knowledge/skill at the district level. Difficulties in recruiting and retaining new staff are also expected.

MFR specific training is required for staff at both regional and district levels to:

- ensure alignment of operational business practices with the approved business processes of each system,
- improve knowledge transfer among staff, and
- contribute to a succession planning strategy.

6.2.2. Woodlot Licensees

A general lack of appropriate software tools, technology, and/or IT skills, coupled with a non-client friendly interface, have deterred licensees from utilizing and benefiting from e-FM.

Effective licensee training would:

- improve acceptance and use of e-FM,
- increase the quality of data entering systems, and
- reduce administration time and costs to Licensees and MFR.

Immediate and continued training, in a woodlot specific format, is required, with a short term goal of capturing as many licensees as possible prior to March 2009. The 2008 RESULTS Training Model for Woodlots, tested in spring 2008, while requiring some modification, was largely successful and could be used as basis for training moving forward.

6.3. The Past Revisited – Need for Implementation

Section 2 (Project Background), and Appendix B provide a chronology of past initiatives that have attempted to support woodlot licensees shift to electronic forest management. Many of these initiatives provided recommendations and strategies (some of which have been reiterated in this project) that would have alleviated some, or all, of the problems presently impacting woodlot licensees; however, woodlot licensees and district woodlot staff continue to struggle with these problems because the recommendations and strategies previously identified have never been implemented.

It has become obvious to the Team that without implementation of the recommendations provided by this project, history will repeat itself, and non-FSP clients will be no better off than they are now.

Already momentum is being gained by following through on recommendations and strategies that have been brought forth recently. Specifically: data sharing and TRIM access for non-FSP clients has been facilitated by the Chief Information Officer (CIO) Forum; and client focused training and system enhancements have been implemented by the RESULTS Working Group. In addition the Natural Resource Section Information Council of BC has tabled its own action plan that is based on the following principles: client driven, results orientated, collaborative, leadership, and continuous improvement.

It is important that the momentum that has been gained is not lost by failing to follow through with the implementation of the recommendations from this project.

6.4. Essential Culture Shifts

The final key learning identified in this project is that there are a series of culture shifts that must be fostered within, and between MFR, and woodlot licensees in order to move forward successfully.

The first of these shifts is the need to recognize the differences between tenure types (specifically woodlot tenures versus major licensee tenures and their associated legislation) at the planning stage of any business and/or system change. It is apparent that the one size fits all approach does not meet the needs of all impacted groups. It appears that some (if not all) of the issues presently facing woodlot licenses and district woodlot staff could have been mitigated had the differences between woodlot

licensees and major tenures been recognized and addressed at the outset of the e-FM planning and design.

The next required shift in culture is the recognition of the value of using business process maps when considering the impacts of any new initiative or legislative change. The business maps compiled through this project document the current processes that must be followed. Current approaches to assess change impact do not seem to consider the upstream and downstream impacts. The impact of future initiatives or changes could be assessed by quantifying the impact of the change to the current business map. This approach could also be used as a communication mechanism to display the impacts (however great or small they might be) to business and systems.

The final culture shift focuses on information sharing between all levels of MFR and licensees. Whether it is through periodic conference calls, or face to face forums such as annual general meetings, the value of sharing knowledge between client groups and business areas is incredibly valuable. Clear communication and sharing of knowledge will go tremendous lengths to ensure that all client groups are aware of what is coming, and ensure that no one group is left outside of the information loop.

Establishment of a full-time Woodlot Business/Systems coordinator would provide a cooperative and coordinated approach that would help to foster these culture shifts over the long term.

7. Conclusion

Good forest management requires good decisions. Good decisions – whether by the MFR or by the tenure holder – require good information. Good information comes from cost effectively collecting and recording consistent and accurate data. Good information can also be used in measuring and demonstrating the achievements of sustainable forest stewardship.

Currently, there are unacceptable levels of inconsistency, duplication, and other issues across business areas, systems, and districts. The Crown and the people of BC are not getting the maximum return for the effort invested by either licensees or the MFR due to:

- missing or inaccurate data within systems,
- lack of licensee access to existing systems, and
- systems that do not accurately reflect the business of the tenure.

