

Final Report of the Independent Audit of Forest Management on the Timiskaming Forest for the Period 2009/10 to 2015/16



Craig Howard, RPF
Brian Callaghan, RPF, EP (EMSLA)
Phil Shantz M.E.S, R.P.P.
Mark Leschishin, RPF
Tom Clark, MSc.

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Table of Contents

Table of Contents.....	3
1.0 Executive Summary.....	4
2.0 Table of Recommendations and Best Practices	6
3.0 Introduction.....	8
4.0 Audit Findings	11
Appendix 1 – Recommendations	37
Appendix 2 – Management Objectives Table.....	52
Appendix 3 – Compliance with Contractual Obligations	57
Appendix 4 – Audit Process	61
Appendix 5 – List of Acronyms.....	66
Appendix 6 – Audit Team Members and Qualifications.....	67
Appendix 7 - Trend Analysis	68

1.0 Executive Summary

A team of five auditors carried out an independent audit of forest management on the Timiskaming Forest covering the period from April 1, 2009 to March 31, 2016.

The Timiskaming Forest has been managed through this period by Timiskaming Forest Alliance Inc. (TFAI) under the auspices of a Sustainable Forest License (SFL) #542247 issued by the Minister of Natural Resources and Forestry. Forest operations have been conducted as prescribed in a 20-year forest management plan (commencing April 1, 2006 and updated as of April 1, 2011). These plans were authored by the Company and approved by the Ontario Ministry of Natural Resources and Forestry (MNRF) and were the product of planning processes conducted jointly by the Company and MNRF personnel. As such, an independent forest audit assesses the management and administration of the Timiskaming Forest through an examination of TFAI's compliance with the terms and conditions of their SFL agreement as well as MNRF's performance in meeting its mandate and obligations on the Forest. The audit included an extensive review of the plans and records of forest management activities, along with field verification visits to areas where a variety of forest management activities occurred during the audit period. Public input was solicited through a public mailing, newspaper advertising, and mail-in surveys as well as with meetings and interviews with local stakeholders and Aboriginal communities.

This audit report identifies ten recommendations aimed at improving the management and administration of the Timiskaming Forest and are summarized as follows:

Seven recommendations targeted Company or MNRF district responsibilities and the other three were directed to MNRF corporately.

The MNRF is not effectively documenting benefits derived by Aboriginal communities from forest management. (Recommendation 1)

The forest management plan (FMP) amendment process is inefficient resulting in significant delays in approval for minor adjustments in operations. (Recommendation 2)

The auditors observed a higher than expected number of culverts (5 of 28) that were perched. In most cases, this formed an effective barrier to fish passage. A recommendation has been issued for the TFAI to improve installation practices. (Recommendation 4)

The inaccuracy of the FRI is a significant issue, as it provides the base data that supports virtually all forest planning assumptions. A new inventory is expected in time for the next FMP planning cycle.

It is notable that field observations by the audit team showed a generally excellent forest renewal program, however the Company has been tracking a relatively low rate of silvicultural success in its forest renewal program. The analysis to determine the silviculture success does not confirm the field observations. There appears to be a number of contributing factors to this issue and the auditors have recommended that the Company complete an analysis. (Recommendations 8 and 10)

The compliance program is aggressive and shows a 99% compliance rate, however there are aspects that require improvement. The auditors identified three recommendations in this area. There were 18 outstanding operational issues at the time of the audit which need to be addressed. Compliance staff need training on applicable software. As well, Timmins District must increase the number of compliance inspections on the Forest. (Recommendations 5, 6 and 7).

Three recommendations were tied to Corporate and/or Regional MNRF as follows:

The species at risk identification process is inefficient. A reduction in the time required between species at risk identification in the field and recording on GIS layers for planning purposes needs improvement. (Recommendation 3)

The MNRF has had a high staff turnover rate through the audit period and additional compliance training needs to be provided by Corporate MNRF. (Recommendation 7)

Table AR-10 in the FMP is has not been completed correctly, likely attributable to the somewhat ambiguous instructions in the 2009 FMPM. Clear instructions are required for proper completion of this table. (Recommendation 9)

The Timiskaming Forest is well-managed and this relatively short list of findings should not negate an overall positive conclusion to the audit. Technical aspects of forest management are completed in a satisfactory manner. Communication between the various stakeholders on the Forest is very strong and relations are professional, positive, and progressive. Timiskaming Forest Alliance Inc. is satisfactorily meeting the terms and conditions of the SFL. The MNRF is also meeting its overall responsibilities associated with its role in managing this Forest.

The audit team confirms that, based on the evidence reviewed, management of the Timiskaming Forest was in compliance with the legislation, policy, and regulations that were in effect during the 2009-2016 audit term. The Timiskaming Forest is being managed sustainably. The audit team has recommended that the term of SFL #542247 be extended for an additional five years.

2.0 Table of Recommendations and Best Practices

Conclusion and Recommendation on License Extension
<p>The audit team concludes that management of the Timiskaming Forest was generally in compliance with the legislation, regulations and policies that were in effect during the term covered by the audit, and the Timiskaming Forest was managed in compliance with the terms and conditions of the Sustainable Forest License held by Timiskaming Forest Alliance Inc. Forest sustainability is being achieved, as assessed through the Independent Forest Audit Process and Protocol. The audit team recommends the Minister extend the term of Sustainable Forest License #542247 for a further five years.</p>
Recommendations Directed to the SFL Holder/MNRF District
<p>Recommendation 1: At an individual Aboriginal community level, the MNRF, together with the forest industry and local Aboriginal communities, must consider an approach to tracking economic involvement in the Forest over time.</p>
<p>Recommendation 2: The MNRF districts must examine their amendment and revision processing to determine ways to speed approvals and improve consistency between districts.</p>
<p>Recommendation 4: The Company in cooperation with MNRF district staff must review culvert installation procedures with operators to help the operators adapt to the wide range of conditions that could be encountered on the Timiskaming Forest prior to, during, and post installation.</p>
<p>Recommendation 5: The MNRF shall increase the level of compliance monitoring on the Timmins District portion of the Forest so that it applies a consistent and appropriate level of compliance monitoring on all parts of the Timiskaming Forest.</p>
<p>Recommendation 6: Kirkland Lake and Timmins Districts of the MNRF shall address the 18 outstanding operational compliance issues on the Timiskaming Forest as expeditiously as possible and develop a process to deal with future operational issues in a timely manner.</p>
<p>Recommendation 8: Timiskaming Forest Alliance Inc. shall undertake an analysis to determine the factors that may be affecting its reported silvicultural success rates and develop strategies that will yield silvicultural success rates that more closely reflect its field results on a schedule that will coincide with the submission of the 2016-17 annual report.</p>
<p>Recommendation 10: Timiskaming Forest Alliance Inc. shall take the necessary measures to address the remaining Class Y and Z lands it is obligated to treat and report upon these areas as stipulated under its SFL agreement prior to the next independent forest audit scheduled for the Timiskaming Forest.</p>

Recommendations Directed to Corporate or Regional MNRF
Recommendation 3: Corporate MNRF shall review the species at risk observation data submission process to ensure that the information is promptly updated in the Land Information Ontario database that is used for planning.
Recommendation 7: Considering the high staff turnover rate resulting from its transformation process, Corporate MNRF shall provide training to staff involved with compliance monitoring on the proper use of its Forest Operations Inspection Program (FOIP) software application.
Recommendation 9: Corporate MNRF and Regional staff shall develop a clear set of instructions, supplementary to the 2009 Forest Management Planning Manual, that explains to plan authors how to properly complete Table AR-10 (Summary of Harvest and Regeneration Trends). These instructions should be developed in time to enable Timiskaming Forest Alliance Inc. to complete an accurate version of the table to be included in its Year 7 Annual Report due in 2018.

3.0 Introduction

3.1 Audit Process

An independent forest audit of the Timiskaming Forest was undertaken in September, 2016. The objective of the audit was to assess the performance of forest management activities conducted during the seven years from April 1, 2009 to March 31, 2016 as measured against the plans, guidelines, regulations, and legislation in force during that period. The audit was conducted in compliance with the *Crown Forest Sustainability Act* (CFSA) (Statutes of Ontario 1994) and fulfills the requirements of the *Class Environmental Assessment Approval for Forest Management on Crown Lands in Ontario* (Ontario Ministry of Environment and Energy 2003). The audit assessed the effectiveness of forest management activities in achieving the management objectives for the Forest. The audit examined the compliance of Timiskaming Forest Alliance Inc. (TFAI or the Company) with the terms and conditions of its sustainable forest license (SFL) (# 542247) for the Timiskaming Forest. The audit also reviewed the performance of Ontario Ministry of Natural Resources and Forestry (MNRF) in meeting its mandate and obligations on the Forest and overlapping licensees working on the Forest.

The audit was conducted in accordance with the Independent Forest Audit Process and Protocol (MNRF 2016) by a team of five independent auditors, consisting of three registered professional foresters (RPF), a biologist/ecologist, and a socio-economist. A list of their qualifications is presented in Appendix 6.

The auditors collected evidence through document review, interviews with staff and stakeholders, Aboriginal communities and physical inspection of field activities that occurred on the Forest between April 1, 2009 and March 31, 2016. Field site visit locations were selected to evaluate harvest, renewal, tending/maintenance, free-to-grow (FTG) operations, areas of concern (AOC), road construction and maintenance, site preparation, water crossings, wildlife management activities, and other areas of special interest. Additional detail on the audit process and sampling are provided in Appendix 4.

This report summarizes the findings of the audit and presents recommendations that are intended to improve performance by both the Company and MNRF in meeting management obligations on the Forest.

3.2 Management Unit Description

The Timiskaming Forest is in northeastern Ontario (Figure 1), abutting the Quebec border. The larger communities contained within the forest include Kirkland Lake, Elk Lake, Matheson, Gogama, and Englehart. The SFL forming the Timiskaming Forest became effective on April 1, 1998. The Forest lies primarily in the Kirkland Lake and Timmins administrative districts of the MNRF, however small portions are also in the Sudbury and Cochrane districts. The Kirkland Lake District is the lead for

administration of Crown forest management activities. The forest encompasses approximately 15,400 km², of which approximately 12,500 km² is Crown managed forest (Table 1).

Figure 1. Location of the Timiskaming Forest.

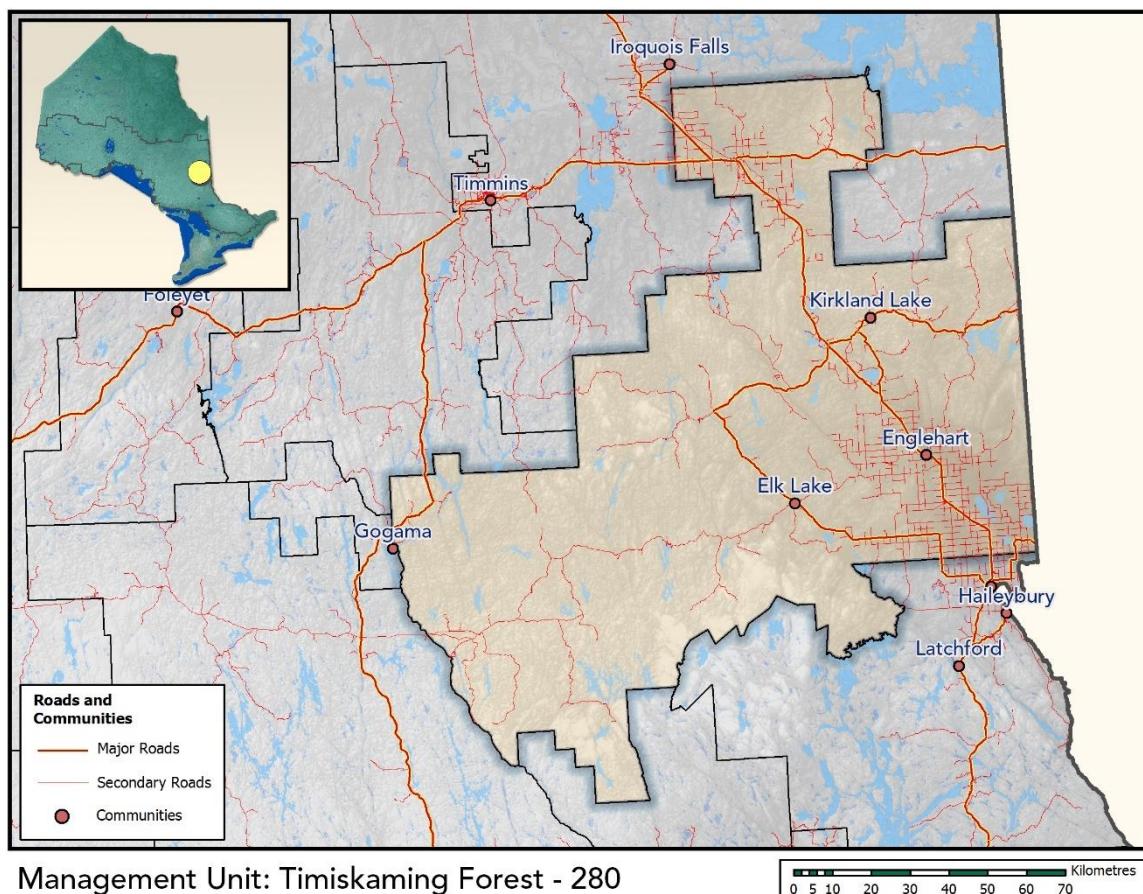


Table 1. Area description of the Timiskaming Forest (km²). (Source 2011 FMP, Table FMP-1)

Land Class	All Land	Crown Managed
Water	91,397	88,999
Non-forested Land	8,074	7,860
Non-productive Forest	144,305	132,209
Productive Forest	1,010,416	959,728
Total	1,538,832	1,188,798

The Timiskaming Forest has been managed by TFAI under the auspices of SFL #542247 since 1998. Timiskaming Forest Alliance Inc. is a true forest industry consortium, with

shareholders ranging from small independent logging operators to large forest products producers. The Company conducts the everyday affairs of the SFL on behalf of the shareholders.

There are several First Nations and Aboriginal communities that have an interest in the Timiskaming Forest. These have been outlined in section 4.2 of this report.

The Timiskaming Forest is predominantly boreal in nature, and is dominated by typical boreal tree species such as trembling aspen, jack pine, white birch, and black spruce. The remainder of the Forest is in the Great Lakes-St. Lawrence forest region and the transitional zone between it and the boreal forest region. The most notable species there are red and white pine; some tolerant hardwoods, such as sugar maple, red maple, and yellow birch also occur. The forest is relatively young, with most of the area encompassed by forest younger than 90 years old. This is not only a function of the normal disturbance regimes of boreal forests, but specifically reflects the effects of three large fires which occurred in 1916, 1922, and 1941 and burned more than 730,000 ha.

The Forest is unusual in northeastern Ontario, as it sits in the “little claybelt”. There are more agricultural lands interspersed with Crown lands than is normal elsewhere. Summer access is good.

The Timiskaming Forest provides a wide variety of recreational opportunities and is well accessed. The Forest provides habitat for all the typical boreal and Great Lakes-St. Lawrence forest wildlife species, including bear, deer, lynx, marten, and a wide variety of songbirds.

