March 2024

Forest Information Manual

Ontario

Ontario Ministry of Natural Resources and Forestry

Forest Information Manual

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Policy Division

Crown Forests and Lands Policy Branch

FOREST INFORMATION MANUAL

Prepared under the Authority of the Crown Forest Sustainability Act, 1994

March 2024

Ministry of Natural Resources and Forestry

Executive Summary

The Forest Information Manual (FIM) sets out the mandatory requirements, standards, roles and responsibilities, timelines, and conditions for providing information in respect of the managed forest. This includes the provision of forest resources inventories, maps, geospatial data layers, forest operations inspections, forest values, base data, reports and other information required for the purpose of forest management planning and ensuring compliance with the *Crown Forest Sustainability Act* and its regulations.

The requirements of the FIM complement the requirements of the Forest Management Planning Manual (2024). A series of supplemental Forest Information Manual technical specifications set out the detailed, technical conditions as a requirement of information set out in the Forest Information Manual.

Exchange of information is a shared responsibility among forest resource licence holders and the Ministry of Natural Resources and Forestry. The requirements for information in the Forest Information Manual apply to licence holders who prepare and implement forest management plans and report on forest operations. Similarly, the Ministry of Natural Resources and Forestry provides information to licence holders to support planning and implementation, and is therefore also subject to the requirements of the FIM.

Résumé

Le Manuel relatif à l'information forestière énonce les exigences, normes, rôles et responsabilités, délais et conditions pour transmettre de l'information relative aux forêts de la Couronne. Cela comprend la fourniture: d'inventaires des ressources forestières, de cartes, de couches de données géospatiales, d'inspections d'activités forestières, de valeur des ressources forestières, de données de bases et d'autres données exigées en vue de planifier la gestion forestière et d'assurer la conformité à la Loi de 1994 sur la durabilité des forêts de la Couronne et à ses règlements.

Les exigences en matière d'information énoncées dans ce manuel complètent les exigences en matière de planification et d'exploitation du Manuel de planification de la gestion forestière (version de 2024). Une série de spécifications techniques additionnelles relatives au Manuel sont en cours de préparation; elles résumeront les critères techniques détaillés exigés en matière d'information dans le Manuel relatif à l'information forestière.

L'échange d'information est une responsabilité partagée entre les titulaires de permis forestier et le ministère des Richesses naturelles et des Forêts. Les exigences associées à l'information figurant dans le Manuel relatif à l'information forestière s'appliquent aux titulaires de permis forestier pour la préparation et la mise en œuvre de ces plans de gestion forestière pour les forêts de la Couronne et dans la conduite et les rapports sur les opérations forestières. Le ministère des Richesses naturelles et des Forêts (MRNF), qui est responsable de transmettre l'information aux titulaires d'un permis d'aménagement forestier durable pour faciliter la préparation et la mise en œuvre des plans de gestion forestière, est également assujetti aux exigences du Manuel relatif à l'information forestière.

Foreword

Land Acknowledgement

We would like to acknowledge the long history of the lands referenced in the Forest Information Manual. The forests currently managed by the Ministry of Natural Resources and Forestry were cared for by Indigenous peoples long before the inception of Canada, Ontario, or the Ministry. They continue to be taken care of by Indigenous peoples today.

We recognize that some of the geographic boundaries and areas used in this document may not resonate with all readers. We understand that the borders of Ontario and its management units may not align with some readers' conceptualizations of the landscape's boundaries. Although the Ministry uses this system to separate the managed forest, we appreciate that it is not the only way the landscape is divided.

As a Ministry, we have a responsibility for the sustainable management of the forest, and we recognize the need to work alongside First Nation and Métis communities to achieve this goal for generations to come.

The Policy Framework for Sustainable Forests

The overall context for forest management in Ontario is the Policy Framework for Sustainable Forests. The framework sets broad direction for forest policy and makes forest sustainability the primary objective of forest management. It helps to address climate change by ensuring Ontario's forests contribute positively to the global environment. This contribution is made through the application of the principles for sustaining forests.

Overview of the Crown Forest Sustainability Act

The *Crown Forest Sustainability Act*, 1994 (CFSA) came into effect on April 1, 1995. The Act is enabling legislation, and provides for the regulation of forest planning,

information, operations, licensing, trust funds, processing facilities, remedies and enforcement, and transitional provisions. The CFSA is designed to allow for the management of all forest-based values, while providing for the sustainability of forests. The CFSA defines sustainability as long-term forest health, and reflects the broad direction set out in the Policy Framework for Sustainable Forests.

A Manual Approach to Implementation of the Crown Forest Sustainability Act

The CFSA requires the provision of four manuals to guide various aspects of forest management in Ontario. These manuals are prepared in accordance with Section 68 of the Act and are regulated in accordance with Section 69(1) 29:

1. the Forest Management Planning Manual (FMPM);
2. the Forest Information Manual (FIM);
3. the Forest Operations and Silviculture Manual (FOSM); and
4. the Scaling Manual (SM).

The FMPM is the pivotal document that provides direction for all aspects of forest management planning for forests in Ontario within management units designated under the CFSA, with the exception of the southern Ontario management unit. In accordance with the CFSA, forest sustainability will be determined in accordance with the approach described in the FMPM. The approach requires the identification of measurable indicators in order to assess the effectiveness of activities in achieving management objectives and to assess the sustainability of the forest for the management unit. For the forest management plan (FMP), the determination of sustainability will be a conclusion that the FMP provides for the long-term forest health on the management unit, and has regard for plant life, animal life, water, soil, air, and social and economic values, including recreational values and heritage values. Management unit annual reports require the monitoring and evaluation of future forest conditions to compare with planned outcomes, which provide a means for continual refinement, redevelopment, and improvement of forest management activities.

The FIM describes the information requirements to support forest management. The FIM directs the sharing and exchange of forest-related information between the MNRF (hereafter referred as 'the Ministry') and Ontario's forest industry.

The FOSM sets out the over-arching principles and accepted approaches for forest management, the standards for forest operations and silvicultural practices, the minimum qualifications for forestry workers, and the procedures for the evaluation of forest management in Ontario.

The SM contains instructions and standards for the measurement of forest resources, provides instructions for the authorized movement of forest resources and sets out the requirements for conducting scaling audits.

Manual Revision

The four manuals are revised, improved, and updated based on experiences in using the manuals, and as new information becomes available. Revisions to the manuals will be made in accordance with the CFSA regulation.

Ministry will monitor feedback through the adaptive management cycle. Changes to legislation, regulations, and policy will be continually monitored to ensure direction in the regulated manuals is consistent with such legislation, regulation, and policy. The FIM will be reviewed at least once every ten years which may result in a proposal to amend it.