E-FM is in place and the exchange of information in digital format is modern standard practice. A return to “paper” is not likely. However, the current e-FM system has not worked satisfactorily for woodlot licensees and MFR woodlot staff. This and previous reports have identified common themes for improving data management and e-FM including:

- the need for better coordination and consistency among systems,
- the need for clean data,
- the need for on-going training,
- the potential benefits of better information and reduced costs, and
- the need for cost effective, practical tools/methods for submitting data.

If implemented, the recommendations from this project will improve the reliability and accessibility of forestry data, resulting in better informed land use decisions and management. This project has laid the groundwork for moving forward with improvements to e-FM and working toward a more collaborative ministry – licensee relationship. The business maps have been established, the issues have been identified, and recommendations have been developed. These efforts form a basis for creating positive change in e-FM.

The key to realizing these benefits is to move forward with the preparations for implementing the recommendations with the continued support of the Joint Working Group and the Operational Leadership Team.

Appendix A

Timeline of events that had a significant impact to Woodlot Licensees.

Time Frame	Event
1995	Introduction of Forest Practices Code of BC Act (FPC) and associated regulations, including Woodlot Licence Forest Management Regulation (WLFMR)
1998 to present	Mountain Pine Beetle epidemic (severely affecting approximately 250 woodlots)
2003	Introduction of Forest and Range Practices Act (FRPA) and associated regulations, including Woodlot Licence Planning and Practices Regulation (WLPPR)
2003	MFR downsizing (loss of Staff, District and Regional offices)
2003-2005	Implementation of MFR's Electronic Forest Management (e-FM) for all aspects of data submission, approvals, appraisals and record keeping
2004-2006	Changes to log markets (i.e. introduction of Market Pricing System in 2004 on the Coast and 2006 in the Interior)
2005	Softwood Lumber Agreement and associated loss of flexibility
2006	Changes to log grading specifications
Ongoing	Changing demographics in MFR Employees and Licensees

Appendix B

Timeline of initiatives that have attempted to address Woodlot specific e-FM and Business issues.

Time Frame	Event
2003-2005	Woodlot Advisory Review Recommendation Team (WARRT) attempts to address many business and e-FM issues, raises expectations for e-FM benefits and delivers little on main program initiatives due to softwood lumber accord.
2004	FBCWA, with support from the Forest Investment Account (FIA) and Small Tenures Program, commissioned Forsite Consultants to develop strategies to assist licensees during the transition to electronic service delivery. The March 2004 final report, "Electronic Forest Management Strategy and Action Plan Development for Woodlot Licensees and Community Forests" provided an overview of the various e-FM components, summarized existing and expected e-FM challenges facing woodlots and community forests, and provided several strategy options to successfully implement the e-FM initiative. Implementation was not pursued.
2004-2005	The 2005 Streamlining/Forest Info Mall Project attempts to address many business and e-FM issues. Implementation ws started but not completed.
2007-2008	The Chief Information Officer (CIO) Forum initiated and facilitated data sharing and TRIM access for non Forest Stewardship Plan (FSP) clients with the Integrated Land Management Bureau (ILMB).
2007	MFR Business Alignment Process (BAPS) was implemented for testing. This tool provides MFR and Industry Staff the opportunity to submit and track any comments or suggestions related to encountering inconsistent business practices between MFR Regions and Districts.
2007	The RESULTS Working Group, including FBCWA representative, initiated system modifications and client specific training – positive outcomes.
2007	April 10, 2007, Chief Forester's letter to FBCWA regarding 2007 annual reporting, instructs MFR staff "to continue joint efforts to streamline the data and/or processes involved and to identify gaps".
2007	The FBCWA e-FM User Group developed a report identifying a series of needs to enable woodlot licensees to undertake electronic submissions and become compliant with e-FM.
2007	The North East BC Pilot Project was established, with the purpose to define the business needs and data requirements of the participating working groups, assess data update requirements for TRIM and VRI, develop data access and exchange procedures and tools, and to evaluate Base Mapping and Geomatic Services (BMGS), Oil and Gas Commission (OGC) services, and MFR products and services in support of resource management and business operations in northeast BC.
2007	Natural Resource Sector Information Council of BC (NRSIC) tabled its Strategy and Action Plan for Land and Resource Information for the Natural Resource Sector to the Year 2010.
2007	Progeny of WARRT (POW) was established as a subgroup of Defined Tenure Administration Project (DTAP) to map the administration of a woodlot license.
2007-2008	Establishment of Woodlot e-FM Project following discussions between IMG and FBCWA representatives regarding the ongoing difficulties faced by woodlot licensees with reporting requirements in a rapidly growing e-FM environment.