3.3 Current Issues

Issues were initially identified at the audit proposal stage, based on a review of the last independent forest audit report, forest management plan (FMP), annual reports, Forest Stewardship Council (FSC®) reports, and interviews with the lead MNRF District and the SFL holder. Issues were reviewed and updated at the pre-audit meeting following direct input from MNRF and SFL staff.

The 2009 independent forest audit identified six recommendations directed at district MNRF or the Company. None were viewed as a challenge to the auditors’ conclusion that the Forest was sustainably managed.

The forest is certified to the FSC® and Sustainable Forestry Initiative (SFI®) standards. The 2015 FSC® audit identified four major non-conformances. None of them were pertinent to the scope of this independent forest audit.

The Company has managed a consistent harvest effort over the past seven years, which reflects a relatively high number of receiving mills. This amounted to an average rate of 67% of planned levels, which is better than most forests on Ontario in the past five years.

The Company has been consistent in completing its regeneration assessments. The regeneration success rate has averaged 80% of surveyed areas, which is a level of some concern, and the silvicultural success rate is just under 60%. Neither of these levels are outstanding.

Pre-audit interviews indicated the working relationship between the SFL and the MNRF Districts was at times challenging. There are scheduled meetings between the SFL and lead MNRF District every quarter and the Company staff indicate the relationship is improving.

There have been an unusually high number of amendments and revisions to the current plan.

The auditors conducted a pre-audit assessment of compliance effort as an early indicator of operational oversight. The compliance program is aggressive. There have been 1,275 compliance inspections reports completed between 2008 and 2014, and 99% of these showed compliance.

Development of relations with First Nations is a continuing process on the Forest.

The forest resource inventory (FRI) is old and poorly supports management decisions. A new FRI is expected in time to be used during preparation of the 2021 FMP.

3.4 Summary of Consultation and Input to Audit

The auditors placed advertisements inviting comment in three local daily newspapers. Members of the Local Citizens' Advisory Committee (LCC) were interviewed and auditors attended a meeting of the LCC. Members from each of the First Nations and Métis communities with an expressed interest in the Timiskaming Forest were directly contacted by the audit team, although not all responded. A more detailed summary can be found in Appendix 4.

4.0 Audit Findings

4.1 Commitment

According to the guidance provided by MNRF, the commitment principle is deemed to have been met since the Timiskaming Forest is certified under the FSC® and SFI®

certification standards. The audit confirmed that both organizations have clear policies that identify a commitment to the sustainable management of the Timiskaming Forest. These documents are available for view by employees, stakeholders, and interested members of the public.

4.2 Public Consultation and Aboriginal Involvement

The Kirkland Lake LCC and the Gogama LCC (until it was dissolved in 2014) were both involved in the Timiskaming Forest during the audit period. The Gogama area LCC had some interest in the former Shining Tree component of the Forest and also had a representative that sat on the planning team. Throughout the audit period, the Kirkland Lake LCC was the lead LCC for the Forest. Information about this LCC was gleaned through a review of its Terms of Reference, LCC meeting minutes, and interviews with nine members. The LCC has been running for almost two decades and the membership of the LCC is regularly reviewed, including prior to Phase II planning. The LCC includes some long-standing members as well as some individuals that have joined more recently. The LCC includes a diverse mix of individuals with representation from: the forest industry, First Nations, municipalities, general public, tourism, trapping, snowmobile clubs, etc. The only obvious gap is the lack of a representative from the mining sector but MNRF has made efforts to address this deficiency.

The Terms of Reference for the Kirkland Lake LCC exists and was most recently updated in March 2016. The Terms of Reference provided a good and accurate summary of the LCC's activities and the committee members interviewed indicated that it accurately describes the committee's activities. The purposes and responsibilities of the LCC are laid out in the Terms of Reference and they are consistent with the Forest Management Planning Manual (FMPM). Procedural matters and a discussion on issue resolution are also included. The Terms of Reference were very clear, specific and effective and one of the best the auditors have seen.

This is an active LCC with strong involvement from many members, particularly the Chair. Two members of the LCC participated in the field portion of the independent forest audit. The LCC was highly involved in both Phases I and II of the FMP. Committee members clearly feel free to speak their mind about issues and overall think their input and suggestions are strongly considered by the MNRF and the licence holder. There is a diversity of opinion within the LCC on different issues but that diversity does not appear to impede decision-making, which suggests all parties are taking an open-minded approach.

The audit team found the LCC members to be highly informed with a high degree of interest in the Forest. The LCC appears to be effective and adequately resourced by the MNRF. MNRF also takes excellent minutes. Overall, this appears to be a highly effective LCC.

Consultation for both phases of the FMP and the planning team appeared to make significant efforts to address public concerns during the planning process. Formal issue resolution requests were made by a number of parties but two progressed all the way to Individual Environmental Assessment requests. These two different groups with specific concerns focused on a couple of areas of the Forest. Both issue resolution requests went to the District Manager and eventually the Regional Director. Efforts were made to resolve the issues. One of the issues in particular was complex in that it occurred in an area of the Forest with access issues from another adjacent Forest. Both groups also requested Individual Environmental Assessments which were not granted by the Ministry of the Environment. However, a couple of conditions were put in place associated with the one group. Overall, significant effort was made to resolve the issues and proper procedures were followed.

A large number of First Nations and Aboriginal communities have an interest in the Timiskaming Forest. The First Nation communities with a long history of involvement and with traditional territory over much of the Timiskaming Forest include: Matachewan, Wahgoshig, Mattagami and Temagami. There are also three First Nations in the Sudbury area: Sagamok, Atikameksheng Anishnawbek (also known as Whitefish Lake) and Wahnapiatae that have traditional territory that overlaps the extreme southern end of the Forest and have been included on the Aboriginal Involvement list since the beginning of planning for the 2011 FMP. Beaverhouse Aboriginal community is a community of Aboriginal people based in Kirkland Lake with traditional and modern day pursuits in the Forest. While not recognized as a First Nation by the federal government, they have participated in a similar fashion to First Nations. Timiskaming First Nation has a federal reserve in Quebec but with members in Ontario and with an expressed traditional territory that comes into Ontario. The Teme-Augama Anishinabae were formerly non-status individuals associated with Temagami First Nation. In addition, the Métis Nation of Ontario has three community councils based in Timmins, Timiskaming and Cochrane.

Matachewan First Nation is centred in the north-central part of the Timiskaming Forest east of Matachewan and has a long history of involvement in forest management activities. Matachewan has particular interest in forest management activities near their Reserve. A request for an Individual Environmental Assessment was made by the Chief for the Phase I FMP in 2010 but was rescinded by the community. During the latter part of the audit period (around 2014), an arrangement had been made that was to Matachewan's satisfaction and lead to the resumption of harvesting in the townships near the community. The short nature of the audit report does not do justice to the long history of involvement by Matachewan First Nation members, MNR staff, the TFAI, and the forest industry to work through issues and arrive at a solution. More recently, Matachewan First Nation has embarked on a more localized area basis of planning with its own community members (Customized Consultation Process). This process appears to be making good progress in apprising members of key local concerns such as access.

Temagami First Nation is located south of the Timiskaming Forest but has traditional territory over much of the Forest. Temagami First Nation does participate in forest management planning but have indicated that a lack of capacity prevents them from greater involvement. Temagami First Nation also raised a concern about how much benefit was really accruing to their community. Mattagami First Nation has traditional territory in the western part of the Forest in the former Shining Tree area. They have participated actively in forest management planning and in values identification and protection. Wahgoshig First Nation is satisfied with values protection and consultation but expressed concerns about the limited economic opportunities on the Forest. The audit team is of the opinion that all the First Nations and Aboriginal communities have been provided sufficient opportunity to be involved in FMP preparation and to be engaged in consultation.

The three First Nation communities in the Sudbury area, Sagamok, Atikameksheng Anishnawbek (also known as Whitefish Lake), and Wahnapiatae, have been invited to be involved in forest management planning for the Timiskaming Forest since preparation for the 2011 FMP. All three of these communities have identified traditional territory up to the height of land and, therefore, have an interest in the Timiskaming Forest. While each chose to limit their participation in the FMP process, all three indicated to the auditor that they retain interests in the Forest and hope to participate more in the future. During interviews, interest was expressed in a future values collection exercise specific to the Timiskaming Forest.

Beaverhouse Aboriginal community expressed that it has a very good relationship with both MNRF and the TFAI. Clearly, efforts have been made to work with the Beaverhouse Aboriginal community's interests and concerns.

While based in Quebec, Timiskaming First Nation has an office in Timiskaming Shores with many members living on the Ontario side of the border. Timiskaming First Nation expressed that their traditional territory stretches into the eastern portion of the Timiskaming Forest. They have a growing interest in non-timber forest products and have been working towards equal participation in Ontario. Timiskaming First Nation indicated that they have a positive relationship with TFAI and MNRF. It was not clear if they have identified any values to be protected in the Forest but this may be an issue of cooperation with MNRF in the future. Along with some other First Nations, Timiskaming First Nation has concerns with aerial herbicide spraying.

The Métis Nation of Ontario (MNO) has three community councils in the Region that have not generally participated in forest management. The MNO indicated to the auditor that the lack of participation has been attributable to a lack of capacity. The MNO has recently hired a forestry coordinator with technical knowledge and expertise in forest management. In the future, MNRF should work more closely with the MNO to identify possible ways of involving the MNO.

The audit team is of the opinion that all the First Nations and Aboriginal communities have been provided sufficient opportunity to be involved in FMP preparation and to be engaged in consultation. The MNRF Resource Liaison Office has done an excellent job of involving the First Nations in a way that works for each of them. It is very difficult to generalize about the interests, issues, and concerns of all the various First Nation and Aboriginal communities and, therefore, it is important to discuss them individually or in smaller subsets.

Overall, the auditor is of the opinion that all identified Aboriginal values receive a high degree of protection and that during the FMP processes there has been excellent efforts to involve First Nations.

Aboriginal peoples have been provided with some economic opportunities and benefits through various forest management activities on the Timiskaming Forest. While the interests of First Nations in economic opportunities on the Timiskaming Forest vary, there is some interest in continuing to pursue more equal participation in the benefits of forest management. These opportunities are going to vary from community to community and need to be based on community interests but the TFAI and MNRF are encouraged to continue to work with First Nation communities that express an interest in economic opportunities through forest management activities. These may vary from harvesting to silviculture, to fuelwood, to non-timber forest products. However, there is evidence that some efforts are being made.

The auditors also find it concerning that twenty years after the Forest Management Class Environmental Assessment Decision, a more thorough documentation of benefits accruing to Aboriginal Peoples from forest management is not available. The issue is relevant because it has come up in consultations and review of correspondence and materials during the audit period. One of the challenges appears to be MNRF's lack of information collection on what the industry is doing with respect to First Nations. In other parts of the province, some forest products companies have gone out of their way to document the economic opportunities they are creating with First Nations. In an era where resource industries work in close partnership with First Nations on economic opportunities, it is unacceptable that more detailed information cannot be provided and monitored. It is the audit team's experience that First Nations often question this situation and identify this shortcoming. This audit team has previously discussed this issue in earlier audit reports for other forests and has recommended that MNRF look at improving Condition #56 Reports (formerly known as Condition #34 and previously Condition #77 Reports). The MNRF and the forest industry should look at better ways of documenting and monitoring Aboriginal benefits in forest management planning.

(Recommendation 1)

4.3 Forest Management Planning

The audit reviewed the process and content requirements for both the Phase I and Phase II portions of the 2011- 2021 FMP for the Timiskaming Forest. The development of both plans was undertaken by a competent planning team in support of the SFL plan author. After examining the planning team minutes and interviewing several planning team members, the audit team concludes that the plan was developed effectively and efficiently. Both plans were approved on time after a rigorous government and public review.

The Phase I and Phase II FMPs for the Timiskaming Forest were approved by the Regional Director of the MNRF Northeast Region. Consistent with the CFSA, all planning requirements have been met and the approved plan is legally deemed sustainable.

The 2011 FMP was amended 94 times during Phase I. In that time there were five minor amendments and 89 administrative amendments (three others were submitted and withdrawn). The amendments include many different types, including 34 which were for operational road boundaries, 15 for aggregate extraction, and 12 to incorporate contingency areas.

The 2011 FMP was developed using a 25-year-old FRI which was a compilation of the inventories for the four Crown Management Units which preceded the Timiskaming Forest. The planning team, the SFL holder and MNRF accepted this out of date inventory and acknowledged its limitations. The development of the 2011 plan occurred during the 2008-2009 recession, which was a historic downturn in Ontario's industry. At the time, the districts removed the flexibility related to operational road boundary planning by limiting its size. There was also the introduction of aggregate extraction areas. Both of these were strictly applied on the unit with very little flexibility, which was the most significant factor contributing to the number of amendments given the vintage of the FRI.

The time to process administrative amendments and annual work schedule (AWS) revisions has been unacceptably inconsistent. On average, administrative amendments take 40 days to process while revisions take 39 days on average. Individual administrative amendments have taken 268 days to process and there were 17 which took more than 60 days. Administrative amendments and AWS revisions are generally inconsequential changes to the plan and its documentation. Processing these should be simple. When these types of changes were examined, it was evident that the Kirkland Lake District handles them much more expeditiously than does the Timmins District. The auditors have recommended that the districts critically examine their amendment review process to determine ways to improve efficiencies. **(Recommendation 2)**

The auditors reviewed how the FMP addresses protection measures for species at risk. The MNRF actively surveys for species at risk in the Forest and the Company is made

aware of the species at risk element occurrences. There are element occurrences of species such as Blanding's Turtle ((threatened) and whip-poor-will (threatened). Although both species do occur, they are very uncommon. Caribou do not occur in the Forest, although there is some identified habitat in the far north on the unit. No animals have been sighted in recent times. Interaction of species at risk with forestry operations has been minimal and thus, TFAI is in the fortunate position of having had little impact to their operations.

For the Phase II plan, the original strategic planning in Phase I for selected species and locally featured species was audited previously. There were no significant changes to these species that would require a new analysis.

The FMPM requires that the values maps for planning are able to track the sources of information, methodologies for collection, and identification of incomplete information. Auditors interviewed staff from both the Company and MNRF to discuss the administration of values information. Both organizations efficiently handled large amounts of information for a range of values. There were no comments from the public regarding missing information.

The Company commented that for AWS preparation it would be useful for MNRF to provide a map layer that presents "change data". The MNRF annually supplies all of the values data layers but without changes highlighted. This requires the Company to process a large amount of information to see what has changed and must be updated for AWS preparation or other planning activities. This "forensic" approach is inefficient and has been reported from other SFLs in Ontario. There are pros and cons to providing this change information which cannot be fully described here. The audit team reviewed the Independent Forest Audit Process and Protocol to see if this issue is within the audit scope. The focus of Criterion 5.2 "Document and Record Quality Control" is on identification, preparation, distribution, collection and maintenance of information transfers. It does not address efficiency. As such, the audit team is suggesting that corporate MNRF consider providing, along with the annual GIS values update, a corresponding "change layer" which reports only the values which have been added or removed since the time of the previous update.