Forest Information Manual

The Forest Information Manual (FIM) sets out legal obligations of sustainable forest licensees and the Ministry for the collection and provision of forest information. On designated management units which are not managed under a sustainable forest license, the Ministry or another designated party is responsible for the preparation and implementation of a forest management plan. For the purpose of the FIM, the sustainable forest licensee is referenced as the party responsible for preparing and implementing FMPs. Where the requirements of the FIM refer to the sustainable

forest licensee, those requirements will apply to the Ministry or the party responsible for the preparation and implementation of the FMP.

The FIM is the framework for providing and exchanging information for the purpose of forest management planning and to ensure compliance with the *Crown Forest Sustainability Act*, 1994 (CFSA) and its regulations. FIM sets out the requirements, standards, roles and responsibilities, timelines, conditions, and technical specifications for providing and exchanging information. The FIM requirements are aligned with the planning and operational requirements set out in the FMPM.

The requirements in the FIM, provide the foundation for exchanging consistent and timely data about forests to:

- provide a basis for assessing and confirming the sustainable management of Ontario's forests;
- improve access to information for the First Nation and Métis communities, stakeholders and the public in an open and transparent manner; and
- increase the knowledge base of the Ministry.

The Ministry will ensure that professional and technical training programs related to the preparation and implementation of forest management plans are maintained and delivered so that the knowledge of persons involved in the application of this manual is current.

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Introduction

The Crown *Forest Sustainability Act* (CFSA) enables forest management activities to occur on forests in Ontario according to an approved forest management plan (FMP) prepared in accordance with the Forest Management Planning Manual (2024) (FMPM). These activities are authorized by the Ministry, providing they contribute to the purposes of the CFSA that:

> *...provide for the sustainability of Crown forests and, in accordance with that objective, to manage Crown forests to meet social, economic and environmental needs of present and future generations.*

The Forest Information Manual (FIM) is one of four manuals mandated by the CFSA. FIM sets out the information required by the Ministry and sustainable forest licensees with respect to managing and sustaining forests in Ontario in accordance with the CFSA and its regulations. Section 68(6) of the CFSA defines the scope of FIM as follows:

> *The Forest Information Manual may contain provisions respecting information systems, inventories, surveys, tests and studies that may be required by the Minister in respect of Crown forests and respecting information to be provided to the Minister in respect of Crown forests.*

The information set out in the FIM is limited to forests in the managed forest. The FIM sets out the requirements for creating or collecting information about forests by identifying the types of information systems, inventories, surveys, tests, or studies to be applied or conducted. The FIM also sets out the requirements for the provision of information about forests to the Ministry.

The basic requirements for much of the information set out in the FIM are identified in the FMPM. The FIM is a technical document that sets out the details of what this information will consist of and the manner that they are to be exchanged between the sustainable forest licensee and the Ministry.

The roles and responsibilities of the sustainable forest licensees and the Ministry continue to evolve. Sustainable forest licensees share responsibility for forest management planning and conducting forest operations. Sustainable forest licensees generate and possess considerable information required to support forest management planning. The Ministry has the responsibility to collect, maintain and provide forest resources inventory and values information. The Ministry continues to protect the public interest in the sustainability of the forests through the land use and forest management planning processes.

A condition of forest resource licences requires information to be provided to the Ministry in accordance with the FIM. Authority for the Ministry to require information is provided by sections 20 and 21 of the CFSA. The FIM also sets out the requirements for information to be provided to sustainable forest licensees by the Ministry.

The mandatory requirements for information do not restrict or limit the Ministry from requesting additional information from sustainable forest resource licensees that may be needed to fulfil the obligations of the Ministry under the CFSA.

The FIM describes ownership, copyright and intellectual property rights of information about forests consistent with the *Freedom of Information and Protection of Privacy Act* (FIPPA), the *Copyright Act* (CA), subsection 21(2) of the CFSA, and current government policies on information.

The FIM requires technical specifications that set out information standards and how information will be provided (FIM technical specifications). The FIM technical specifications set out technical information details that may be modified to take advantage of changes in technology, information management processes, and information systems. These changes will not alter the basic information requirements set out in the FIM. A formal revision process for the FIM technical specifications is provided for later in this Introduction section of the FIM.

The FIM may not set out all the information required for forest management planning or ensure compliance with the CFSA and its regulations. Additional information requirements may be specified in other regulations, manuals or policies.

1.0   Organization of the Forest Information Manual

The FIM is organized into four major divisions, Parts A, B, C and D, plus five associated FIM technical specifications. The FIM provides a description of the information exchange requirements, discusses the format of the information and identifies the party responsible for providing the information. The FIM technical specifications provide the standards (for example, data attributes, format) for the information requirement, the conditions of provision (for example, naming conventions, exchange parameters, validation standards), and the implementation and first effective date implications.

Part A deals with information policy. Part A has linkages to and references components of the FIM Base and Values Technical Specifications, Annual Work Schedule Technical Specification, Annual Report Technical Specification and Forest Management Planning Technical Specifications. Part A deals with the following:

(a) ownership;
(b) intellectual property rights;
(c) information issues resolution;
(d) data access, sharing and exchange;
(e) information management system;
(f) forest management mapping; and
(g) forest management documentation.

Part B deals with information required during the development of the management direction for the FMP, specifically the information requirements associated with preparation and approval of the FMP. Part B has linkages with and references to the FIM Forest Management Planning Technical Specifications, the FIM Forest Resources Inventory Technical Specifications and the FIM Base and Values Technical Specifications. Part B contains direction in respect of:

(a) values information;

(b) base information;

(c) forest resources inventory; and

(d) forest management planning data layers.

Part C identifies information requirements for annual forest operations. Part C is linked to and references the FIM Annual Work Schedule Technical Specifications. Part C contains direction on the following:

(a) annual work schedules (AWS); and

(b) forest operations prescriptions.

Part D links with the FIM Annual Report Technical Specifications and sets out information needs for monitoring, reporting, and evaluation. Part D contains direction on the following:

(a) management unit annual reports; and

(b) monitoring and evaluation.

The FIM technical specifications set out the acceptable formats and methods to create and/or provide the information. The FIM technical specifications provide detailed, technical and product specific requirements and describes roles and responsibilities. Also included are implementation details and timelines. The FIM technical specifications contain direction on the following:

(a) detailed data attribute descriptions;

(b) acceptable file and media formats;

(c) metadata requirements;

(d) information exchange parameters and protocol; and

(e) validation standards/procedures.