Appendix C

Definitions for acronyms and abbreviations relating to priority, term, and theme - in the tables below - are provided on the last page of this report.

Plan to Move Forward

Recom. Number	Priority	Term	Theme	Recommendation
1, 5, 42, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 62, 65, 66, 67, 95, 96, 97, 114, 115, 116, 120, 122, 124	S 1	O-S	ERDR, AFS, AFS-I, AFS-T, ERDR, DCU	A cross-functional team (CF Team) should be formed to complete the review of e-FM data requirements begun by the Woodlot e-FM Strategic Plan Project (WeSP). **Team Composition:** • Representatives of the Branches responsible for the business rules and systems that define the current scope of e-FM. • Two Woodlot Federation representatives. • Two MFR District representatives • One MFR Regional representative. Dedicated time for individuals to participate on CF Team will need to be endorsed and possibly directed/assigned by the Operations Leadership Team (OLT). **Terms of Reference and Tasks** The CF Team will: 1. Build on the work completed by the Woodlot e-FM Strategic Plan project (WeSP). Materials prepared by the WeSP project will inform and guide the deliberations of the CF team. 2. Obtain clarification regarding Chief Forester's expectations with respect to Woodlots and e-FM, especially RESULTS. 3. Assess what e-Submissions are reasonable to require from a small business operating on an area based tenure under each business area (tenures, silviculture, revenue, etc), and will validate their assessment with strong reasons. 4. Review and prioritize action on opportunities for improvement identified on the business process flowcharts prepared by WeSP. The objective is to increase clarity and utility of the e-FM system for end users. 5. Review and prioritize action on the data issues and inconsistencies list from WeSP. The objectives are to ensure that the data definitions for each e-FM data field are clear and unique, and to communicate these clear definitions to end users. 6. Review the list of perceived duplications in the e-FM system developed by WeSP. In the case of real duplication, CF Team will either a) provide a rationale as to why the information requires input into more than one location/application,

Plan to Move Forward				
Recom. Number	**Priority**	**Term**	**Theme**	**Recommendation**
	S 1 (cont.)			b) recommend the removal of the duplicate entry fields, or c) recommend that systems be modified to copy the information item from point of entry to duplicate locations. In the case of a perceived duplication, CF Team will change the data definition and/or screen label and/or field name to eliminate perception of duplication. 7. Oversee the production of comprehensive, audience focused guides to the e-FM system for Woodlot Licences and MFR. 8. Monitor the work and findings of the North East Pilot Project, which is currently examining aspects of electronic reporting of information. 9. Communicate implementation progress reports to the JWG and the Woodlot e-FM group. 10. Communicate WeSP and CF Team recommendations approved/endorsed by OLT to the broad Woodlot e-FM group. **General Principles** 1. All system and business process changes should be evaluated for feasibility and return on investment. 2. Woodlots and their distinctive legislation and regulations must be recognized and considered at the planning stages of business/system changes. 3. Planned new or modified legislation, regulations and policies should be reviewed using business process mapping to assess the impacts to Woodlots prior to enactment. 4. New e-FM functions should be added to existing systems/applications rather than creating a new systems/applications. 5. MFR Woodlot Staff and Woodlot Licensees should be directly contacted prior to implementing major changes to inform them of the changes. 6. Training and/or information sessions must be held when significant changes are made to any application. 7. Maintenance and updating of guidance material must be completed as part of the change rollout procedure. 8. Old and outdated guidance material and data on web sites should be removed, and, where appropriate, replaced by correct information. The outdated information should be archived so it is available if required, but is not mistakable for current information.