Both the Company and MNRF identified concerns about the delay in verification of species at risk element occurrences by the Natural Heritage Information Centre (NHIC) of the Provincial Services Division, Science and Research Branch, MNRF. Application of AOC prescriptions for AWS preparation requires confirmation of values. Species at risk information verification ensures element occurrence errors do not enter the system. In some cases the delays were more than a year. The source of this delay was not clear to either party, or the audit team. A recommendation is made to Corporate MNRF to review this process. **(Recommendation 3)**

The planning team provided a series of values maps that were updated for the open houses for each stage of FMP production.

Operational prescriptions for AOCs are based primarily on the MNRF Stand and Site Guide (2010) information, although there are some negotiated requirements for specific local values such as tourism. From the supplementary documentation, there were no objections to any operational prescriptions for any AOCs. There were no exceptions to the forest management guides identified during the development of AOCs. The auditors found that the planning team was diligent in the application of the guidance provided. The biologists conducted the required surveys prior to planning.

There are 68 AOC prescriptions (Table 1, Phase II FMP) of which ten were new prescriptions and seven were updates from Phase I. Of the new or changed prescriptions, seven were for biological values and ten were tourism related.

Significant biological values changes included bat hibernacula and buffers around water. For bat hibernacula, the biologists noted that there was a massive die off of bats locally from White-nose Syndrome, to the point that bats were seen dying in local communities. It is a fungal disease that has killed millions of bats in North America. The AOC prescription will do nothing to address this disease but provides additional protection from habitat disturbance as a precautionary measure.

The changes around water were significant and consistent with the science-based MNRF policy direction in the Stand and Site Guide. The direction to increase disturbance (and therefore increase the health and vigor of the riparian forest zone) is potentially the most controversial because the public are sensitive to operations around water, particularly when it also provides more opportunity for recovering wood fibre. The planning team applied the prescription appropriately and the LCC and public seemed to accept the approach.

The planning of operational requirements for AOCs between the Company and MNRF staff was effective. Operational planning for AOCs during FMP preparation occurs over a short time period (five days). During these joint meetings, a review of the operational requirements for the preparation of block layout and mapping is completed. There are some challenging boundary layouts required in the modified harvest areas. The team considered all values, from biological to social, using a logical review of a progression of spatial data layers. The result was a well-coordinated process that is mutually satisfactory to the parties involved and addresses a list of competing values.

A table of “required alterations” is prepared by regional and other staff and is included in the supplementary documentation to the FMP. In Phase II, these alterations were carefully considered, examining quite small details of values mapping.

The accuracy of drainage basin calculations for culvert sizing requirements was examined. This calculation is necessary to ensure the culvert size will handle the projected storm water and peak seasonal flooding. The auditors were confident that the current procedure appropriately calculates culvert size.

The audit team also followed up on a finding from a previous audit, regarding the current stability of a major water crossing. There was concern by the previous audit team about washouts given that the river course had not been realigned satisfactorily in the last plan. Examination of the site showed that the current banks are stable with a significant growth of alder to support them. The concern about ongoing monitoring was reasonable, but the site inspections showed that the low level of monitoring is acceptable.

4.4 Plan Assessment and Implementation

The FRI which was used in preparing both the 2006 and 2011 FMPs is based on aerial photography that was flown in 1986. The FRI has been updated in preparation for each subsequent FMP. Planning updates incorporate actual and forecasted depletions and actual accruals. Company staff noted that inaccuracies in the 30-year-old inventory reduced their confidence in stand yield predications. For example, actual yields in mixedwood stands are extremely variable due to consistent underestimation of the conifer content. Poplar yields are consistently overestimated in hardwood-dominated stands. Significant steps were taken in 2006 to re-align the yield curves to reflect the volumes that were being encountered during harvest operations. Further adjustments were made to some of the curves during development of the 2011 FMP. As a result, yield curves developed for the 2011 FMP resulted in an average predicted yield of 164 m³/ha from the planned harvest over the 2011-2016 period (Phase 1). Information from the Trends Analysis Report shows that the actual average yield from harvest operations over the same period was 165 m³/ha. Although the new FRI will be approximately 10 years old before being used to support the development of the 2021 FMP, it is expected to be better than the currently available information.

The Company does not operationally cruise any of the areas selected for harvest and only limited funds have been available to aerially examine potential harvest allocations. The FRI issue is likely to be resolved prior to the next FMP, as a new inventory derived from 2008 imagery is promised by early 2017 and will be used for development of the 2021-2031 FMP.

Field inspections showed accurate values mapping. Values such as stick nests were at the locations denoted on the operations maps. No situations were found where values had been left unprotected. Applications of the Silvicultural Ground Rules (SGR) were appropriate for the forest unit/stand conditions that were encountered in the field.

A total of 29,535 ha were harvested over the 2009-15 period (the first six years of the seven-year audit period, for which data is available) which corresponds to 54% of the pro-rated planned harvest area according to the 2006 and 2011 FMPs. In terms of volume, 5.38 million m³ were harvested over the same period which translates to 64% of the planned harvest of 8.432 million m³. These results translate to an overall yield of 165 m³/ha realized over the six-year period, which is considerably higher than 2006 FMP overall yield estimates of 132.3 m³/ha. The harvest level shortfalls were attributed to poor market conditions starting in 2007-2008, which prompted mill closures or production curtailments in the region.

The audit team inspected approximately 27% of harvested areas. Observations at all harvest locations visited by the audit team confirmed that utilization and harvesting practices were generally good to excellent, with one notable exception. Harvest operations on three blocks showed merchantable pieces had been left at roadside as a result of a full-tree and delimbing operation. In each block, the utilization problem was first reported as an operational issue by MNRF inspectors, and had been missed by earlier inspections conducted by the shareholder's inspectors. These issues were under investigation pending the outcome of discussions with the shareholder representatives, TFAI, and MNRF. Recommendation 6 is relevant to this occurrence and is further described in Section 4.6.

Other harvest blocks showed some minor and isolated instances of non-compliance. For example, only a few high stumps were observed in areas harvested during the winter season. As well, rutting (site damage caused by machinery operating on soft ground conditions) was noted sporadically at scattered locations. Site damage is mentioned infrequently in the compliance inspections, which is consistent with the audit team's observations.

At the time of the audit, there were five suspended blocks, according to the Company's "Detailed Status Notification Report" issued at the end of March 2016. However, three of the blocks have been released for audit by MNRF inspectors and available for renewal treatments. Other blocks were suspended due to the need to return to complete harvesting of sensitive sites during the winter (i.e., frozen soil conditions) or wood still needing to be skidded/hailed/processed. The TFAI employs an excellent tracking system for monitoring the status of its harvest blocks and other activities, which is updated weekly, with copies being emailed to the MNRF.

The auditors were satisfied that the standing residual requirements of the Stand and Site Guide were met (minimum 25 well-spaced snag trees/ha of which at least six must be large diameter, live, high quality cavity trees or those with future potential to form cavities). The Company has created the *Implementation Toolkit for the Forest Management Plan* (Toolkit), an operational manual to assist employees, shareholders, and contractors in conducting all phases of operations on the Timiskaming Forest. The Toolkit is an excellent reference document that includes a series of 13 modules that

describe the operational procedures and conditions for implementing forest management activities on the Forest.

The compliance inspection program appears to be effective. Harvest blocks are inspected on the ground by certified inspectors employed directly by the shareholders or by independent third-party inspectors. The audit team's site inspections and reviews of reports verified that issues detected by the compliance inspectors were reported and dealt with appropriately. Thirty-eight operational issues were identified under harvest activities during the seven-year audit term. Six of the operational issues were deemed to be non-compliant, resulting in three warning letters being issued, two compliance orders imposed, and one penalty for \$3,000 being levied. With only the relatively minor exceptions noted above, harvest areas were very well implemented and were, overall, in compliance with all applicable legislation and regulations.

Salvage harvest operations may be undertaken to recover timber that had been damaged or killed by fire or windthrow, and were conducted on 423 ha during the audit period.

Harvest sites were virtually spotless with very little industrial garbage being found.

Renewal levels (40,269 ha) exceeded harvest levels (29,535 ha) by a factor of 36% over the audit period, which is a commendable achievement.

Table 2. Planned vs actual renewal achievement.

	Planted	Seeded	Natural	Overall
Planned	21,414	6,504	25,605	53,523
Actual	20,772	6,438	13,059	40,269
Achievement (%)	97	99	51	75

More artificial renewal was implemented, as sites that were harvested were more conducive to planting or seeding. Planting area coverage is also higher due to the practice of planting at lower densities to take advantage of the natural conifer ingress. The shortfall in reaching the natural renewal target is attributed to the reduction in harvest operations where natural regeneration is the predominant means of renewal and the Company's practice of delaying the reporting of natural renewal until an assessment of the regeneration is performed.

The TFAI has been delaying the artificial renewal of some jack pine sites to confirm the natural ingress and avoid overstocking treatment areas with seedlings. This is a good practice. The Company has also made significant efforts at regenerating sites where aging poplar had suffered a prolonged forest tent caterpillar infestation (Figure 2). This infestation has resulted in a significant loss of vigor and high levels of poplar mortality. These sites are being treated with an aggressive renewal program supported with funding from Forestry Futures Trust Fund.

Figure 2. Stock planted on areas depleted by unusually severe forest tent caterpillar damage.



Planted stock was well-spaced with trees being spaced off appropriately from existing natural regeneration, resulting in lower planting densities but with more area being treated. Coverage of the treatment areas was generally complete. Trees were planted on sites that were appropriate for the species.

The loss of productive land occupied by roadside slash piles is minimized through TFAI's Standard Operating Practices. Slash management is implemented on all sites regardless of planned silviculture intensity. In most cases, slash will be piled and burned. The audit team's field inspections revealed a very effective program with most slash being piled and burned.

Tending activities occurred on 23,441 ha over the first six years of the seven-year 2009-2016 audit term, which consisted of 22,724 ha of aerial herbicide application, 239 ha of chemical ground tending, 13 ha of manual tending, and 465 ha of pre-commercial thinning. This achievement is equivalent to 91% of the Company's planned six-year pro-rated tending program of 25,864 ha. Most of the slight underachievement was due to a reduced level of ground chemical tending (2,526 ha had been planned) and less area being thinned due to funding shortfalls (2,200 ha had been planned for thinning). During the 2009-2015 period, aerial chemical application achieved 107% of the planned pro-rated level of 21,134 ha.

Company staff mentioned that they now stratify proposed aerial herbicide treatment areas more rigorously to utilize tending resources more efficiently. They also noted that the annual rate of aerial herbicide treatment had increased in recent years owing to the need to re-treat several areas due to poor efficacy.

Company staff determined the need for tending applications by conducting regeneration condition surveys on areas one year after planting treatments and two years following seeding treatments. Tentative treatment boundaries are delineated during these surveys, and application rates and priorities are assigned to each treatment block. Recommendations for follow-up treatment may also originate from FTG surveys that are conducted annually. Assessments appear to have been carried out conscientiously, as areas designated for tending treatments were in need of treatment.

The audit team witnessed an effective tending renewal program, where efforts are made to apply tending treatments promptly, discriminately, and with appropriate prescriptions. Appropriate buffer zones were established around values which were respected during operations. Incursions into the buffers were not detected during the field inspections. One incident of off-target aerial spraying was reported under the compliance inspection program. Pilot error had resulted in the herbicide being applied to a relatively small area in a buffer zone along a small unnamed stream. The incident was self-reported by the spraying contractor to TFAI staff. This incident was investigated by the Ministry of Environment and Climate Change and it was determined that no long-term adverse effects were anticipated. Pre-commercial thinning was undertaken on 621 ha, in contrast to 2,450 ha planned during the same seven-year period of the audit term. The levels of pre-commercial thinning have picked up in the last two years owing to three years (2014 through 2016) of Forestry Futures Trust funding to conduct pre-commercial thinning on 600 ha. A local First Nation contractor completed 201 ha of pre-commercial thinning in 2014 and 176 ha in 2015.

An insect pest management program was undertaken in the summer of 2009 on portions of the Timiskaming Forest (and adjacent Spanish Forest) to control a jack pine budworm infestation near the town of Shining Tree. The management program consisted of an aerial spray operation project using *Bacillus thuringiensis* (Bt) on 18,174

ha within the Timiskaming Forest. The aerial spray operation project was carried out by MNRF's Timmins District.

Seed inventories and the stock production programs have been adequate to support the current and projected renewal program on the Timiskaming Forest.

The Forest has a well-developed access infrastructure, particularly in the eastern and southern portions of the Forest, with several primary and branch roads constructed under previous plans that continue to be maintained. There are also provincial highways (Highways 11, 65, 66, 101, 560, 560A, 661 and 144) that traverse or provide access to the land base. The Company has an active primary and branch road construction program in place.

Road construction is undertaken by shareholders or contractors engaged by the shareholders who must follow rigorous standard operating procedures that have been established by the Company through its Toolkit. Particular attention is paid to roads that encroach or cross over AOCs, such as waterways. With regard to water crossings, the Toolkit furnishes extensive guidance for the planning, construction, maintenance, removal, and monitoring of crossing structures, including culverts, bridges, and temporary winter stream crossings. References to appropriate construction and technical guides, training prerequisites, timing restrictions, and standard operating procedures are included in the Toolkit work instructions. The Toolkit modules related to road construction, maintenance, aggregates, decommissioning, and monitoring, including supplemental forms and instructions, are readily available online for shareholders, operators, and contractors on the TFAI website.

For the purpose of road planning and forest management, TFAI worked collaboratively with the MNRF to develop a road network strategy on the Forest, identifying forest access roads that would be managed by the Company for the purposes of resource extraction. Use management strategies were developed for each road network.

Access restrictions are applied to several primary or branch roads, with many of these access restrictions being regulated under the Public Lands Act, primarily for the protection of self-sustaining lake trout lakes and remote tourism interests. The restrictions are implemented by means of signage outlining specific limitations under the Public Lands Act, and/or construction of physical barriers and decommissioning of water crossings. The audit team did not find any complaints about the restrictions nor observe any indication that they were not effective.

The audit team travelled primary roads during the 12 person days of truck-based field audit inspections and were satisfied that construction practices for new roads were generally good. Compliance inspections showed five non-compliances related to road construction were identified during the audit term, most dealing with cutting excessively wide rights-of-way.

There were 28 culvert and bridge crossings of various types, including temporary crossings, examined in the field. The new crossings installed during the period were largely well-constructed and conformed to recommended practices, installation guidelines, and AWS proposals. However, five culverts were either significantly or observably perched to the extent that they would present a barrier to fish passage. This is a higher than expected number. A recommendation has been issued to review culvert installation procedures with operators to help them adapt to the wide range of conditions that could be encountered on this Forest. **(Recommendation 4)**

Figure 3. A large perched culvert creates a barrier to fish passage.



In 2006, the Government of Ontario developed a funding program (the Road Construction and Maintenance Agreement) to assist the forest industry in offsetting road construction and maintenance costs for roads meeting the criteria for the program. Throughout the audit term, TFAI qualified for assistance to construct and maintain primary and secondary roads and was reimbursed for construction and maintenance costs as illustrated in Table 3.