A **Glossary of Terms** forms the last part of the FIM.

2.0   Audience for the Forest Information Manual

The FIM and the FIM technical specifications provide direction to information managers, resource analysts, geographic information systems specialists, and information analysts

involved in creating and using information about forests. The FIM also provides direction to foresters, biologists, forest technicians, forest management planning teams, and others involved in forest management planning, operations or reporting.

The FIM technical specifications may also be referenced by information users not directly involved in forest management planning, but who have a need to use or have access to the information about forests.

3.0   Application of the Forest Information Manual

The intention of the FIM and the FIM technical specifications is to set out a process to exchange information in a timely fashion, in a standard and consistent format, and generally to improve the exchange of information. Timelines related to the exchange of information set out in the FIM are related to the development and implementation of FMPs.

The FIM and the FIM technical specifications set out the minimum standards for information provision and exchange. Sustainable forest licensees can provide or maintain additional information if they so choose.

Information requirements prescribed in the FIM take effect when it is published and available to the First Nation and Métis communities and the public, in accordance with subsection 68(10) of the CFSA. Key timelines and effective dates are prescribed in the FIM for each information requirement with more specific, detailed first effective dates, phase-in provisions and implementation descriptions included in the FIM technical specifications.

4.0   Revisions to the Forest Information Manual

The FMPM provides direction for all aspects of forest management planning in Ontario. The FIM complements the FMPM by setting out how the information requirements contained in the FMPM will be met.

The main impetus for revising the FIM is to align it with ongoing changes to the other regulated manuals, including the FMPM. Alignment between the FMPM and the FIM realizes efficiencies in planning and information requirements and reduces implementation obstacles and issues of interpretation. Based on the close relationship between these two manuals, future revisions to the FIM would ideally be produced on a timeframe similar to a FMPM revision.

Another primary consideration in revising the FIM pertains to the experience and knowledge that will be gained through implementing the FIM. The exchange of information, and the effectiveness and ease of use of the FIM will be monitored to determine if improvements or revisions to the FIM are required.

Revisions to the FIM technical specifications will ensure that modern and efficient processes and approaches are used in the collection and sharing of information.

Any revisions or new versions of the FIM will follow the requirements for reviewing and revising regulations, as set out by the Ontario Government.

5.0   The FIM Technical Specifications Implementation and Revision

The FIM technical specifications provide the details of the process and form of information exchanged between the Ministry and the various stakeholders (that is parties) identified in Part A, Section 2.0. The FIM has five separate technical specifications, namely:

- FIM Base and Values Technical Specifications;
- FIM Forest Management Planning Technical Specifications;
- FIM Forest Resources Inventory Technical Specifications;
- FIM Annual Work Schedule Technical Specifications; and
- FIM Annual Report Technical Specifications.

5.1   The FIM Technical Specifications Development and Application

The FIM technical specifications are prepared to help with the exchange of information set out in the FIM. The FIM technical specifications may be revised periodically to

consider more effective and efficient ways of managing, transferring, and receiving information. Changes or revisions to the FIM technical specifications do not impact the requirements or direction for the exchange of information set out in the FIM. A requirement of the FIM is that the FIM technical specifications, as revised from time to time, are followed.

The FIM technical specifications are effective upon regulation of the FIM or as they are developed. The information they reference may be required annually, periodically as associated with the timing and schedule of FMP development, or as scheduled with monitoring, reporting and evaluation. For this reason, the use, availability and development schedule of individual specifications will vary.

The current FIM technical specifications will be maintained and available in the Natural Resource Information Portal (NRIP). The sustainable forest licensee will use the FIM technical specifications listed on the NRIP.

5.2   The FIM Technical Specifications Revision

Information management and information technologies are constantly evolving. To support continual improvement and to optimize business efficiencies, the FIM technical specifications may be reviewed annually. The FIM technical specifications are modified by the Ministry to optimize information transfer in an efficient and cost-effective manner, to allow for flexibility and innovation, and to ensure data quality and integrity.

To the extent possible, required or suggested changes to the specifications will be completed in concert with a change or revision of the FMPM and the FIM. Changes to the specifications can have significant impact on the information systems and processes used by sustainable forest licensees and the Ministry. As our reliance on technology and automation increases, so does the impact of change.

Either the sustainable forest licensee or the Ministry may propose a change to the FIM technical specifications at any time. However, modifications to the FIM technical specifications will not normally occur more than once annually.

Changes to the FIM technical specifications may be based on, but not limited to, one or more of the following:

(a) changes in information technology (for example, information management systems) used by sustainable forest licensees or the Ministry;

(b) identification of alternative (for example, more flexible, easier, more efficient, more cost effective) ways to exchange information while still meeting the requirements set out in the FIM;

(c) clarification of detailed attribute descriptions. In some cases, proposed changes to detailed attributes may require consideration of changes to, or the effect on, the applicable requirements and standards set out in the FIM;

(d) identification of existing or new information requirements from a regulated manual not currently set out in the FIM technical specifications;

(e) identification of improvements to standards in relation to validation, error handling, quality control, quality assurance, or verification;

(f) identification of improved security measures and information confirmation, receipt, and notification protocols and procedures; or

(g) changes to file structures, metadata requirements or standards.

Revisions to the FIM technical specifications may result in significant change or modification to information systems, or management processes used by either sustainable forest licensees or the Ministry (for example, proposed change to the data exchange format). Or, revisions may be simple in nature, easily instituted, and have minimal impact to either sustainable forest licensees or the Ministry (for example, proposed change to feature attributes).

The FIM technical specifications may be revised only if the proposed modifications do not affect the requirements and standards set out within the FIM. Any proposed modifications to the FIM technical specifications that would cause a change to the requirements for information set out in the FIM would first be subject to regulatory modification of the FIM.

5.3   The FIM Technical Specifications Revision – Request and Approval Process

Requests for revisions to the FIM technical specifications from forest industry or other parts of the Ministry are directed to the manager responsible for the FIM. All changes

and revisions to the FIM technical specifications are approved by the Director of the Crown Forests and Lands Policy Branch. The level of detail and supporting rationale for revision requests are determined by significance of the request. Minor, low impact changes are managed internally by the Ministry. Major changes with significant impact will be reviewed and considered in consultation with the forest industry and the other Ministry branches and divisions.

Significant or major change requests should include the following information:

(a) a brief description of the proposed change;
(b) identification of the affected FIM technical specifications;
(c) the applicable conditions identifying why the proposed change is necessary and any associated time constraints;
(d) a description of the significance of the change to the current FIM technical specifications and a list of the affected stakeholders;
(e) the expected gains or efficiencies of implementing the proposed change;
(f) the predicted cost impacts to sustainable forest licensees and the Ministry of the change; and
(g) any issues related to implementing the proposed change.