High Priority Short Term Recommendations				
Recom. Number	**Priority**	**Term**	**Theme**	**Recommendation**
17	**S 2**	S	AFS-P	Due to the many differences in e-FM requirements for Woodlots, attributable to the unique Woodlot legislation/regulations, a Woodlot specific e-FM expert should be available as the first point of contact when Woodlot Licensees require assistance.

High Priority Short Term Recommendations				
Recom. Number	**Priority**	**Term**	**Theme**	**Recommendation**
34	**S 3**	S	AFT	A series of demos, workshops, mini-training sessions should be held at the next Woodlot Federation Annual General Meeting in October 2008 covering BCeid, MFR applications registration, RESULTS, Mapview, EZlink and other software.
24, 25	**S 4**	S	AFS-T	Software tools for data capture and upload to e-FM system should be evaluated, including: 1. Purchase of a group EZlink licence, or other software, administered in a similar way to the IFS Appraisal software currently widely used by Woodlot Licensees. 2. If Option 1 is favoured, negotiating specific modifications to EZlink to reflect unique regulatory and reporting environment of Woodlots. 3. Development of a new desktop application that records required information for each opening and creates a submittable XML/GML as required. 4. Creating a Woodlot specific web portal hosted by Woodlot Federation to facilitate licensee data entry online. 5. Other alternative solution. After an option is selected, a pilot test project of the selected tool option should be undertaken.
31	**S 5**	S	AFS-T	An audience-specific and business oriented web portal should be created where Woodlot Licensees and MFR staff can efficiently access all e-FM applications, guides, flowcharts, data protocols and schemas, with links to a Woodlot specific FAQ and an ESF contact list. Hosting could be by the MFR or by the Woodlot Federation.
35	**S 6**	S	AFT	Training in specific e-FM applications should be mandatory for MFR staff, depending on job description/responsibilities.
45, 46, 47	**S 7**	S	DCU	In order to avoid RESULTS submission issues faced in spring 2008, MFR obligations to input previous years' annual report data must be met. Data types entered must include i) spatial data for opening definition, ii) stocking standards, and iii) forest cover. First priority should be on spatial data, as District Staff or Licensees can update attribute info online, if necessary This necessary activity may require full time auxiliaries in larger Districts.
64	**S 8**	S	FTP	At least one full time temporary assignment or auxiliary position is required to lead the CF Team in the implementation of the WeSP strategic plan and recommendations. Tasks will include: • planning and conducting meetings, • developing implementation schemes, • monitoring progress, • developing communication strategies, and • tracking and reporting on progress.

High Priority Short Term Recommendations				
Recom. Number	**Priority**	**Term**	**Theme**	**Recommendation**
19	**S 9**	S	AFS-R	At a minimum, grant information view and report generation access to all relevant e-FM applications to Woodlot Licensees and to District Staff based on their position. Granting "change" level access preferred wherever possible.
63	**S 10**	S	ERDR	System requirements and definitions for Stocking Standards need to be adjusted to match Woodlot Legislation and regulations. Woodlots operate under either a FDP or a WLP, not an FSP. Woodlots have operated under site plans that differ from FSP site plans since 1998. Woodlots under an FDP are still required to submit a paper SP for approval; those under a WLP submit only a pre-harvest map. Both are required to report stocking standards to RESULTS.

High Priority Medium Term Recommendations				
Recom. Number	**Priority**	**Term**	**Theme**	**Recommendation**
100, 101, 125	**M 1**	M	FTP	Create two cross-program/branch full time positions for e-FM implementation (1 for Woodlots and 1 for others). These positions should be derived from current short term positions. Function of staff in positions is to: • keep fully informed of the strategic direction of e-FM and of planned and current modifications to systems, • serve as liaisons between programs and systems in order to improve coordination and consistency of e-FM implementation, • take lead role in streamlining of e-FM, • monitor proposed business rule changes and provide feedback on potential consequences, • take lead role in training and communication on e-FM to licensees and MFR staff, and • maintain and update content of flowcharts, web links, portals and form specific guides as required. The woodlot staff person should also serve as a direct contact to licensees as they will be familiar with unique woodlot regulations and e-FM requirements. These positions need to be considered essential liaison positions that are always filled to ensure coordination among business areas/systems – especially changes or new systems.