Table 3. Summary of roads program funding on the Timiskaming Forest

	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	Total
Actual cost of invoices for road construction & maintenance reimbursed (\$'000)	\$4,668	\$4,989	\$4,081	\$4,426	\$3,685	\$2,714	\$4,105	\$28,670
Actual total kilometers of road constructed	6.4	0.0	8.9	20.0	35.6	30.1	42.2	143.2
Actual number of crossings constructed	0	0	5	8	9	7	10	39
Actual total kilometres of maintenance work completed	1,070.5	352.0	669.4	693.7	614.3	555.9	569.5	4,525.3
Actual number of crossings maintained	22	21	6	30	19	9	28	135

Maintenance work included road and water crossing construction, bridge and culvert replacements and repairs, road base improvements, gravelling, brushing, sign repairs, summer grading, and snow plowing. The auditors sampled a great majority of the roads that had received funding and found ample evidence that the work for which the funding was provided had indeed been performed.

4.5 System Support

The system support portion of the audit evaluated the level of training and awareness of MNRF and TFAI staff, as well as document control. Both TFAI and MNRF maintain basic personnel records.

Training records for MNRF are extensive. The MNRF is very safety conscious, and organized training is provided for almost every outdoor activity. Training related to the FMP process for both Company and government staff is organized by MNRF in a timeframe appropriate for planning. Corporately, MNRF has a mature program for organizing FMP training.

The Company has been independently certified to the requirements of the SFI® and FSC® standards. This means the Company has been audited for, among other things, their compliance to human resources procedures. This requires that awareness, education, and training programs are in place to ensure general knowledge as well as knowledge specific to an individual's responsibilities in the sustainable forest management system.

Both MNRF and TFAI maintain sophisticated information management systems. Document control, backup, handling of obsolete documents, and document storage were all being implemented appropriately.

4.6 Monitoring

The Timiskaming Forest falls within the administrative boundaries of four MNRF districts (Kirkland Lake, Timmins, Sudbury, and Cochrane). Approximately 75% of forest operations on the Forest occur within the Kirkland Lake District, and most of the balance is in the Timmins District. Kirkland Lake and Timmins Districts have individually prepared and approved forestry program Annual Compliance Plans (ACOP) that cover operations on the Timiskaming Forest in their respective districts. The Kirkland Lake District takes the lead on forest compliance matters. In its role as lead district, forest management staff in Kirkland Lake have rated all harvest blocks in the approved AWS by compliance risk. This information is then copied to Timmins District for their reference and information. Planned inspections numbers are derived from the analysis and risk rating of operations in the approved AWS.

The 2009 FMPM requires FMPs to include a description of the MNRF district program for auditing forest operations and conducting forest operations inspections. Neither the 2011 FMP Phase I nor Phase II documents include any such description. The MNRF districts are strongly urged to jointly include such text when the next (2021) FMP is prepared for the Timiskaming Forest, using the suggested outline presented in Procedure FOR 07 03 05 in the Forest Compliance Handbook.

Each district submits its reports separately to the Forest Operations Inspection Program (FOIP). Many of the inspection reports identifying operational issues are not being filed in a timely manner. The MNRF staff are invited to meet at least annually with TFAI and shareholder staff at operational workshops held by TFAI. The MNRF staff often attend these workshops and often make presentations at these gatherings.

Evidence collected through the audit team's inspection of field sites and compliance reports suggests that the level of monitoring being conducted by MNRF is sufficient to ensure that the SFL holder is meeting the legislative requirements and their obligations for the portion of the Forest, monitored by the Kirkland Lake District. The activity of the Timmins District was sufficient during earlier stages of the audit term, but has declined noticeably over the last two years. Only three compliance inspections were conducted during the 2014-2015 and 2015-2016 seasons by Timmins District staff on its portion of the Forest. According to the Timmins ACOPs for the last two years, the target should have been approximately 12 inspections. The MNRF's low level of monitoring on this side of the Forest was noted as a concern in two previous independent forest audit reports. In the 2009 independent forest audit, Recommendation #7 directed the MNRF to increase the level of compliance monitoring on the former Shining Tree portion of the Forest. The Status Report shows that the number of inspections has been at a low level

for the past two years. The auditors are re-issuing the recommendation from the previous independent forest audit and are directing MNRF Timmins District to once again address this problem. **(Recommendation 5)**

The MNRF district staff will conduct verification inspections of TFAI's compliance inspections, conduct spot checks of various activities (e.g., harvest, renewal, maintenance, road construction, water crossing construction), and assess adherence to the CFSA and other applicable legislation (e.g., forest fire prevention regulations). The level of oversight appears to be effective. District compliance staff report that TFAI conducts an effective compliance monitoring program, that they maintain very good communications with their Company counterparts, and that submission of routine compliance reports by Company inspectors are mostly done in a timely manner, although there is room for improvement. In the case of MNRF, compliance monitoring targets that were established in the district's ACOPs were not always being met, according to district staff interviews for both districts, with the shortfall being attributed to the MNRF's internal organizational transformation process. Staff had normally been following up diligently on outstanding issues in the past. However, this situation has changed lately as there were 18 operational issues appearing in the FOIP records at the time of the audit that remain outstanding ("open") with one outstanding since 2013. Staff are aware of these outstanding matters and provided reasonable explanations why the issues remained open. In some cases, the issues have been addressed but not tabulated as such in the FOIP database. The utilization issues, which were identified on four compliance reports, are still under review by MNRF. The auditors are recommending that MNRF address the outstanding issues as soon as possible.

(Recommendation 6)

For some of the outstanding issues, it appears that some of the junior staff may be unfamiliar with all the proper procedural steps for following up and closing out issues that had been addressed, as was the case for some of the outstanding items. Indeed, the auditors note that there appears to be no training offered in the proper use of the FOIP application on the MNRF or FOIP website. Veteran MNRF staff confirm that they have not received FOIP training for several years. Compliance monitoring is one of the MNRF's core functions and the auditors believe that staff assigned to carry out these functions should be fully trained in the proper use of filing and following up on compliance issues using the FOIP system. A recommendation to this effect is being issued by the auditors. **(Recommendation 7)**

The auditors also note that the home page of MNRF's FOIP website no longer provides announcements for training opportunities.

The ten-year plan prepared by the Company met the requirements outlined under the 2009 FMPM and MNRF's Forest Compliance Handbook. The plan is very complete and meets the applicable requirements.

The Company has also prepared Annual Compliance Plans for each of the seven years within the scope of the audit (2009-2016).

All compliance activities on the license area are ultimately the responsibility of TFAI. The staff of shareholder companies or contracted compliance inspectors conduct the industry inspections and then submit their reports via the FOIP system. All industry compliance reports filed for the Timiskaming Forest are reviewed and approved by the TFAI Operations Superintendent. There are no “qualified overlapping licensees” operating on the Forest.

Examination of the inspection reports filed under the provincially-sanctioned FOIP provided ample evidence of the level of monitoring that has taken place over the seven-year audit period. The MNRF and TFAI (and the shareholder companies) used the FOIP software application for reporting compliance monitoring inspections for access, harvest, renewal, and protection operations. Overall, the auditors were generally satisfied that the level of monitoring conducted by the industry on the Forest was appropriate and that the program is being implemented very effectively and in accordance with the Compliance Strategy and the Annual Compliance Plans. There were only a few very minor non-compliant situations encountered during field inspections involving water crossing construction and wood utilization which will require action, but none of these are expected to pose any serious threat to any values or the sustainability of the Forest.

Approximately 1,000 compliance reports were filed by TFAI and the shareholder companies over the seven-year audit term. They were completing the reports in a satisfactory manner although only 33% are submitted within required timelines. This is not a cause for significant concern although it warrants a suggestion for improvement.

In most cases, the date that MNRF was informed about operational issues was not recorded in the FOIP report, which creates some difficulty in determining when this information was provided to MNRF. It is suggested that the Company and MNRF should ensure that the date of notification for operational issues/non-compliant incidents are recorded in the appropriate FOIP report. Interviews with MNRF staff confirmed that MNRF is being verbally notified of operational issues and non-compliances within the prescribed timeframes.

The audit team sampled a number of areas that had been declared FTG by conducting field visits and examining relevant documentation (maps and stand attribute data) provided by the Company. The audit team findings confirmed that the boundaries of the sampled FTG field locations had been properly mapped and accurately recorded in the Company's reporting system. Observations in the field supported the Company's claims of free-growing status and generally agreed with the new stand descriptors in most cases. Only minor caveats were found, which are discussed under Criterion 6.3.2. Overall, the auditors witnessed an excellent forest renewal program on the Forest.

Analysis of the results reported in the six annual reports produced during this audit term (2009-2016) indicated that the level of silvicultural success was 60%, a decline from 69% reported in the previous independent forest audit report. The overall regeneration success rate is 91%, with rates of 83% reported over the last two years. The Company has suggested that the reported (not actual) lower silvicultural success rate is likely attributable to the requirement to link the pre-harvest FRI stand descriptors to the restricted amount of possible future forest units. In some cases, the difference in declaring a stand a “silvicultural success” or a “regeneration success” following the FTG survey has involved only a few percentages in species composition, limiting the Company in reporting the area as a silvicultural success. Company staff also cite challenges in predicting the outcome of natural (extensive) renewal treatments on some mixedwood forest units, such as MW1, MW2, and SF1 at such a young age.

The Company has adjusted a stand's Forest Unit descriptor (according to the Forest Information Manual) when the stand is harvested (the “depletion FU”) and the harvest information is being compiled for annual reporting purposes, but this is done where information is available to support it. Understanding and confirming the causes behind the silvicultural success achievement is critical and may potentially influence future management direction at many levels. The results could also inform silviculture treatment prescriptions for certain forest unit/ecosite combinations in order to improve silvicultural success. The auditors are recommending that TFAI undertake an analysis to determine the factors that may be affecting their reported silviculture success rates and develop strategies to help with the reporting of the silviculture success rates.

(Recommendation 8)

Table AR-10 in the Trends Analysis Report (Summary of Harvest and Regeneration Trends) was not properly completed. For example, it is stated that more area is being regenerated than harvested, which is not possible. In its present form, the table is not informative. In the opinion of the auditors, this is a key source of information that enables forest managers to examine long-term harvest and regeneration trends.

This finding has been noted on other forests, and is likely attributable to the somewhat ambiguous instructions in the 2009 FMPM for completing Table AR-10. A supplementary guide containing a clear set of instructions explaining how the table should be properly completed, along with examples, should be provided to plan authors for reference. Consideration should also be given to devising methods for overcoming some of the shortcomings with the table; for example, how to accommodate the situation should forest units definitions be modified between planning terms or situations where management units are amalgamated. A recommendation directing Corporate and Regional MNRF to collaboratively address better instructions for Table AR-10 has been issued. **(Recommendation 9)**

The auditors discussed the state of Table AR-10 that was produced for the Trends Analysis Report and were pleased to confirm that TFAI's current databases can generate the appropriate information to properly complete this table, at least for the past 10 years. The auditors would expect that TFAI will be producing a more accurate and tenable version of Table AR-10 when preparing its Year 7 Annual Report due in 2018.

Although Table AR-10 does not clearly present the status of harvest and regeneration on the Forest, the auditors are confident that the actual level of the overall silviculture effectiveness monitoring is in general accordance with the average annual level of harvest reported on the Forest over the past fourteen years (2001-2015), based on other tables available in the Trends Analysis Report and annual reports, and that future survey levels adequately support recent levels of activity. Harvest levels over the 2001-2015 period have averaged 7,034 ha annually, while the level of monitoring has averaged 8,144 ha/year annually over the same period. It was clearly evident in the field that the Company closely monitors the renewal program.

The measurable indicators of forest sustainability must be monitored to provide for the assessment of forest sustainability to be included with the Year 7 or Year 10 Annual Reports. The Company has updated the Year 10 Report (2010-2011) to address the requirements of the independent forest audit protocol, in the form of a Trends Analysis Report, including information up to and including the most recent annual report (2014-2015).

The Trends Analysis Report was found to be a comprehensive high calibre document confirming the auditor's conclusion that the Company possesses the knowledge and employs methodologies that enable staff to measure achievement of sustainability.

In the 2011 FMP, 28 objectives were developed along with 53 indicators for measuring achievement of the objectives. The auditor's assessment of progress towards achievement of these objectives is given in Appendix 2 of this report.

There are three main types of indicators used for assessing objective achievement in the 2011 FMP: 1) forecasting, 2) monitoring, and 3) compliance. Forecasting indicators calculate the anticipated future forest condition and are used in assessing the sustainability of the proposed management strategy. Monitoring indicators assess the implementation of the proposed management strategy by comparing actual achievements against stated forest management plan objectives. Compliance indicators assess operational practices to determine compliance with regulatory requirements, identify compliance issues, and help identify training needs. Compliance indicators also assist to determine if operational practices are compromising the long-term sustainability of the Timiskaming Forest. Of the 53 objective indicators listed, 31 are forecasting indicators, 16 are monitoring indicators, and 6 are compliance indicators.

Forecasting indicators (e.g., frequency and area distribution of planned disturbances, long-term projected available harvest area and volume by species group, area of habitat for forest-dependent provincially and locally featured species) are calculated at the time of plan preparation. Thirty-one of the indicators are fully or partially assessed at the time that the FMP is prepared. For all monitoring and compliance indicators, the Company has protocols and established practices in place for collecting the needed data for assessment. Many of these practices (e.g., compliance monitoring program, mapping and data collection in support of preparing the annual reports, conducting FTG assessments) have been in place for several years and have been developed to meet the requirements of the FMPM. The auditors are fully confident that the Company has the capacity and capability to compile the data necessary to measure its progress for the sustainability indicators.

The audit and survey procedures employed by TFAI to collect the necessary data for the purposes of analyzing sustainability criteria are appropriate and relevant. Considerable volumes of data are derived from FRI datasets which have been consistently updated and are analyzed using contemporary GIS systems. Timiskaming Forest Alliance Inc. utilized the Strategic Forest Management Model (SFMM) and Ontario Landscape Tool in developing the strategic components of the 2011 FMP which generated the data needed to analyze the forecasting indicators. The Company conducts an effective and regular compliance monitoring program which meets MNRF standards. Through its normal standard operating and reporting procedures (e.g., compliance monitoring system, free-growing assessment program, production of annual reports including the Year 3 Annual Report, Trends Analysis Report, etc.), TFAI is regularly collecting and recording the attribute and spatial data needed to meet the FMPM and Forest Information Manual requirements.

The auditors reviewed Annual Reports for the first six years of the 2009-2016 audit term. The 2015-16 annual report was not available since it was not due for submission before the auditors were preparing the draft audit report. All annual reports were submitted on time and generally conformed to the requirements of the 2009 FMPM.

The annual reports are of very good quality. The level of analysis and commentary satisfactorily meets the applicable FMPM requirements. Both the Year 10 (2010-2011) Annual Report, which serves as the term end review, and the Year 3 (2013-14) Annual Report, which serves as a mid-plan review on the progress on implementation of the forest management plan to the end of the third year, were well written and very thorough in their reviews of the FMP objectives to their respective points in time. Errors or issues found in the reports during the MNRF reviews were relatively minor, seeking wording clarification, additional explanations, or identifying oversights.