The sustainable forest licensee may assist in identifying all affected stakeholders, setting timeframes for considering changes, developing and testing proposed revisions, and identifying any training and follow-up needs to ensure effective implementation of the revised FIM technical specifications. Consultation with sustainable forest licensees will occur in instances where they would be significantly affected by the change.

Direct notification of the change or revision will be given to the sustainable forest licensee and the appropriate Ministry staff. Notification will include the effective dates for the revised FIM technical specifications and an indication of the FIM required information governed by the revised specifications. The revised FIM technical specifications will be posted to the NRIP.

Part A Information and Management

1.0   Introduction

Part A sets out procedures and protocol and gives direction and guidance on using and managing the FIM required information. Part A also guides sustainable forest licensees and the Ministry in managing their relationship and interactions related to data sharing and exchange. Part A clarifies the relationships between the CFSA, the Copyright Act (CA), the *Archives and Recordkeeping Act* (ARA) 2006, and FIPPA. Part A also sets out the Ministry's rights to deal with information provided in accordance with the FIM and in relation to the legislation.

For the purposes of the FIM, information includes data (that is collection of facts) and processed data (that is a grouping or organization of data). Examples of information as regulated by the FIM include text, maps, tables, geographic information systems layers, graphs, models, photographs, and images. Information set out in the FIM may include information in digital or hard-copy form.

The FIM sets out the requirements for information about forests for the purpose of forest management planning and ensuring compliance with the CFSA and its regulations. The information required by the Ministry will be prepared by sustainable forest licensees or by other parties in accordance with the FIM and will be provided to the ministry. The FIM also provides for the sharing of certain ministry information with sustainable forest licensees.

1.1   Direction from the Crown Forest Sustainability Act

Sections 68, 20 and 21 of the CFSA provide direction for the framework and content of the FIM.

Subsection 68(1) of the CFSA requires the Minister to prepare the FIM. Subsection 68(6) of the CFSA sets out the types of information that the FIM may contain:

> *The Forest Information Manual may contain provisions respecting information systems, inventories, surveys, tests and studies that may be*

required by the Minister in respect of Crown forests and respecting information to be provided to the Minister in respect of Crown forests.

Sections 20 and 21 of the CFSA set out requirements for sustainable forest licensees to collect and provide the Ministry with specified information in accordance with the FIM. Sections 20 and 21 of the CFSA also set out how the Ministry may treat information obtained from sustainable forest licensees. For example, under section 20, sustainable forest licensees are required to conduct inventories, surveys, tests, or studies. Under section 21, sustainable forest licensees are to provide information in accordance with the FIM required for the purpose of forest management planning or ensuring compliance with the CFSA and its regulations.

Subsection 20(1) of the CFSA states:

> *The Minister may require the holder of a forest resource licence to conduct inventories, surveys, tests or studies in accordance with the Forest Information Manual for the purpose of forest management planning or ensuring compliance with this Act and the regulations.*

For the purposes of the FIM, inventories, surveys, tests, or studies may also include inspections, assessments, reports, samples, investigations, or any similar functions related to collecting data and information about forests. The Ministry may request that information about forests be collected from other inventories, surveys, tests, or studies be provided to the Ministry as directed in subsection 68(6) of the CFSA.

Subsection 20(2) of the CFSA states:

> *If a licensee fails to conduct the inventories, surveys, tests or studies as required, the Minister may cause them to be conducted, and the licensee is liable to the Minister for all costs associated with the conduct of the inventories, surveys, tests or studies.*

All costs of conducting the inventories, surveys, tests, or studies as set out under the FIM, are the responsibility of the sustainable forest licensee. If these requirements and responsibilities are not fulfilled, the Ministry has the authority to cause the

inventories, surveys, tests, or studies to be conducted and the sustainable forest licensee is then liable to the Ministry for all associated costs.

Subsection 21(1) of the CFSA states:

> *The Minister may require the holder or former holder of a forest resource licence to provide the Minister with information in accordance with the Forest Information Manual for the purpose of forest management planning or ensuring compliance with this Act and the regulations.*

The FIM sets out the information a sustainable forest licensee will provide the Ministry that includes information created or used in information systems or created by the requirement to conduct inventories, surveys, tests, or studies, in accordance with subsection 68(6) or section 20 of the CFSA. Circumstances of non-compliance in providing information set out in the FIM are subject to, and will be dealt with, in accordance with Part VII of the CFSA.

Subsection 21(2) of the CFSA states:

> *The Minister may deal with information obtained under this section as if the Minister had created the information.*

The information received by the Minister in accordance with FIM will be treated as if the Minister had created the information.

1.2   Ministry's Right to Deal with Information

The Ministry must be able to deal with information about forests that has been provided to the Ministry in accordance with the FIM. The Ministry must have easy and unfettered access to information about this resource and be able to make this information available to, and accessible by, First Nation and Métis communities and the public under the Open Government License - Ontario (https://www.ontario.ca/page/open-government-licence-ontario). The Ministry must be able to use this information and related works to meet the purpose of the CFSA and to fulfill their obligations under the Act.

1.2.1 Information Created and Provided to the Ministry

Pursuant to section 21 of the CFSA, the Ministry may deal with information provided in accordance with the FIM as if the Ministry had created the information. Accordingly, the Ministry has an unrestricted right to use this information without any approval from or notice to any third party. The planning inventory is an example of information that will be created and provided by sustainable forest licensees in accordance with the FIM. The Ministry's right described above also applies to information supplied to the Ministry by third parties on behalf of sustainable forest licensees for the purpose of fulfilling their information requirements under the FIM.

The provider of the information supplied in accordance with the FIM will continue to enjoy any rights that it may have in the information, except to the extent of the rights granted to the Ministry under the CFSA.

1.2.2 Information Created and Provided by Ontario

The King's Printer for Ontario holds and administers copyright and intellectual property rights for information owned by Ontario and certain information obtained by the Ministry in accordance with the FIM. Ontario asserts exclusive copyright of information and related works that are created by Ontario using information obtained by the Ministry in accordance with the FIM.

Ontario owns and asserts exclusive copyright on information that the Ministry creates and provides to sustainable forest licensees. Base information (for example, lakes, rivers, and provincial/municipal transportation routes) is an example of information that Ontario creates and maintains. The Ministry provides this base information to sustainable forest licensees but retains sole ownership and copyright of this information. Sustainable forest licensees may use this information for the purpose of fulfilling their licence obligations in accordance with the CFSA and its regulations, or as determined by the King's Printer for Ontario.