High Priority Medium Term Recommendations				
Recom. Number	**Priority**	**Term**	**Theme**	**Recommendation**
89, 93, 94	**M 2**	M	DCU	Review and update base map information (lakes, streams, roads, etc) in each Woodlot Licence using orthophotos or other suitable data sources to identify apparent mapping errors (eg. woodlot boundaries, blocks, openings, NAD shifts, etc). Work in co-operation with affected Licensees to resolve noted differences. The FTA data cleanup could provide initial information on the accuracy of base map information, and on the likely scope of this data cleanup project.
16, 81	**M 3**	S-M	AFS-I	Improved reporting to facilitate access to information held in RESULTS by target audience is required. Examples include but are not limited to: • for Licensees: simple summary report of all blocks' data (similar to milestone report) • for Woodlot Foresters: report showing which Woodlots have reported activity in a designated year. Similar recommendations were made regarding the CRS system (#69) and the HBS cut control statements (#79, #78, #11).
60, 73, 74	**M 4**	S-M	AFS-I, ERDR	Following the review work of the CF Team: 1. Revise current standards or develop appropriate standards for licensee submission, focusing on usability of interface, data definitions, and user help facilities. This exercise must maintain a strong focus on the abilities of the clients, who are Woodlot Licensees and MFR District and Regional staff. 2. Review e-FM tutorials, technical specifications, help files, data dictionaries, and user manuals for consistency in terminology and accuracy.
99	**M 5**	M	ERDR	Waste reporting for woodlots should be reviewed and adjusted. Possible options include: 1. Eliminate annual plan for waste on Woodlots. The system could recognize the Woodlot, provide a reporting unit number for each block, and then move to the ocular estimate screen. 2. Examine option of eliminating waste reporting on Woodlots due to significant cost of surveys versus dollar return to Crown. 3. If concerns over potential loss of revenue prevent Option 2, examine option of having a licensed scaler do a waste audit and then enter waste volumes into HBS for billing. This would require turning on HBS block level. 4. Set a waste percentage or volume per hectare to be billed to all licensees following harvest in lieu of survey and filing process.

High Priority Long Term Recommendations				
Recom. Number	**Priority**	**Term**	**Theme**	**Recommendation**
108	**L 1**	S-L	AFS-R, AFS-I	All e-FM systems should recognize the Woodlot Licence tenure and accurately reflect appropriate business rules. The e-FM system must distinguish between FSP administration and WLP administration.
103, 104, 105	**L 2**	M	AFS-I	General guidelines for e-FM interface design: 1. All MFR e-FM applications should be standardized to have the same look and feel, use the same terminology, provide help in the same way, use similar data entry and save principles, etc. 2. Easier movement between individual e-FM applications should be developed. Each application should contain tabs that move the user to any of the other e-FM applications. 3. Field descriptions and data example pop-ups should be created that appear when the user hovers over a particular field.
109	**L 3**	L	AFS-T	The overview business map flowchart should be converted to a web interface tool where a click on any process loads process information and/or a process flowchart in the browser.

Definitions for acronyms and abbreviations relating to priority, term, and theme - in the Appendix C tables above.

Priority: S = Short, M = Medium, L = Long, 1 = top priority, 2 = next priority, etc

Term: O = Ongoing, S = Short Term, M = Medium Term, L = Long Term, more than one letter = applies across terms

Theme: AFS = Audience-Focused Systems (I = improvement to existing; P = personal contact; R = recognition of tenure/other fields; T = tools),
DCU = Data Clean Up
ERDR = Extensive Review of Data Requirements
AFT = Audience-Focused Training
FTP = Full-Time Position
PPA = Policy Practices Audit

Recom. Number: Recommendation number is the number assigned to each of the original 127 recommendations that were then consolidated down to the current 75 (see Technical Report for complete listing). These recommendation numbers are to enable cross referencing with that original list that was circulated to the Review Panel for prioritization.