4.7 Achievement of Management Objectives and Forest Sustainability

Forest sustainability is the overriding goal of the CFSA, the main piece of legislation governing forest management on Crown land in Ontario. The success of forest management activities in meeting that goal has been assessed in terms of meeting the objectives they were designed to achieve. By reviewing planning commitments as detailed in the 2006 and 2011 FMPs against achievements and analysis shown in Appendix 2, and as reported in the Trend Analysis Report, and observations during this audit, the auditors have assessed sustainability on the Timiskaming Forest.

All aspects of the Trend Analysis Report have been completed in a satisfactory manner. The findings are consistent with observations made throughout this audit.

Observations made from harvest locations confirmed that utilization and harvesting practices were generally good to excellent. Logging damage to residual trees, regeneration, and skid trail coverage was minimal where observed on all sites and within the standards that have been established for the Forest. Overall implementation in terms of retention and removal of appropriate trees (e.g., removing poor quality stems, retaining wildlife trees) exceeded minimum requirements. The auditors noted an issue with utilization on cut-to-length systems and have recommended this be addressed, along with other outstanding operational issues in Recommendation 6.

The Company's documented achievements regarding renewal success are less than expected. Silvicultural success, where the forest renews to the forest unit it originated from, was only 52%. The Company has provided explanations for this shortfall. The FRI, which defines the originating stand, is thirty years old and not reliable. The Company has not conducted pre-harvest surveys, or taken the opportunity to correct the pre-harvest forest unit description prior to harvest. The forest unit definitions, composed of percentages of tree species, are narrowly defined, and therefore regard some stands that are very close to the original stand composition as failures, although they may well meet silvicultural success standards as the stand matures. The documented renewal performance is the most significant issue observed on this audit. Recommendation 8 requires the TFAI to conduct a more thorough analysis of its low silvicultural success rates.

In contrast to this administrative issue, the field site inspections conducted on 25% of the artificially renewed sites showed excellent forest renewal. All renewal sites inspected were growing well. The concern raised by the silvicultural success rate discussion is alleviated by the strong performance noted in the field.

The measurable indicators of forest sustainability, created from the four objective categories in the FMP, have been monitored and reported on by TFAI. Appendix 2 shows the audit team's independent assessment of progress towards achieving those objectives.

The progress towards objective achievement is very strong. Of the 28 objectives identified, one has not been achieved or shown significant progress towards achievement. Objective 2 targets progress towards a balanced age class structure for all forest units that resembles expected natural conditions. There has been human intervention on the forest for over 100 years, and the current age class structure is a product of this history. It will take time to manage the forest towards the stated target, and the management effort will be limited by other objective targets and the practical need for wood markets to support the harvest operations that will be required to transform a stand. The auditors do not regard failure to achieve this objective to be a threat to the sustainability of the forest estate.

Progress towards meeting the habitat and forest diversity objectives is evident. These are long term objectives. All feature species habitat was within 20% of the target area. It is worth noting that virtually all these species have been considered in management of this forest for over 20 years. The small number of rare, threatened, or endangered species on the Forest that have significant habitat management requirements has simplified the achievement for this group of objectives.

Socio-economic objectives have been achieved. Harvest achievement has been challenged by the capacity of wood consuming mills to profitably process and sell forest products. The forest manager has produced all of the wood expected by TFAI shareholders.

Area of concern prescriptions have been effectively administered. They offer strong protection for defined ecological and cultural values in real time. Road construction and maintenance were judged to be effective. Road water crossings are a potential source of sedimentation into streams and are always the subject of attention from the auditors. Water crossings were found to be in good order, with the exception of some perched culverts, and the aquatic values suitably protected. Operations adjacent to aquatic habitats were consistently within practice standards established for operations in riparian zones.

The auditors conclude that the ecological components of the Timiskaming Forest which are most likely to be influenced by forest operations are being managed in a sustainable manner.

4.8 Contractual Obligations

The audit team reviewed the terms and conditions in SFL #542247 issued to TFAI. The auditors noted a high level of conformance with the contractual requirements of the SFL. Appendix 3 provides detailed comments on the performance of Timiskaming Forest Alliance Inc. in meeting its individual SFL obligations.

As reported in the 2009 independent forest audit report, TFAI has been aggressively meeting its obligations to treat Class Y and Z Lands since the inception of the Timiskaming Forest SFL in 1998. At the time when the last independent forest audit report was issued in 2009, there was a net outstanding untreated area of 891 ha of Class Y and Z lands remaining. When seeking an update on the status of the outstanding area, it was determined that some of the area had received attention in the form of FTG surveys and being declared free-to-grow since 2009. However, TFAI had not been actively reconciling and reporting upon the activities specifically applied to the Class Y and Z lands since 2009. Company staff were able to produce an informal update which concluded that 329 ha remain that TFAI is obligated to treat. A recommendation has been issued, directing the Company to complete this task. (**Recommendation 10**)

The 2011 FMP, AWSs, and annual reports have been completed as required. There were no operations required for fire control during the term of the audit. One insect control program was conducted in the southwest part of the SFL. This was managed out of MNRF's Timmins District and Gogama.

The Company and the MNRF districts have diligently addressed the findings of the 2009 independent forest audit. Each recommendation from the audit was carefully considered and action to address each recommendation is either completed or in progress.

The Company maintained an amount exceeding the required minimum balance in its Renewal Trust Fund each year through the audit period, excepting the year ending March 31, 2011. Circumstances contributing to this included a shortfall in revenues from timber harvest and settlement of a decade long tax dispute. The company and MNRF completed a repayment agreement and the deficit was erased by March 31, 2012. TFAI paid interest on the deficit amount as part of this agreement. Additional detail on the management of the Renewal Trust Fund is provided in Appendix 3.

4.9 Conclusions and License Extension Recommendation

The auditors found management of the Timiskaming Forest to have largely met the requirements of planning and operational specifications relevant to the audit period.

Planning met the requirements of the FMPM. The plan amendment process is inefficient and a recommendation has been issued to address that situation. However, the 2011 FMP was created with a high level of public and expert insight, and the final product provides a well written and comprehensive path forward.

Harvest operations were well done. The auditors witnessed good block layout, effective utilization, retention of live standing timber that met requirements, and very limited occurrence of soil disturbance. Residual slash and chip management was effective

through the audit period, and there was evidence of good collaboration between the Company and local MNRF to establish operational standards for debris management.

Field inspections showed an effective forest renewal program. Monitoring is continuing as required. Operational compliance is operating at an appropriate level. Annual reports are well written and have been submitted on time. The Trend Analysis Report completed in preparation for this audit was well done and provides a helpful explanation on longer term management of the Forest.

Forest management has clearly benefited from improved economic conditions. The MNRF districts have a relatively stable and demonstrably practical and effective staff. Relations between MNRF and Company staff are professional and effective.

The recommendations issued on this audit aimed at the local managers are tactical rather than strategic. They identify relatively subtle deficiencies in the program.

The audit team concludes that management of the Timiskaming Forest was generally in compliance with the legislation, regulations and policies that were in effect during the term covered by the audit, and the Forest was managed in compliance with the terms and conditions of the SFL held by Timiskaming Forest Alliance Inc. Forest sustainability is being achieved, as assessed through the Independent Forest Audit Process and Protocol. The audit team recommends the Minister extend the term of SFL #542247 for a further five years.

Appendix 1 – Recommendations

Independent Forest Audit – Record of Finding

Recommendation 1

Principle: 2 Consultation
8 Contractual Obligations

Criteria: 2.5 Aboriginal Involvement in Forest Management Planning.
8.1.15 Aboriginal Opportunities

Procedure: Review and assess whether reasonable efforts were made to engage each Aboriginal community in or adjacent to the management unit in forest management planning as provided by the applicable FMPM and assess the resulting involvement and consideration in the plan or amendment.

Procedure: Determine through interviews and annual reports the extent to which the SFL or Agreement condition pertaining to Aboriginal opportunities has been addressed in which the SFL holder shall work co-operatively with the Minister and local Aboriginal communities in order to identify and implement ways of achieving a more equal participation by Aboriginal communities in the benefits provided through forest management planning.

Background Information and Summary of Evidence: One of the original Forest Management Class Environmental Assessment conditions and a criterion in the independent forest audit process is to assess whether there is a more equal participation in the benefits of forest management to Aboriginal peoples. This has been a challenging criterion to assess because the information MNRF collects on participation by Aboriginal peoples is limited. Details about Aboriginal involvement working in mills or logging work is often not collected, provided or presented. During the audit period there were at least three occasions where First Nations, industry, and MNRF have looked to obtain more comprehensive information on economic benefits. This is not a unique problem to this Forest and has been raised in previous independent forest audits.

There are some examples of Aboriginal peoples receiving more equal participation in the benefits of forest management planning. Most of the First Nations do receive funding for participation in forest management planning and the preparing of Aboriginal Background Information Reports. Temagami First Nation has identified that the limited capacity funding does preclude more participation on their part.

Silvicultural opportunities on the Forest have been offered to First Nations and a contractor from Matachewan First Nation has participated in the past. It is not clear how many individuals from First Nations participate in tree planting activities.

A horse logger from Matachewan First Nation has harvested on the Forest and Wahgoshig Resources Inc. has also undertaken forest harvesting on the Forest through their own harvesting rights and previously through Timiskaming Forest Alliance. Wahgoshig has expressed concern that the opportunities and volume are very limited.

Timiskaming First Nation has taken a strong interest in non-timber forest products and works co-operatively with the TFAI.

There is no documentation on whether First Nations individuals work in area mills, which would represent the largest economic opportunity.

The Timiskaming Forest is one of the pilot projects for forest revenue sharing in the province. This would suggest that economic benefits for First Nations should be documented.

Discussion: Aboriginal peoples have been provided with some economic opportunities and benefits through various forest management activities on the Timiskaming Forest. While the interests of First Nations in economic opportunities on the Timiskaming Forest vary, there is some interest in continuing to pursue more economic opportunities in the Forest. These opportunities are going to vary from community to community and need to be based on community interests but the TFAI and MNRF are encouraged to continue to work with First Nation communities that express an interest in economic opportunities through forest management activities. These may vary from harvesting to silviculture, to fuelwood, to non-timber forest products. However, there is evidence that some efforts are being made.

During the audit period concerns were raised by a couple First Nations with respect to limited economic opportunities. In one specific instance a First Nation challenged MNRF and the licence holder to demonstrate how Aboriginal people have been involved in economic benefits associated with the forest over time. The MNRF and the licence holder had a difficult time demonstrating quantitative evidence over time. Part of the pressure to demonstrate Aboriginal economic involvement comes from the general trend of greater Aboriginal participation in all resource industries and the fact that, in other resource industries, economic benefits are often tracked in great detail and are subject to very detailed impact and benefit agreement conditions.

One of the independent forest audit procedures requires the auditor to: “review whether Aboriginal peoples were provided with, and whether they availed themselves, of opportunities to achieve more equal participation in the benefits provided through forest management planning and assess the results. Include the following: “examine whether the actual results have been appropriately reflected in the annual district condition 34 (formerly T & C 77) reports”. The older and the more recent Condition 56 District Reports lacked sufficient detail for the auditor to really assess opportunities. Through Principle 8 of the Independent Forest Audit Process and Protocol, the auditor is to determine the extent to which the SFL or Agreement condition pertaining to Aboriginal opportunities has been addressed in which the SFL holder shall work co-operatively with the Minister

and local Aboriginal communities in order to identify and implement ways of achieving a more equal participation by Aboriginal communities in the benefits provided through forest management planning. More substantively, Aboriginal peoples have questioned the benefits to their community from forest management. Being able to more rigorously assess progress on Aboriginal economic involvement over time would seem to be a logical monitoring activity that would address the root concerns.

There are challenges and legal issues associated with collecting some of the information associated with the reports and preparing reports that would satisfy Aboriginal peoples, MNRF and the forest industry might be difficult. Co-operation by all parties would be required to produce reports that are meaningful. Ultimately, the benefit of such information needs to be considered at a local Aboriginal community level and efforts would need to be made by all parties to document and share the information. It may also be advisable for the information not to be reported on or made public. These decisions should be made by the parties involved. Corporate or regional MNRF offices should consider providing guidance to assist the districts in carrying out this work. Moreover, as the traditional territories of many Aboriginal communities overlap multiple forests and districts, there would be some advantages to taking a broader geographic approach. The auditor is of the opinion that each of the local Aboriginal communities should be asked as to whether they are interested in tracking such economic information over time. Whether this should occur within or outside of the FMP process (partially or wholly) would be a matter unique to each community based on discussions with MNRF and the licence holder. Similarly, whether any of this information should be made public or not would be part of the discussion. There are likely many different approaches that could be utilized and the auditor does not want to prescribe one particular approach.

Conclusion: If desired by local Aboriginal communities, MNRF, the forest industry and local Aboriginal communities should consider better approaches to tracking Aboriginal economic involvement in the forest over time.

Recommendation 1: At an individual Aboriginal community level, the MNRF, together with the forest industry and local Aboriginal communities, must consider an approach to tracking economic involvement in the Forest over time.

Independent Forest Audit – Record of Finding

Recommendation 2

Principle: 3 Forest Management Planning

Criterion: 3.1.3 FMP amendments

Procedure(s): 2. Determine the frequency of plan amendments, and in consideration of information gained from procedure 1 above, assess whether reasons for the amendments are symptomatic of a gap in information or inadequate planning.

Background Information and Summary of Evidence: The 2011 FMP has been amended 94 times during Phase I. In that time there were five minor amendments and 89 administrative amendments (three others were submitted and withdrawn). The amendments include many different types, including 34 which were for operational road boundaries, 15 for aggregates extraction, and 12 to incorporate contingency areas.

Discussion: The 2011 FMP was developed using a 25-year-old FRI which was a compilation of the inventories for the four Crown Management Units which preceded the Timiskaming Forest. The planning team, the SFL holder and MNRF accepted this out of date inventory and acknowledged that it had limitations. The development of the 2011 plan occurred during the 2008-2009 recession which was a historic downturn in Ontario's industry. At that time the license holders decided to do a reduced field verification of the proposed harvest allocations. This lack of field verification has contributed to many of the amendments.

The time to process administrative amendments and AWS revisions has been inconsistent. On average administrative amendments take 40 days to process while revisions take 39 days on average. Individual administrative amendments have taken 268 days to process and there were 17 which took more than 60 days. Administrative amendments and AWS revisions are generally inconsequential changes to the plan and its documentation. Processing these should be simple. In fact, when these types of changes were examined it became evident that the Kirkland Lake district handles them much more efficiently and effectively than the Timmins district.

Conclusion: The FMP amendment approval process is inconsistent.

Recommendation 2: The MNRF districts must examine their amendment and revision processing to determine ways to speed approvals and improve consistency between districts.

Independent Forest Audit – Record of Finding

Recommendation 3

Principle: 3 Forest Management Planning

Criterion: 3.3 Management Unit Description - in plan preparation

Procedure(s): 3.3.6 Review the applicable FMPM for requirements. The FMPM requires a list of sources of information on the values maps or otherwise available in values data base, methodologies for data collection, identification of those subjects for which data is recognized as being incomplete or missing.