The Ministry policy permits the provision of a base data user's licence for the use and further distribution of base data royalty-free. Sustainable forest licensees receiving base data set out in the FIM, and that have requested in writing and received, a base data user's licence, may use base data for purposes beyond forest management planning and compliance with the CFSA. The detail of this privilege and permitted data use is set out in the FIM Base and Values Technical Specifications.

1.2.3 Source Information

The Ministry has responsibilities for auditing, identifying, confirming, monitoring, reporting, evaluating, and approving information set out in the FIM. In meeting this obligation, the Ministry may require access to the source data, records and information used to create and provide information in accordance with the FIM for the purpose of identifying or confirming the quality and accuracy of the information provided. Given reasonable notice, sustainable forest licensees will grant access to source data, records, and information upon request by the Ministry.

Ontario will not claim ownership, copyright or intellectual property rights to source data, records and information that are created or acquired by sustainable forest licensees and are accessed by the Ministry. Copyright and ownership of this information remains with the sustainable forest licensee.

Source data, records and information may include, but are not limited to:

(a) Remotely sensed data and imagery (for example, LiDAR, satellite imagery);
(b) Maps;
(c) Surveys;
(d) Tests;
(e) Studies;
(f) Inspections;
(g) Past and current records;
(h) Pre- or post-operational field cruises;
(i) Permanent or temporary sample plots; and
(j) Any data or information that has been collected and used to create, or support the creation of, information set out in the FIM.

Ownership and copyright of source information may be held by a third party external to the sustainable forest licensee. The Ministry will take into consideration the costs of production, and copyright obligations affecting the sustainable forest licensee or other parties, in making decisions regarding requests for access to, or use of source information.

If mutually agreed, the sustainable forest licensee could provide source data if it is the most economical and practical means of providing access. In these cases, ownership and copyright of source data remains with the sustainable forest licensee.

1.2.4   Licence Transfers, Surrenders and Cancellations

Where a Sustainable Forest Licence (SFL) is transferred under section 35 of the CFSA or where a SFL is surrendered under section 35.1 of the CFSA, or where a SFL is cancelled under section 41.1 of the CFSA, the holder or former holder of that forest resource licence, a company or entity that is under common ownership, management or control as the holder or former holder of that forest resource licence, a court appointed officer (for example, a monitor, receiver, bankruptcy trustee, or chief restructuring officer) or a person appointed by a lender to the forest resource licence holder (for example, a receiver or receiver-manager), as the case may be, will provide the Ministry upon request any information relating to meeting requirements of Parts B, C and D of the FIM, including:

(a) approved or delivered products;
(b) supporting materials, work in progress or completed work that has not yet been provided to the ministry;
(c) the other material or information products required to support forest management planning and ongoing harvesting and renewal programs; or
(d) agreements for ongoing or planned forest management activities.

The Ministry may request the assistance of any of the persons or entities described above to obtain any of the information described in this Section if that information is in the custody or control of another person or entity.

1.3 **Intellectual Property Rights, Freedom of Information and Protection of Privacy Act and Classified Data**

Intellectual property is the expression and/or organization of ideas, data, and information, and the rights that protect it. Intellectual property rights are protected by mechanisms that include copyright, patents, trademarks, and other forms of intellectual property protection. Examples of some mechanisms that government uses to protect intellectual property rights are trademarks, such as the stylized trillium symbol; and copyright statements, such as "© King's Printer for Ontario" that appear on government publications, maps, databases, research findings, and photographs.

Access to information and the protection of privacy of individuals associated with information set out in the FIM are governed by FIPPA.

FIPPA has two primary purposes:

(a) To provide a right of access to information under the control of institutions in accordance with the principles that:
   a. information should be available to a person, group of persons, or organization;
   b. necessary exemptions from the right of access be limited and specific; and
   c. decisions on the disclosure of government information should be reviewed independently of government.
(b) To protect the privacy of individuals with respect to personal information about themselves held by institutions, and to provide individuals with a right of access to that information.

Access to information set out in the FIM may be limited in some instances by the Ministry's Protection and Distribution of Provincially Tracked Species Data Policy set out in Part A, Section 1.3.1.

The Ministry determines whether information obtained in accordance with the CFSA can be made available to a person making a FIPPA request. In making these determinations, the Ministry will comply with the FIPPA. Access decisions made by

the Ministry may be appealed by the requestor or the affected party (for example, sustainable forest licensee or other party) to the Information and Privacy Commissioner of Ontario.

In addition, the Ministry may restrict access to certain information that, if made available, could cause harm or threaten the existence, integrity or health of a value (for example, archaeological sites, species at risk).

1.3.1   Ministry Classified Data

The Ministry supports open, easy and equitable access to its information and intellectual property. However, protecting classified data and information is a necessary and valid component of the Ministry's mandate.

The Corporate Policy on Information Sensitivity Classification and the Information Sensitivity Classification Guidelines are used by the Ministry to assign a sensitivity classification to its data. This policy and guidelines cover the management of all data and information created by the Ontario Government.

Four possible sensitivity classifications exist – high sensitivity, medium sensitivity, low sensitivity and non-sensitive (that is unclassified).

This classification ensures that information is created, acquired, updated, handled, used, transmitted, transported, filed, stored, and destroyed in a manner appropriate to its sensitivity. These security measures ensure the integrity of all records; protect sensitive information from unauthorized access, disclosure or use; and protect valuable information from damage or loss.

The Ministry acknowledges that while classified data will have restrictions on access, this data may be made available for specific purposes on a "need to know" basis to public and non-public organizations to meet the Ministry's mission of sustainability of resources. Classified data features will be encountered by the Ministry and sustainable forest licensees in managing, accessing, harvesting and renewing forest

resources. Preparing FMPs and conducting forest operations meets the "need to know" principle.

The sustainable forest licensee will, along with the Ministry, ensure that classified data features are protected in forest management planning and in conducting forest operations. Detailed direction on classifying, accessing and using sensitive provincially tracked species data is given in the Ministry's Protection and Distribution of Provincially Tracked Species Data Policy. Additional guidance on the use and display of classified values in forest management planning is given in the FIM Base and Values Technical Specifications, the FIM Forest Management Planning Technical Specifications and the FIM Annual Work Schedule Technical Specifications.

Medium sensitive data is only accessible to the sustainable forest licensee and the Ministry through the issue of access privileges from the data custodian (that is section or branch within the Ministry that has stewardship and management responsibility for data). This privilege is usually obtained through participation in data sensitivity training offered by the Ministry. Data sensitivity training may be specific to particular data sets or groupings of data.