Background Information and Summary of Evidence: The FMPM requires that values maps for planning also records the source of information, methodologies for collection, and identification of incomplete information. In short, values information needs to be of high quality and ready for use in planning. Auditors interviewed staff from both the Company and MNRF to discuss the handling of values information. It was found that both organizations very efficiently handled large amounts of information for a range of values and most local values information is synchronized promptly.

However species at risk information has a long delay before appearing in GIS layers supplied by Land Information Ontario (LIO). In some cases, the delays were reported to be more than a year. The map layers normally are transferred in September for preparation of the AWS. Species at risk values are often not the most recent because of delays.

Interviews with MNRF Regional staff provide evidence that this has been addressed. Changes occurred in 2016 which should allow species at risk observations to appear in LIO as soon as information is uploaded by the District. In the past, observations needed to be verified by NHIC to ensure element occurrence errors do not enter the system. For planning purposes, now observations in the LIO database will be supplied to the companies. In other words, updated Element Occurrence information is not required for AOC delineation.

Discussion: There was a concern raised by both the Company and MNRF about the delay in verification of species at risk observations. These data are entered in a timely manner by District staff but it has only been since May 2016 that there no longer is a requirement for verification by NHIC staff. Application of AOC prescriptions for AWS preparation requires current species at risk observation data to be available to the SFL. During the term of the audit and after (up until this report) delays were still reported by District staff. It is possible that the new procedure will address the delay.

Conclusion: The audit team could not verify that the problem has been finally and fully addressed, so a recommendation is made based on the experience of what is occurring now in the District, and during the term of the audit. A recommendation is made to corporate MNRF to review this process to confirm it is rectified.

Recommendation 3: Corporate MNRF shall review the species at risk observation data submission process to ensure that the information is promptly updated in the Land Information Ontario database that is used for planning.

Independent Forest Audit – Record of Finding

Recommendation 4

Principle 4: Plan Assessment and Implementation

Criteria: 4.2 Areas of Concern
3.3 Management Unit Description - FMP management unit description and how it was used in plan preparation.

Procedure(s): 4.2.1. Review and assess in the field the implementation of approved AOC operational prescriptions

Background Information and Summary of Evidence:

Perched culverts were a concern raised during the field visit. The auditors examined 28 culverts of varying sizes from quite small to very large and found five of them with some perching. In a rough sample, with the rehabilitated, washed out and decommissioned culverts not included, the net percentage of culverts with perching was 18% (5 of 28).

Given the large number of crossings in the Forest, some problems are inevitable but this is a high percentage and warranted further discussion. Records from MNRF staff also showed a number of other locations where perching had been observed.

Discussion: Overall, the operators have the capacity to install culverts that are well seated and functional. The site visit sample in the audit and other supporting observations indicate that there is need for a review of the installation process with operators for culvert installation to reduce perching.

In discussions in the field, there were a number of comments about the causes of perching, from problems with plastic culverts warping to unpredictable local site conditions in the case of one large installation.

Note that another instance of four rehabilitated crossings (Pacaud 130) showed the Company has had problems, but is proactive and thorough in repairs when problems occur. The audit team also viewed some well executed large and complex installations.

Conclusion: The incidence of perching was higher than is found normally. Since no single cause was apparent, a recommendation is made to review the procedure. Culvert perching is a solvable problem with careful review of installation methods.

Recommendation 4: The Company in cooperation with MNRF district staff must review culvert installation procedures with operators to help the operators adapt to the wide range of conditions that could be encountered on the Timiskaming Forest prior to, during, and post installation.

Independent Forest Audit – Record of Finding

Recommendation 5

Principle: 6 Monitoring

Criterion: 6.1 District Compliance Planning and Associated Monitoring

Procedure 6.1.1: ...determine how forest management activities were to be monitored for compliance by MNRF and assess whether the actual level of the overall monitoring program was in accordance with the FMP/plans and whether it was appropriate based on evidence gathered through analysis of related criteria, including field audits.

Background Information and Summary of Evidence: In the 2009 independent forest audit, Recommendation #7 directed the MNRF to increase the level of compliance monitoring on the former Shining Tree portion of the Forest, which is now the part of the Forest monitored by the Timmins District. The Status Report issued in response to the last audit shows that the number of inspections carried out in the Timmins District portion, for the first couple of years following the audit report release, increased substantially, but has since tapered off to a very low level, as shown in the table below:

Number of Compliance Reports Filed by District by Year

Reporting Year	MNRF Reports - Timmins District	MNRF Reports - Kirkland Lake District	Total
2009-2010	1	56	57
2010-2011	16	38	54
2011-2012	11	43	54
2012-2013	5	62	67
2013-2014	1	33	34
2014-2015	1	5	6
2015-2016	2	36	38

Discussion: The auditors found that the level of monitoring implemented by the Timmins District was sufficient during earlier stages of the audit term, but had declined noticeably over the last two years. Only three compliance inspections were conducted during the 2014-2015 and 2015-2016 seasons by Timmins District staff on its portion of the Forest. According to the Timmins District's ACOPs for the same two years, the target number of inspections should have been approximately 12 inspections over the two-year period (Note: it was difficult to determine the exact target for 2014-2015, as the

ACOP did not include a risk rating chart). The MNRF's low level of monitoring on this portion of the Forest (the former Shining Tree SFL) was actually noted as a concern in two previous independent forest audit reports (Shining Tree Forest - 2006 and Timiskaming Forest - 2009). Although TFAI maintains a good compliance record, the audit team believes, as was also expressed in the two previous audits, that it is important for the MNRF to maintain a strong compliance-monitoring presence on all parts of the Forest. This is consistent with the MNRF's commitments towards compliance described in its Forest Compliance Strategy.

Conclusion: The level of compliance inspections undertaken on the Timmins District portion of the Forest is too low and is not consistent with MNRF's commitments and responsibilities.

Recommendation 5: The MNRF shall increase the level of compliance monitoring on the Timmins District portion of the Forest so that it applies a consistent and appropriate level of compliance monitoring on all parts of the Timiskaming Forest.

Independent Forest Audit – Record of Finding	
Recommendation 6	
Principle:	6 Monitoring
Criterion:	6.1 District Compliance Planning and Associated Monitoring
<p>Procedure 6.1.1: ...determine how forest management activities were to be monitored for compliance by MNRF and assess whether the actual level of the overall monitoring program was in accordance with the FMP/plans and whether it was appropriate based on evidence gathered through analysis of related criteria, including field audits.</p>	
<p>Background Information and Summary of Evidence: The MNRF district staff of both Kirkland Lake and Timmins Districts will conduct verification inspections of TFAI's compliance inspections, conduct spot checks of various activities (e.g., harvest, renewal, maintenance, road construction, water crossing construction), and assess adherence to CFSA and other applicable legislation (e.g., forest fire prevention regulations). The level of oversight appears to be mostly effective. Compliance monitoring targets that were established in the district's ACOPs were not always being met, according to staff interviews for both districts, with the shortfall being attributed to the MNRF's internal organizational transformation process. One aspect of the program that appears to require more attention lately is follow-up on situations that have been flagged as "operational issues", which MNRF is required to address.</p>	
<p>Discussion: District staff had normally been following up diligently on operational issues in the past. However, this situation has changed lately, as there were 18 operational issues appearing in the FOIP records at the time of the audit that remain outstanding ("open") with one outstanding since 2013. Staff are aware of these outstanding matters, however, and provided reasonable explanations in most cases why the issues remained open. In some cases, the issues have been addressed, but not tabulated as such in the FOIP database. The utilization issues, which were identified in four compliance reports, are still under review by MNRF.</p>	
<p>Conclusion: The number of operational issues that remain outstanding is excessive and should be addressed as expeditiously as possible by MNRF.</p>	
<p>Recommendation 6: Kirkland Lake and Timmins Districts of the MNRF shall address the 18 outstanding operational compliance issues on the Timiskaming Forest as expeditiously as possible and develop a process to deal with future operational issues in a timely manner.</p>	

Independent Forest Audit – Record of Finding	
Recommendation 7	
Principle:	6 Monitoring
Criterion:	6.1 District Compliance Planning and Associated Monitoring
<p>Procedure 6.1.1: ...determine how forest management activities were to be monitored for compliance by MNRF and assess whether the actual level of the overall monitoring program was in accordance with the FMP/plans and whether it was appropriate based on evidence gathered through analysis of related criteria, including field audits.</p>	
<p>Background Information and Summary of Evidence: Refer to the Background Information and Summary of Evidence presented under Recommendation 6.</p>	
<p>Discussion: One of the explanations offered by MNRF staff for the high number of “open” operational compliance issues was that staff have not appropriately checked off the operational issue as being addressed. This shortcoming is attributed to some of the junior staff possibly being unfamiliar with all of the proper procedural steps for following up and closing out issues that had been addressed. The pool of experience at MNRF has diminished recently due to the high level of turnover that has occurred as a consequence of the organization's recent transformation process. Veteran MNRF staff confirm that they have not received FOIP training for a number of years. The auditors also note that the home page of MNRF's FOIP website no longer provides announcements for training opportunities.</p>	
<p>Conclusion: Compliance monitoring is one of the MNRF's core functions and the auditors believe that staff assigned to carry out these functions should be fully trained in the proper use of filing and following up on compliance issues using the FOIP system.</p>	
<p>Recommendation 7: Considering the high staff turnover rate resulting from its transformation process, Corporate MNRF shall provide training to staff involved with compliance monitoring on the proper use of its Forest Operations Inspection Program (FOIP) software application.</p>	

Independent Forest Audit – Record of Finding

Recommendation 8

Principle: 6 Monitoring

Criterion: 6.3 Silviculture Standards and Assessment Program

Procedure 6.3.2: Assess whether the management unit assessment program (SFL and District) is sufficient and is being used to provide the required silviculture effectiveness monitoring information including assesses reasons where eligible areas are not determined to be successfully regenerated to the projected forest unit (silvicultural success)...

Background Information and Summary of Evidence: The results of the TFAI's free-growing surveys are recorded annually in its annual reports through GIS “coverages” and are tracked by silvicultural treatment package. This format facilitates an evaluation to determine if the treatments were a “silvicultural success” (the objectives of the SGR treatment package were attained by reaching the FTG standard for the predicted forest unit) or a “regeneration success” (reaching the FTG standard for a forest unit other than predicted). Analysis of the results reported in the six annual reports produced during this audit term (2009-2016) indicated that the level of silvicultural success overall is low at 60%, and represents a decline from a 69% rate reported in the previous independent forest audit report. The overall regeneration success rate is 91%.

Discussion: The Company has speculated that the lower silvicultural success rate (60) is likely attributable to the pre-harvest FRI stand descriptors being inaccurate. In some cases, the difference in declaring a stand a “silvicultural success” or a “regeneration success” following the FTG survey has involved only a few percentages in species compositions. Company staff also cite challenges in predicting the outcome of natural (extensive) renewal treatments on some mixedwood forest units, such as MW1, MW2, and SF1.

In the case of inaccurate FRI, interviews with staff reveal, however, that there has been little funding available in recent years to inspect potential stands for harvest allocations while preparing the FMP, which represents an opportunity to correct the FRI attributes (including the Forest Unit descriptor). The Company can also adjust a Forest Unit descriptor for a stand (according to the Forest Information Manual) when the stand is harvested (the “depletion FU”) and the harvest information is being compiled for annual reporting purposes, but this was not done. The Company may not be taking enough advantage of this opportunity to make such adjustments, which may help improve the level of silvicultural success when reported in the future. The Silviculture Effectiveness Monitoring compiled by MNRF also noticed that a higher level of silvicultural success may have been achieved if TFAI had taken the opportunity to modify the depletion forest unit descriptor, or had assigned the correct operational

prescription to stands (e.g., stands planted with spruce had been inappropriately assigned a “PJ1-Intensive” FOP). This finding further supports the auditors' findings. The MNRF staff generally agree with the auditors that the silvicultural success rate on the Forest is likely higher than what is shown in their data.

Conclusion: The auditors believe that the mediocre silvicultural success rates calculated from the Company's database records contradict the higher rates that were observed in the field. The Company should more closely examine why, on paper, their silviculture success rates do not reflect the field results. Understanding and confirming the causes behind the silvicultural success achievement is critical and may potentially influence future management direction at many levels. For example, the results of the analysis could play a useful role for rationalizing and adjusting certain input parameters for future forest modeling exercises, such as successional pathways and post-harvest renewal rates. The results could also impact silviculture treatment prescriptions for certain forest unit/ecosite combinations in order to ensure silviculture success.

Recommendation 8: Timiskaming Forest Alliance Inc. shall undertake an analysis to determine the factors that may be affecting its reported silvicultural success rates and develop strategies that will yield silvicultural success rates that more closely reflect its field results on a schedule that will coincide with the submission of the 2016-17 annual report.

Independent Forest Audit – Record of Finding

Recommendation 9

Principle: 6 Monitoring

Criterion: 6.3 Silviculture Standards and Assessment Program

Procedure 6.3.3: Assess the actual level of the overall monitoring program including whether..... the amount of area eligible for survey is consistent with past levels of harvest and whether all areas are being addressed.

Background Information and Summary of Evidence: In the Company's harvest and regeneration analysis section (Section 4.1.4) of the Trends Analysis Report, there are a few statements pointing out the difficulty the report author experienced in filling out Table AR-10 (Summary of Harvest and Regeneration Trends), which is the key table used for this analysis. Review of Table AR-10 and associated text found statements in the report suggesting that this table is not likely filled out correctly, leading to challenges in reaching rational conclusions about the state of harvest and regeneration on the Forest, as encountered by the report author. For example, it is stated that more area is being regenerated than harvested, which is not possible, i.e., one cannot physically renew more area than is available and “percent FU successfully regenerated” cannot exceed 100%. Yet, this is the case for some of the forest unit numbers presented in the table.

Discussion: In its present form, Table AR-10 that is included in the Trends Analysis Report is essentially meaningless and serves little use. This is not the first time the auditors have run across this problem during an audit and are not surprised, as the instructions in the 2009 FMPM for completing this table are ambiguous. In the opinion of the auditors, Table AR-10 is a key table that enables forest managers to examine long-term harvest and regeneration trends, which is an important aspect of assessing forest sustainability. This table is also one of the tables required for the enhanced annual reports that are prepared for Year 7 and Year 10 versions of the reports. The auditors discussed the state of Table AR-10 that was produced for the Trends Analysis Report with TFAI staff and were pleased to ascertain that TFAI's current databases are capable of generating the appropriate information for properly completing this table, at least for the past 10 years. The auditors would expect that TFAI will be producing a more accurate version of Table AR-10 when preparing its Year 7 Annual Report due in 2018.

Conclusion: A set of instructions, supplementary to the ones appearing in the 2009 FMPM, should be prepared that clearly explain how Table AR- 10 should be properly filled out. These instructions should include correctly completed example tables and should be provided to plan authors for reference. Consideration should also be given to formulating direction for overcoming some of the shortcomings with the table; for example, how to accommodate the situations where Forest Unit definitions are modified between planning terms or situations

where management units are amalgamated. The recommendation below encourages both MNRF Region and Corporate level staff to work collaboratively to produce a supplementary guide for properly completing Table AR-10. Although not included in the recommendation below, the auditors would also encourage MNRF to apply the same approach for similar tables (e.g., Table AR-14) in the anticipated revised FMPM, which is scheduled to be released later in 2017.

Recommendation 9: Corporate MNRF and Regional staff shall develop a clear set of instructions, supplementary to the 2009 Forest Management Planning Manual, that explains to plan authors how to properly complete Table AR-10 (Summary of Harvest and Regeneration Trends). These instructions should be developed in time to enable Timiskaming Forest Alliance Inc. to complete an accurate version of the table to be included in its Year 7 Annual Report due in 2018.

Independent Forest Audit – Record of Finding

Recommendation 10

Principle: 8 Contractual Obligations

Criterion: 8.1.14 Silviculture standards and assessment program

Direction: SFLs include requirements related to Class X, Y, Z lands. The SFL company is to assess and report on, in accordance with the FOSM, FIM, and the FMPM, the achievement of regeneration efforts to ensure obligations and standards are met

Background Information and Summary of Evidence: As reported in the 2009 independent forest audit report, TFAI has been aggressively meeting their obligations to treat Class Y and Z lands since the inception of the Timiskaming Forest SFL in 1998. At the time when the last independent forest audit report was issued in 2009, there was a net outstanding untreated area of 891 ha of Class Y and Z lands remaining. When seeking an update on the status of the outstanding area, it was determined that some of the area had received attention in the form of FTG surveys and being declared free-to-grow since 2009. However, TFAI had not been actively reconciling and reporting upon the activities specifically applied to the Class Y and Z lands since 2009. Company staff were able to produce an informal update which concluded that 329 ha remain that TFAI is obligated to treat.

Discussion: Under Paragraphs 16(2) and 16(3) of its SFL agreement, TFAI is required to meet its obligations on Class Y and Class Z lands, respectively. Paragraph 16(6) requires the Company to “implement the necessary silvicultural prescriptions on lands described in Paragraph 16.2 so as to meet the silvicultural standards described in the approved Forest Management Plan for the Timiskaming Forest when the silvicultural prescriptions were made, or in accordance with any amendment of that standard.” Paragraph 16(8) requires that “The Company shall assess and report on, in accordance with the Forest Operations and Silvicultural Manual, the Forest Information Manual, and the Forest Management Planning Manual, the achievement of its regeneration efforts to ensure the obligations and standards outlined in Paragraph 16.6 are met.”

Conclusion: The Company has not been reporting on its efforts to ensure that its obligations are being met as outlined in Paragraph 16.6 of its SFL agreement since 2009. Given the relatively small area remaining to be treated and reported upon, the auditors believe that the Company should finally address these areas and conclude its obligations on the outstanding Class Y and Z lands as early as possible.

Recommendation 10: Timiskaming Forest Alliance Inc. shall take the necessary measures to address the remaining Class Y and Z lands it is obligated to treat and report upon these areas as stipulated under its SFL agreement prior to the next independent forest audit scheduled for the Timiskaming Forest.

Appendix 2 – Management Objectives Table

Objective	Auditor Assessment (achieved, partially achieved, or not achieved)	Auditor Comments
Management Objective 1: To provide for a distribution of disturbance patches that more closely resembles the expected size, composition and age produced by wildfire	Partially achieved.	Overall, the movement towards the disturbance template has been achieved. There are targets at the edge of the disturbance template (i.e., the area in a very large disturbance or the number of very small disturbances) that are practically not achievable within the parameters of other environmental and economic objectives. There is active consideration of this objective on forest planning and progress towards the targets is evident.
Management Objective 2: To promote balanced age class structure for all forest units resembling expected natural conditions.	Partially achieved	Desirable level and target levels are not achieved. This is a long-term challenge that starts with a forest that has been the subject of varying harvest, silvicultural and development strategies for most of the previous century. Movement towards this objective is evident.
Management Objective 3: To ensure an appropriate proportion of the total area within a forest unit is sustained within the overmature successional stages as per the Old Growth Policy for Ontario's Crown Forests.	Partially achieved	Target level has been achieved for 10 forest units that have been assessed. Four forest units have not been assessed as the area occupied by each on the Forest is less than 10,000 ha and has not been analyzed.
Management Objective 4: To maintain on the unit and enhance where ecologically and economically feasible, the presence of transitional species such as Hard Maple and Yellow Birch on the management unit in order to ensure their continued presence.	Achieved	Desirable level and target level are achieved.
Management Objective 5: To maintain and enhance where ecologically and economically feasible, the presence of White Pine and Red Pine on the management unit in order to ensure their continued presence and in an effort to maintain current White Pine and Red Pine.	Achieved	Desirable level and target level are achieved.
Management Objective 6: To provide suitable marten habitat on the Timiskaming Forest.	Achieved	Desirable level and target level are achieved.

Management Objective 7: To ensure critical moose habitat is considered through the application of Moose habitat AOC prescriptions designed to retain such habitat or enhance it habitat locally where appropriate as well as ensuring that spatial representation of critical habitats.	Achieved	Desirable level and target level are achieved.
Management Objective 8: To provide habitat for provincially featured and locally featured forest-dependent wildlife species on the Timiskaming Forest.	Achieved	Desirable level and target level are achieved for 11 species assessed. The target level achieved ranged between 86% and 128% of the desirable level specified.
Management Objective 9: To ensure the protection of habitat required by the Endangered Species Act for identified species-at-risk inhabiting the Timiskaming Forest.	Achieved	No non-compliances have occurred relating to species at risk habitat during the FMP. Objective has been achieved.
Management Objective 10: To minimize productive forest area lost by forest management activities.	Achieved	The road density index at the end of the 2014-2015 year is 0.4385 km/km ² . This represents a 13% increase from the index road density indicator. Desirable level not achieved, but target level has been achieved.
Management Objective 11: To enhance the growth, yield and commercial value of selected forest stands on the Timiskaming Forest while retaining the genetic diversity of those species artificially regenerated.	Achieved	A total of 21,287,600 trees have been planted on the Timiskaming Forest since the start of the plan. This equates to 5,321,900 seedlings planted annually. The objective has been achieved.
Management Objective 12: To regenerate harvested area to standards set in the SGRs, using a combination of natural and artificial methods that will increase future harvest levels in a cost effective manner and ensure long-term forest health.	Achieved	As per AR-10, 91% of the harvested area has been successfully regenerated. The objective has been achieved.
Management Objective 13: Investigate opportunities and economically viable alternatives to the aerial application of herbicides for the control of competing vegetation in regenerating harvest area. (Qualitative)	Achieved	A Vegetation Management Strategy for the Timiskaming Forest was developed in 2012 and updated in 2014. This strategy provides an overview of the use of herbicides, and trends starting in 2010. The total volume of active ingredient (kg ai/L) has varied from year-to-year, but the trend shows a gradual reduction since 2010 and demonstrates continual reduction of chemical pesticide use. The decision process leading to the application of herbicides is also provided in this strategy. The total area treated and the method of application is provided annually in the annual reports. The

		desirable level and target level are being achieved.
Management Objective 14: To identify and mitigate management impacts on all known fish and wildlife habitat, recreational, commercial, non-timber forest resource, and other values on the Timiskaming Forest Management Unit.	Achieved	One administrative penalty was issued for a non-compliance in 2011. No negative environmental impacts resulted from this particular non-compliance. Therefore, there should be no implications for successfully achieving this objective.
Management Objective 15: To protect known Cultural Heritage values and identify and evaluate areas where high potential exists for Cultural Heritage Values within the Timiskaming Forest.	Achieved	No administrative penalties have occurred since the onset of the plan in 2011 related to Cultural Heritage values. Records of Archaeological Assessments are maintained by TFAI in specific block files. Objective has been achieved.
Management Objective 16: To manage the forest resources of the Timiskaming Forest providing the maximum sustainable and predictable wood supply to TFAI shareholders and shareholder facilities	Achieved	Eight indicators. Five show strong levels of achievement which represents the large majority of the area and volume harvested. Two indicators for minor species have achieved targets for majority of species, and one indicator (planned harvest levels for minor species) does not meet targets for majority of species. Overall, a demonstration of achievement with opportunity for improvement with minor species groups or forest units.
Management Objective 17: To provide a maximum sustainable wood supply so that the communities depending upon the forest industry for employment and stability continue to benefit from forest management activities on the Timiskaming Forest.	Achieved	The objective has been achieved for all mills able to receive and process wood profitably in the audit term.
Management Objective 18: To identify areas for individuals to harvest fuelwood for personal use and provide commercial fuelwood opportunities. (Qualitative)	Achieved	This modest objective has been achieved with modest effort. Fuelwood areas are portrayed on AWS operational scale maps each year. AWS text states fuelwood licences will be issued by MNRF.
Management Objective 19: To promote and support the utilization of biofibre on the Timiskaming Forest in an ecological and sustainable manner.	Partially achieved	The target was to move towards 10% utilization of biofibre. Biofibre utilization has achieved 8% of the planned biofibre volume. There is little evidence to support the promotion part of the objective, but volume of biofibre consumed is impressive give the significant constraints in developing this product in a cost-effective manner.

Management Objective 20: To undertake all forest management operations using sound environmental practices such that any negative environmental impacts are avoided or minimized.	Achieved	One administrative penalty was issued for a non-compliance in 2011. No negative environmental impacts resulted from this particular non-compliance. Therefore, there should be no implications for successfully achieving this objective. Compliance program and auditor observations identified no significant unplanned impacts from forest operations.
Management Objective 21: To identify and mitigate management impacts on all known fish and wildlife habitat, recreational, commercial, non-timber forest resource, and other values on the Timiskaming Forest Management Unit.	Achieved	One administrative penalty was issued for a non-compliance in 2011. No negative environmental impacts resulted from this particular non-compliance. Compliance reports and auditor observation support a conclusion of effective implementation of AOCs.
Management Objective 22: To minimize productive forest area lost by forest management activities.	Achieved	The target is to ensure that the available Crown forest area does not decline by more than 5% (857,114 ha) over the long term (100 years). This has been achieved in the current plan and projected to be achieved in all future planning periods.
Management Objective 23: Provide opportunities for local Aboriginal communities for increased participation in the forest management planning process.	Partially achieved	Representatives of five of six First Nations or Aboriginal communities participated in at least one FMP planning meeting. Comments from First Nations Desired Forest and Benefits meeting were incorporated into the FMP. Aboriginal Background Information Report received from most First Nations, but reports are incomplete. (Recommendation 1)
Management Objective 24: Improve the mutual exchange of information between the local Aboriginal communities and local forest industry on such matters as values protection, forest-based employment and economic opportunities.	Partially achieved	To date, TFAI and or TFAI shareholders have met with several First Nation communities with interests in the Timiskaming Forest (outside AWS information sessions) during the FMP. Movement is being shown towards the desirable level, and meetings will continue throughout the FMP. This is an objective that is unlikely to ever be fully achieved, but progress is evident.
Management Objective 25: TFAI to explore mentorship and extension services to interested local Aboriginal Communities/Entrepreneurs. (Qualitative)	Achieved	Progress is evident. Two First Nations participate in silviculture or harvest opportunities. Outreach continues through the FMP 101 program.
Management Objective 26: To engage the Local Citizens Committee in the development and implementation of the forest management plan. (Qualitative)	Achieved	The MNRF and TFAI have engaged both the Kirkland Lake and Gogama LCCs in the development of this FMP. They have actively participated and have remained fully engaged in the development of the

		FMP. It also indicates that both LCCs are in agreement with the plan (with one dissenting opinion by a member who expressed general concern) up to Stage II - LTMD.
Management Objective 27: To coordinate forest management activities such that benefits to all Crown land users are maximized while conflicts resulting from forest operations are minimized. (Qualitative)	Achieved	Annually, the TFAI continues to hold meetings with tourist outfitters, trappers, bear management area operators, snowmobile clubs, cottagers associations, and mining and mineral exploration companies to facilitate the review and coordination of upcoming annual schedule activities. These meetings have contributed to minimizing conflicts between resource-based users and scheduled forest management activities on the Forest. This objective was achieved.
Management Objective 28: To undertake all forest management operations using sound environmental practices such that any negative environmental impacts are avoided or minimized.	Achieved	One administrative penalty was issued for a non-compliance in 2011 which is a very good record for a Forest that is as active as this one. No negative environmental impacts resulted from this particular non-compliance. Therefore, there should be no implications for successfully achieving this objective.

Appendix 3 – Compliance with Contractual Obligations

License Condition	License Holder Performance
Payment of Forestry Futures and Ontario Crown charges	The Company's payments are up to date as of March 31, 2016.
Wood supply commitments, MOAs, sharing arrangements, special conditions	There are two wood supply commitments listed in the SFL document for this Forest. Both receive harvest volumes as required.
Preparation of FMP, AWS and reports; abiding by the FMP, and all other requirements of the FMPPM and CFSA	Preparation of the FMP, AWSs, and annual reports were completed in accordance with the requirements of the FMPPM. Compliance reports were not always on time if the inspection found everything to be in conformance. Compliance reports with negative findings were consistently submitted within the required timeframes.
Conduct inventories, surveys, tests and studies; provision and collection of information in accordance with FIM	The Company has met the minimum Forest Information Manual requirements. A new FRI has been initiated. Aerial photography and ground verification has been completed but the final product has not been delivered. The new FRI should be on site in time for use to develop the 2021 FMP.
Wasteful practices not to be committed	The auditors did not observe wasteful practices other than those reported in compliance reports. In general, harvest sites were clean of industrial garbage and utilization of softwood species was very good.
Natural disturbance and salvage SFL conditions must be followed.	The conditions of the SFL license regarding natural disturbance and salvage harvesting were followed. Salvage harvesting was conducted in the audit period within the required operating rules.
Protection of the license area from pest damage, participation in pest control programs	A jack pine budworm program was conducted in the southwest corner of the SFL. It was administered out of the Timmins District.
Withdrawals from license area	No areas were withdrawn from this Forest during this audit term.
Audit action plan and status report	The action plan dealt with each of the recommendations from the previous independent forest audit. The audit team was impressed with the thoroughness of the response from MNRF and the Company to the last audit.
Payment of forest renewal charges to Forest Renewal Trust	Forest renewal charges to the Forest Renewal Trust have been paid as required.
Forest Renewal Trust eligible silviculture work	Field inspections of the 2008-2016 program confirmed that the silviculture operations were consistent with forest operations prescriptions

	and were eligible for trust fund reimbursement. Maps and records were available.
Forest Renewal Trust forest renewal charge analysis	The renewal rates were reviewed and adjusted to ensure sufficient funds were available to meet the requirements of the silviculture program.
Forest Renewal Trust account minimum balance	Payment of forest renewal charges to the Forest Renewal Trust have met the minimum balance as required, except for the year ending March 31, 2011. This deficit was corrected under the auspices of a repayment plan formalized between TFAI and MNRF. See further details on the Forest Renewal Trust Fund following this table.
Silviculture standards and assessment program	The Company has an active silviculture standard assessment program. As discussed in sections 4.6 and 4.7, the regeneration success rate is acceptable, but the silviculture success rate is not. A recommendation has been issued to more carefully assess the cause of the poor results. The explanations in the Trends Analysis Report and annual reports are reasonable, but a more careful analysis is required.
Aboriginal opportunities	The audit team is of the opinion that all the First Nations and Aboriginal communities have been provided sufficient opportunity to be involved in FMP preparation and to be engaged in consultation. The MNRF Resource Liaison Office has done an excellent job of involving the First Nations in a way that works for each of them. It is very difficult to generalize about the interests, issues, and concerns of all the various First Nation and Aboriginal communities and, therefore, it is important to discuss them individually or in a smaller subset.
Preparation of compliance plan	Preparation of the compliance plan met the contractual obligations.
Internal compliance prevention/education program	The internal compliance program met contractual requirements.
Compliance inspections and reporting; compliance with compliance plan	Compliance inspections by the Company were generally well done.
SFL forestry operations on mining claims	Notices were provided to all mining claim holders with operations within the Forest.