1.3.2   Organization of Information

The FIM sets a minimum standard for the organization and quality of data to be exchanged between the sustainable forest licensee and the Ministry. The organization and quality of information, or the infrastructure and the resources needed to update and maintain information, may differ significantly among sustainable forest licensees. The FIM does not set out how a sustainable forest licensee will organize its data or information for their own purposes. The sustainable forest licensee may organize and maintain data or information in whatever form they need, as long as they provide the mandatory information set out in the FIM. The sustainable forest licensee may provide the Ministry with information products in addition to those set out in the FIM. If the sustainable forest licensee is providing the Ministry with information beyond what is required in the FIM and if the

information is confidential and disclosure is likely to cause a harm set out in section 17 of FIPPA, the sustainable forest licensee should identify that information either in a cover letter or by noting this on the documents provided to the Ministry. The Ministry will respect the intellectual property rights of sustainable forest licensees or other parties about their organization of data or information.

1.4   Procedure to Resolve Information Issues

The procedure described in this section may be applied to resolve issues between the sustainable forest licensee or other parties and the Ministry regarding requests for information or requirements for information deemed in accordance with the FIM. This procedure is specific to matters related to the FIM and the exchange of information and will not be confused with, or used as, an alternative mechanism to the issue resolution procedure set out in the FMPM, Part A, Section 2.4.

This procedure may be applied, but is not limited in application, to the following situations:

(a) requests for different or additional information created by a sustainable forest licensee that are intended to meet the mandatory information requirements set out in the FIM;

(b) requests for information from the Ministry made by sustainable forest licensees or other parties that are deemed in accordance with information set out in the FIM;

(c) requests for access to source data, records and information;

(d) requests for supporting records and information not described by information in the FIM, but that contain information about forests or that are required for the purpose of forest management planning or ensuring compliance with the CFSA and its regulations; or

(e) any issue or dispute regarding the information requirements set out in the FIM.

The issue should initially be dealt with and, where possible, resolved between the initial parties involved. Most information requests will be related to carrying out the business of forest management planning at the local level. The concerned party may

be a representative of a sustainable forest licensee, another party, or the Ministry. The concerned party will comply with the following procedure to ensure that the issue has been dealt with fairly, fully, and promptly.

1. The concerned party will identify the issue, provide sufficient detail about how the information request affects their operations, and offer a proposed solution, in writing, to the sustainable forest licensee or a Ministry contact (for example, District Supervisor). The sustainable forest licensee, the Ministry contact and the concerned party (that is when not one of these two parties), will meet to discuss the issue and attempt to resolve it. The sustainable forest licensee and the Ministry contact may each choose to involve an information management specialist or information systems person employed by their respective organizations to assist with any technical discussions related to the information request or issue. If these discussions do not produce a resolution, either the sustainable forest licensee, the Ministry contact, or the concerned party may communicate the issue, in writing, to the appropriate Ministry district manager or regional director.
2. The Ministry district manager or regional director arranges and attends a meeting of the sustainable forest licensee, the Ministry contact and the concerned party. The Ministry district manager or regional director may choose to involve other specialist or positions from each respective organization to assist with technical discussions.
3. The Ministry district manager or regional director provides a resolution to the issue normally within 21 days of receipt of those submissions and provides a copy of a written resolution, with reasons, to the affected parties. Written submissions from all parties will be maintained on record by the parties involved.
4. All documentation resulting from the Ministry review will be maintained as reference and will be used for future reference and consideration when resolving other information issues through this procedure.

The Ministry district manager or regional director develops appropriate rationale to support a resolution or decision at each stage in the issue resolution procedure and considers the following factors as appropriate:

(a) the relevance and importance of the information request to the purpose of forest management planning or ensuring compliance with the CFSA and its

regulations. If the information request does not satisfy this test, then the request for information is not valid;

(b) the sensitivity of the information requested (that is if released would it pose a threat to the existence, integrity, and health of a value, including land uses);

(c) the implications and provisions of the FIPPA, in terms of protecting the interests of the party providing the information and the institution (that is government) in control of the information;

(d) the copyright implications (for example, infringements) on the creator or owner by releasing the requested information. For example, copyright may restrict the ability of a sustainable forest licensee to provide information when they have purchased a copy of, or access rights to, satellite imagery. This factor may also apply to the Ministry. Crown copyright is administered by the King's Printer for Ontario, who will be involved in making decisions that affect copyright of information owned by the Crown or information obtained by the Ministry in accordance with the FIM;

(e) the potential uses of the information requested. Where possible, discussions regarding the use(s) of the information with the party requesting it should be encouraged in an open and consultative fashion;

(f) the costs of collecting and producing the information and making the information available to the party requesting it. The Ontario Government's policies on managing, pricing, and distributing government intellectual property may provide guidance;

(g) the degree of access needed to meet the information request (for example, should the information be provided in its original form, in digital or paper form, provided in a lesser or more convenient form, made available for viewing, or returned to the sustainable forest licensee after the ministry has had an opportunity to view it);

(h) available records from previous cases where similar issue resolution procedures have been applied to ensure consistency with previous decisions made by the ministry; and

(i) any other factors or unique circumstances that may influence decisions respecting information requests or information issues.

1.5   Access to Information

The CFSA and it's regulated manuals support an open and consultative planning process that is transparent to First Nation and Métis communities and the public. A person, group of persons, or organization will normally be provided access to all

information set out in the FIM, unless otherwise determined by the Ministry in consideration of sensitive information about resource features and values, copyright restrictions, proprietary restrictions, or the FIPPA.

A person, group of persons, or organization that requests access to information about forests will be handled by the Ministry in accordance with its policies relating to data access and sharing and the direction set out in the FIM. Information that has been obtained by the Ministry in accordance with the FIM may include paper and digital information products (for example, maps, audits, reports, documents, tables, computer files or records, digital spatial information, databases, model runs).

Access to information or provision of information to satisfy a person, a group of persons, or an organization's request, may be through open houses, appointments, internet publication and viewing or other such arrangements that allow quick and efficient access to information.

The Ministry may determine the conditions where access to information is provided.

1.5.1   Information Sharing

The Government of Ontario promotes an Open by Default approach to the proactive release of data. It promotes data management practices which enable the proactive and ongoing release of government data which includes the FIM prescribed data and information in a manner that is consistent with existing legal obligations, restrictions and requirements, including the Open Government Licence - Ontario, ARA, the FIPPA, and the *Accessibility for Ontarians with Disabilities Act, 2005* (AODA) or other applicable legislation.

To meet the requirements of the AODA, and more specifically the Integrated Accessibility Standards Regulation (IASR), the Ministry will provide sustainable forest

licensees with guidance and direction in the preparation of the AODA compliant information products.

As technology advances and offers practical improvements for the production of the AODA compliant FIM information products, the FIM technical specifications will be updated to reflect these advancements.

1.6   Records Management

Information provided under the FIM, irrespective of media (for example, paper, digital files), will be managed and maintained in accordance with the ARA:

(a) to ensure that the public records of Ontario are managed, kept and preserved in a useable form for the benefit of present and future generations;
(b) to foster government accountability and transparency by promoting and facilitating good recordkeeping by public bodies; and
(c) to encourage the public use of Ontario's archival records as a vital resource for studying and interpreting the history of the province.

Every public body prepares a records schedule that sets out, for each class of public records that they create or receive, the length of time the records will be retained and the disposition of the records at the end of their retention period. Every public body retains and transfers or otherwise disposes of their public records in accordance with the public body's approved records schedule.

This includes the information set out in the FIM, including draft and final FMPs and associated supplementary documentation, FMP extensions, FMP amendments, AWSs, and annual reports. Record keeping activities for the information set out in the FIM and the ARA are the responsibility of the Ministry.

Additional information requirements set out in specific guides, protocols or directives will be managed in accordance with the ARA. Information to support Independent Forest Audits (IFA) is an example where the sustainable forest licensees and the Ministry have a duty to retain and provide the information requirements

listed in the Independent Forest Audit Process and Protocol (IFAPP), including its appendices.

The sustainable forest licensees will retain source information or other documents in cases where the information is not set out in the FIM or provided to the Ministry.

Access to recorded information is to be ensured in accordance with the requirements of the FIPPA.

1.7 Protocol for Information

The Ministry recognizes the efforts and costs of sustainable forest licensees or other parties to create and maintain certain information set out in the FIM. In acknowledgement of these efforts, this section discusses:

(a) recognition of sustainable forest licensees in creating information set out in the FIM;
(b) disclosure of information use to sustainable forest licensees regarding third party use and users of information;
(c) the original source of information set out in the FIM;
(d) data sharing and data exchange agreements;
(e) information set out in other regulated manuals; and
(f) information partnering and innovation.

1.7.1 Recognition for Creating Information

Sustainable forest licensees may provide a logo that gives credit and recognition of their company, on any information submitted to the Ministry. The logo may include a symbol and a name relevant to the sustainable forest licensee who provided the information. The Ministry may also apply its logo, and the government copyright label, to the information or information product.

The logo provided by a sustainable forest licensee will not, in any way, affect how the Ministry may use the information obtained in accordance with the FIM.

1.7.2 Disclosure of Information Use

The Ministry determines how information obtained in accordance with the FIM may be used. The FIM does not restrict the Ministry's use of information obtained in accordance with the CFSA and its regulations. Sustainable forest licensees or other parties are not restricted as to how they use information that they create and provide to the Ministry in accordance with the FIM, except as set out in FIM, Part A, Section 1.2.

The Ministry is not required to disclose the use of information obtained in accordance with the FIM. Sustainable forest licensees are not required to disclose their use of information that they create and provide to the Ministry in accordance with the FIM.

The Ministry complies with the FIPPA regarding the disclosure of information obtained by the Ministry in accordance with the FIM, and the disclosure of related information pertaining to the use or users of that information.

1.7.3   Original Source of Information

Information set out in the FIM is submitted to the Ministry via the information management system (see Part A, Section 2.2). The information submitted and residing in the information management system is considered to be the authoritative source of the FIM required information.

1.7.4   Data Sharing and Data Exchange Agreements

Existing data sharing or exchange agreements or memoranda of understanding or any parts of agreements that address an exchange or provision of the information set out in the FIM will not supersede the requirements and standards for information set out in the FIM.

The FIM has no effect on information sharing and exchange arrangements or agreements that deal with information not in respect of forests or outside the purpose of forest management planning or ensuring compliance with the CFSA and its regulations.

1.7.5 Information Set Out in Other Regulated Manuals

The information requirements of the other manuals mandated by the CFSA (that is the Forest Management Planning Manual, the Forest Operations and Silviculture Manual, and the Scaling Manual) are considered to be information set out in the FIM. As such, the requirements to provide the information identified in the other CFSA manuals will be administered in accordance with the FIM. Instances of non-compliance in providing information set out in the FIM, or information requirements of the other CFSA manuals, are subject to, and will be dealt with according to, Part VII of the CFSA.

1.7.6 Information Partnering and Innovation

Information management is a costly and necessary investment. One of the principles applied in the development and implementation of the FIM is to allow, promote, and foster innovation with respect to the information needed to meet the purpose of the CFSA and its regulations. Sustainable forest licensees, the Ministry, or other parties, as identified in the FIM, will prepare and provide the information set out in the FIM. Sustainable forest licensees, the Ministry, and other parties are free to establish cooperative arrangements and partnerships to enhance the collection, creation, quality, use, or provision of information for forest management planning or to ensure compliance with the CFSA and its regulations.

2.0   Meeting Information Requirements

2.1   Responsible Parties

Information requirements in the FIM support the preparation, approval, implementation, monitoring, and reporting of FMPs and forest operations. Information products set out in the FIM are provided predominantly by:

- Sustainable forest licensees; and
- the Ministry.

The definitions given in this section provide the scope and range for all parties involved in providing the FIM requirements. The differences among the responsible parties are, in some cases, very subtle. To simplify the FIM, responsible parties are categorised into two distinct types: the sustainable forest licensee and the Ministry. Sustainable Forest Licence (SFL) holders or other licence holders (for example, forest resource licence, enhanced forest resource licence) with forest management responsibilities will be generalized as the sustainable forest licensee. For the purpose of the FIM, the sustainable forest licensee is referenced as the party responsible for preparing and implementing FMPs.

2.1.1   Sustainable Forest Licensees

Sustainable forest licensees will prepare FMPs for designated management units. On management units that are not managed under an SFL, the Ministry or another designated party prepares and implements a FMP. Where the requirements of the FIM refer to the sustainable forest licensee, those requirements apply to the Ministry or the party responsible for the preparation and implementation of a FMP.

Sustainable forest licensees also schedule and conduct forest operations in accordance with an approved FMP, and report on those operations. As such, sustainable forest licensees will provide the information set out in the FIM. Where the requirements for information identify sustainable forest licensees as the responsible party, those requirements apply to the holder of a licence issued under section 26 of the CFSA.