Forest Renewal Trust Fund

A trust account was established for the purpose of funding forest renewal on the SFL. A minimum balance, equaling the transitional funding initially provided by the Crown, is to be in

place on March 31, every year. For the Timiskaming Forest, the minimum balance required is \$4,839,500.

The fund is maintained through collection of a charge for every cubic meter of wood harvested. Ongoing revenues based on harvest fees are intended to replace expenses incurred in conducting the renewal program on the SFL.

MNRF Regional and District staff and the TFAI presented different summaries of the Company's performance in meeting the minimum balance requirements. The MNRF maintains the minimum balance was below requirements for four of the six years of the audit. The Company maintains the fund was below the required balance only on March 31, 2011.

It is likely that the difference is based on MNRF accounting for "cash on hand" for each year, while the Company includes the outstanding tax liabilities from the Crown to the SFL holder. Taxes (HST) paid by SFL holders in the conduct of a renewal program are tracked and reimbursed back to the SFL holder as these activities are tax exempt.

Table 4 presents the Forest Renewal Trust Fund balances as provided by MNRF Regional staff and the Company.

Table 4. Renewal Trust Fund balances for the Timiskaming Forest.

	MNRF Trust Fund Balance (\$)	TFAI Trust Fund Balance (\$)	HST Credit (\$)	Closing Balance after tax reconciliation (\$)	Surplus/Deficit of minimum balance account (\$)
31-Mar-10	5,676,941	5,778,569	303,909	6,082,478	1,242,978
31-Mar-11	3,832,143	3,902,639	511,672	4,414,311	-425,189
31-Mar-12	3,908,292	3,995,199	1,011,454	5,006,653	167,153
31-Mar-13	3,635,369	3,645,575	1,379,909	5,025,484	185,984
31-Mar-14	3,899,040	3,974,163	1,250,955	5,225,118	385,618
31-Mar-15	5,275,704	5,284,001	-34,934	5,249,067	409,567

The differences in the MNRF and TFAI statement of "cash on hand" varies from a maximum of 2.2% to a minimum of 0.2%. Within the scope of an independent forest audit, the auditors deem these differences to be negligible.

The failure to meet the minimum balance requirement in 2011 was addressed in a legal agreement between TFAI and MNRF. The Company agreed to refund the trust through an increase in renewal charges for conifer, and committed to make a one-time payment to meet the required minimum balance by March 31, 2012. The agreement specified payment of funds plus interest.

The trust funds are monitored by MNRF corporately. The auditors accept statements from TFAI and the fact that MNRF only identified 2011 as the year that the required minimum was not in

place as sufficient evidence that the Company's inclusion of tax credits owing in the account balance is accepted by MNRF corporately.

The detailed information provided allowed the auditors to evaluate the revenue and expenditure balance of the Renewal Trust Fund. Table 5 provides details on the annual revenues, from harvest fees and investment interest, and the annual expenditures on forest renewal.

Table 5. Annual revenue and expense of the Renewal Trust Fund for the Timiskaming Forest.

Year	Renewal Revenues (\$)	Interest income (\$)	Total revenue (\$)	Renewal expense (\$)	Surplus/Deficit renewal income vs expense (\$)
31-Mar-10	1,125,257	392,425	1,517,682	2,593,609	-1,075,927
31-Mar-11	1,078,237	129,764	1,208,001	3,083,931	-1,875,930
31-Mar-12	3,285,955	117,345	3,403,300	3,310,741	92,559
31-Mar-13	2,562,954	115,904	2,678,858	3,028,482	-349,624
31-Mar-14	2,845,043	303,724	3,148,767	2,820,178	328,589
31-Mar-15	2,305,099	159,857	2,464,956	2,760,659	-295,703

There is a lag between harvest and renewal. All silviculture observed by the auditors was prescribed on a site-specific basis. In some cases, renewal activities such as planting or seeding may occur the year after harvest. In other cases, renewal activities will not occur for a few years after harvest.

There is a lag between the time when contributions are made to the Renewal Trust Fund and when expenditures are taken from the fund. Interviews with staff and field observations through the audit, as well as the gross expenditures shown for 2011 when the Company was aware that revenues were low, show a continued commitment to completing the forest renewal program. The auditors view this as evidence that the Renewal Trust Fund is working as planned. The Renewal Trust Fund is an effective means for supporting forest renewal. It is sufficiently independent of economic conditions to ensure there are resources available for the renewal program through challenging times, and supports a conclusion that the Timiskaming Forest is being managed in a sustainable manner.

Appendix 4 – Audit Process

The auditors collected evidence through document review, interviews with staff and stakeholders, and physical inspection of field activities that occurred on the Timiskaming Forest between April 1, 2009 and March 31, 2016. The audit process began with a pre-audit meeting and site selection meeting in New Liskeard on June 8th, 2016. The purpose of the meeting was for the lead auditor, Timiskaming Forest Alliance Inc., and MNRF to discuss audit logistics and for the lead auditor to collect background information and documents for the audit. Following the meetings, an audit plan was finalized and distributed that outlined the audit schedule and identified the main contacts for the audit.

From August 1 to September 25, the audit team reviewed documents describing forest management activities on the Forest through the audit period. Interviews were held with a variety of interested parties. Personnel from the Company and MNRF were interviewed throughout the audit. Most of these interviews took place in person, but contact by phone and e-mail between the audit team, auditees, and the public was common.

Field site visit locations were selected to evaluate harvest, renewal, tending/maintenance, FTG operations, AOCs, road construction and maintenance, site preparation, water crossings, wildlife management activities, and other areas of special interest. Sites that had multiple audit values (e.g., renewal and AOC) were preferentially selected. Field sites were also selected to ensure that all geographic areas of the Forest were observed and to ensure that evaluations of winter and summer operations were representative of actual operations and included representative sites for the operations of each of the TFAI shareholders. On-site and field audit activities occurred between September 26 and 30.

The audit team verified records and information systems in the Timiskaming Forest Alliance Inc. and MNRF offices. The team split into two or three field crews at different times, each of which was accompanied by Company or MNRF staff. Sampling was completed through 13 person days of field inspections, including one day of helicopter-based assessment. Sampling continued until the auditors had viewed all of the selected sites and were satisfied that they had viewed enough sites to be confident in their assessment of field performance.

Table 6 shows the total amount of each key activity that has occurred on the Timiskaming Forest during the audit period, total area of the sites visited, and the sample size as a percentage of the total area. The audit protocol requires the audit team to sample a minimum of 10% of the area treated during the audit period, and to increase the sample where higher risk activities were identified (Table 8).

Table 6. Sampling intensity of the audit.

Activity	Total Area in Audit Period (ha)	Total Area Sampled (ha)	Sample intensity %
Depletion	34,994	8,076	23
Site Preparation	24,262	5,821	24
Pre commercial thinning	467	147	31
Tree Planting	23,552	2,925	21
Seed	6,596	1,671	25
Release	23,124	4,870	21
FTG	33,238	4,115	12

AOC Inspections

A total of 112 AOCs were viewed in the field (Table 7). Overall implementation was good. Some amendments took place in keeping with changing conditions in the field; these were similar in number to other forests in Ontario.

Table 7. Area of concern site inspections.

AOC type	Number
Full modified (water quality)	14
No modified (water quality)	7
30m-50m slope dependent (water quality)	17
30m fixed width (water quality)	1
Water crossing	28
Decommissioned crossing	6
Modified Late Winter (moose)	3
Reserve Late Winter (moose)	3
Enhanced Late Winter (moose)	7
Trout Lake	2
Osprey nest	1
Highway aesthetics	2
Viewscape management	3
Recreational trail	1
Road restriction zone	3
Point residual	4
LUP or Mining Claim	3
First Nation reserve	1
Archaeological Potential Area	4
Classified Value	2
TOTAL	112

In addition, the audit team travelled extensively on the road system in the Forest and observed operational road conditions on primary, secondary, and operational roads.

The audit protocol allows the auditors to subsample procedures identified as low and medium risk in terms of contributions to the sustainability of the Forest. Given that the audit team reviewed the content, process, or outcome of each of these procedures in their assessment of those procedures deemed high risk, the auditors elected to audit all procedures pertinent to the SFL (Table 8).

Table 8. Independent forest audit procedures audited by risk category.

Procedures Audited, by Risk Category								
Principle	Low Risk			Medium Risk			High Risk	Comments
	Applicable (#)	Selected (#)	% Audited	Applicable (#)	Selected (#)	% Audited	Audited (#)	
1. Commitment	2	2	100	2	2	100	100	All applicable procedures were audited
2. Public Consultation and Aboriginal Involvement	6	6	100	6	6	100	100	All applicable procedures were audited
3. Forest Management Planning	27	27	100	27	27	100	100	All applicable procedures were audited
4. Plan Assessment and Implementation	6	6	100	6	6	100	100	All applicable procedures were audited
5. System Support	2	2	100	2	2	100	100	All applicable procedures were audited
6. Monitoring	4	4	100	4	4	100	100	All applicable procedures were audited
7. Achievement of Objectives and Forest Sustainability	5	5	100	5	5	100	100	All applicable procedures were audited
8. Contractual Obligations	20	20	100	20	20	100	100	All applicable procedures were audited
Totals	72	72	100	72	72	100	100	

Summary of Consultation and Input into the Audit

General Public: Invitations to comment on forest management on the Forest over the audit term were placed in four local newspapers.

Local Citizens' Committee: Interviews were held in person with nine LCC members by the socio-economist, including representation from the Kirkland Lake LCC, the Gogama Area Citizen's Committee and the Timmins LCC. The socio-economist and the lead auditor attended an LCC meeting during the field audit. This LCC is specific to the Timiskaming Forest. For the period of the audit, the LCC was comprised of a diverse mix of individuals, including representatives from: environmental/naturalist organizations, the forest products industry, loggers, the general public, aboriginal groups, cottagers, anglers and hunters, prospectors, and tourism interests.

First Nations: The audit team made efforts to consult with all First Nations that were invited into the Aboriginal consultation process for the most recent FMP. Specifically this included Matachewan, Wahgoshig, Mattagami, and Temagami First Nations. There are also three First Nations in the Sudbury area: Sagamok, Atikameksheng Anishnawbek (also known as Whitefish Lake) and Wahnapiatae that have traditional territory that overlaps the extreme southern end of the Forest and have been included on the Aboriginal Involvement list since the beginning of planning for the 2011 FMP. Beaverhouse Aboriginal community is based in Kirkland Lake with traditional and modern day pursuits in the Forest. While not recognized as a First Nation by the federal government, they have participated in a similar fashion to First Nations. Timiskaming First Nation has a federal reserve in Quebec but with members in Ontario and with an expressed traditional territory that comes into Ontario. The Teme-Augama Anishinabae were formerly non-status individuals associated with Temagami First Nation. The Métis Nation of Ontario, which has three community councils based in Timmins, Timiskaming and Cochrane.

Letters of invitation for input into the audit were sent to three different Métis Nation of Ontario (MNO) Community Councils.

Ministry of Natural Resources and Forestry: The MNRF district manager, resource management supervisor, management forester, management biologists, and resource management technician participated in the opening and closing meetings of the field audit, as well as the field audit itself. Regional MNRF staff attended the opening meeting, three days in the field, and the closing meeting.

Timiskaming Forest Alliance Inc.: All staff with an active role in management of the forest participated in the field audit and in the supply of documentation.

Forestry Futures Committee: One committee member and the forest audit coordinator attended the opening meeting and participated in one field day. The forest audit coordinator participated in the closing meeting.

Appendix 5 – List of Acronyms

ACOP	Annual Compliance Plan
AOC	Area of Concern
AHA	Available Harvest Area
AWS	Annual Work Schedule
CFSA	Crown Forest Sustainability Act
FMP	Forest Management Plan
FMPM	Forest Management Planning Manual
FOIP	Forest Operations Information Program
FRI	Forest Resource Inventory
FSC [®]	Forest Stewardship Council
FTG	Free-to-grow
GIS	Geographic Information System
LCC	Local Citizens Committee
LIO	Land Information Ontario
MNO	Métis Nation of Ontario
MNRF	Ontario Ministry of Natural Resources and Forests
NHIC	Natural Heritage Information Centre
RPF	Registered Professional Forester
SFI [®]	Sustainable Forestry Initiative
SFL	Sustainable Forest License
SGR	Silvicultural Ground Rules
TFAI	Timiskaming Forest Alliance Inc.

Appendix 6 – Audit Team Members and Qualifications

Craig Howard, R.P.F., CEA (SFM) – Lead Auditor

Education: B.Sc. Forestry, University of New Brunswick, 1983.
Experience: 32 years' experience in forestry, 19 years in private practice, 3 years in the MNRF.
Previous Audits: 26 Independent Forest Audits, numerous Sustainable Forest Initiative and Forest Stewardship Council assessments.

Mark Leschishin, R.P.F – Forester

Education: B.Sc. Forestry, Lakehead University, 1978. Dip. For. Tech., 1974.
Experience: 36 years' experience in forestry in Ontario.
Previous Audits: 28 Independent Forest Audits, 1 Forest Stewardship Council assessment, 4 annual FSC surveillance assessments.

Tom Clark – Ecologist

Education: M.Sc., H.B.Sc.
Experience: Forest ecologist and biologist with 30 years experience in habitat ecology.
Previous Audits: 31 Independent Forest Audits, and numerous Forest Stewardship Council assessments and audits.

Phil Shantz – Socio-economist

Education: M.E.S, R.P.P.
Experience: Registered professional planner with 22 years experience in forest auditing/certification, resource and socio-economics, Aboriginal peoples consultation and research, environmental assessment and public consultation.
Previous Audits: 26 Independent Forest Audits, 22 Forest Stewardship Council audits and assessments.

Brian Callaghan, R.P.F. – Forest Management Planning Analyst

Education: B.Sc.F., University of Toronto, 1982.
Experience: 30 years experience in forestry in Ontario.
Previous Audits: 30 Independent Forest Audits, 22 Sustainable Forest Initiative verifications, 104 Forest Stewardship Council assessments.

Appendix 7 - Trend Analysis

The Trend Analysis has been issued as a separate document.