Sustainable forest licensees will secure information set out in the FIM from overlapping licence holders who are issued forest resource licences in accordance with section 38 of the CFSA. Sustainable forest licensees are expected to enter into an agreement with overlapping licence holders regarding the provision of information set out in the FIM in accordance with section 8 of CFSA Regulation 167/95.

2.1.2   Ministry of Natural Resources and Forestry

The Ministry provides information, such as base information, values information or forest resources inventory information, to SFL holders. Where the requirements for information identify the Ministry as the responsible party, those requirements may apply to the Ministry in general or may apply specifically to an Ministry division, branch or section.

2.2   Information Management System

Information set out in the FIM will be exchanged and made accessible via an information management system. The FIM recognizes the Natural Resources Information Portal (NRIP) as the means to transfer and store the FIM data between the Ministry, and sustainable forest licensees. The information management system will also be used as one of the means to provide information access to other First Nation and Métis communities, the public, and other stakeholders.

The information management system is continually reviewed, updated and evaluated. Additional functionality is added to increase efficiency, enhance ease of use and to meet emerging business needs.

The information management system is the repository for approved copies of the FMP, the annual work schedule (AWS) submissions, and for annual report submissions for the management unit. The information management system is also the repository for FMP extensions, amendments, revisions, changes or appended documents. The approved versions of the documents data products (for example,

tables, documents, spatial data layers) referenced above and any of the submissions referenced above are made available to First Nation and Métis communities, the public, and other stakeholders through the Ontario Government Website information management system and are retained per the ARA.

In developing FMPs, FMP extensions, or annual work schedules, and in making amendments or revisions, it is necessary for sustainable forest licensees and the Ministry to exchange information, review proposals and share data. The information management system can be used for this type of exchange in advance of the submission of the final FMP, annual work schedule, amendment or revision. Without exception, the approved or submitted information products (for example, FMP, annual work schedule, FMP extension, amendment or revision) will be exchanged using the information management system as directed by the Ministry. The Ministry completes the approval of the submission and publication on the information management system.

The required forest management planning information products developed as described in the FIM technical specifications, will be submitted through the information management system which facilitates consultation with First Nation and Métis communities, the public, and other stakeholders.

Use of the information management system will assist in meeting obligations of complying with records management requirements of the ARA for information set out in the FIM. The information management system is a repository for current versions of the FIM, the FIM technical specifications, training material related to the FIM and the information management system, and other forest management planning and information management direction.

The information management system is managed and maintained by the Ministry and support is offered through the Ministry. The information management system is generally available 24 hours a day, seven days a week. Users include the Ministry

staff, sustainable forest licensee personnel, Independent Forest Auditors, forest consultants, other stakeholders, the public, and First Nation and Métis communities and, the public, and other stakeholders.

The information management system has functionality to ensure the efficient management and transfer of information.

Only in exceptional cases or circumstances where internet line speeds, reliability of power supply, or other limitations could affect efficient and economical transfer of data, parties may mutually agree to provide the information on alternate media or methods. If sensitive or classified data are included in these transfers, encrypted devices will be used. In these instances, it is still mandatory for responsible parties to enter a submission record into the information management system indicating that provision of the information is by alternate media for information products set out in the FIM. The Ministry subsequently will receive the data and acting on behalf of the responsible party will load this data to the information management system and this information will be validated.

2.3   Roles and Responsibilities

The roles and responsibilities of sustainable forest licensees and the Ministry are set out in the FIM for each information product. The roles and responsibilities for providing information may be further defined in the FIM technical specifications.

Sustainable forest licensees and the Ministry have separate and distinct responsibilities in meeting information product requirements (for example, the Ministry prepares values maps; licensees prepare the planning inventory), or they share responsibilities for some information requirements (for example, annual report tables). The FIM sets out the information that the sustainable forest licensees or the Ministry will provide and the minimum standards that will be met.

In some circumstances, the terms of reference and/or project plan associated with the preparation of a FMP may provide direction on roles and responsibilities. The

roles and responsibilities may be adapted to best meet the circumstances of the management unit and maintain the established relationships between the sustainable forest licensee and the Ministry.

2.4 Timelines and Conditions

Many of the timelines for providing information are set out in the FMPM (for example, management unit annual reports are due November 15 each year). In cases where only an implicit timeline is provided in the FMPM (for example, the sustainable forest licensee will inform the Ministry of the discovery of a new value), the FIM or the associated FIM technical specifications will set out the timeline associated with the information product.

In some circumstances, timelines may be from the terms of reference and/or project plan associated with the preparation of a FMP.

3.0   Forest Management Mapping

The FIM sets out that the sustainable forest licensee and the Ministry will portray mapped information to assist First Nation and Métis communities and the public's understanding of forest management planning. This information will be standardized in accordance with the FIM technical specifications. FMPs and the associated mapped information have an audience beyond local stakeholders. Standardization of mapped information is crucial in supporting the forest management planning process (for example, consultation).

3.1   Requirements and Standards

Mapped information is updated and enhanced to reflect the input received and decisions made throughout the forest management planning process. This updated information will be submitted or made available to support consultation or other forest management planning processes.

Mapping requirements will be continually examined for efficiency. Where possible, emphasis on meeting the information requirement, consultation or business requirement will be through the use of submitted digital spatial data.

The mapping products can be grouped into the following categories:

- Strategic, Tactical and Operational Planning;
- Annual Operations;
- Management Unit Annual Reporting; and
- Other Mapped Information Used for Forest Management Planning Purposes.

Not all the mapped information that may be used during the preparation or implementation of FMPs is detailed in the FIM technical specifications. Other mapped information may also be set out by guides and other manuals relevant to the preparation and implementation of the FMP.

This section together with the FIM technical specifications will set out the format and content of mapping products, including mandatory information and mapping requirements, that are required by the FIM.

3.2 Roles and Responsibilities

The Ministry and sustainable forest licensees share responsibility for preparing mapping products to support forest management planning. The sustainable forest licensee will provide the information required to prepare mapped products. The Ministry will provide all mapped values information products. The sustainable forest licensee and the Ministry will prepare and provide mapped information to support consultation.

The FMPM indicates that values information will be continually updated as information is assembled during the production and implementation of the FMP. At each specific consultation stage of the planning process, where significant changes to the values information data have occurred, updated mapped values information will be available to First Nations and Métis communities and the public.

3.2.1 Sensitive and Confidential Map Information

In most cases, the requirements for the mapping products and related information set out in Part A, Section 3.1 are part of the open consultation process for forest management planning on forests. However, some mapping products and related information may contain sensitive or confidential information that, if made available, could threaten the existence, integrity, or health of natural resources or uses (for example, values), or may expose confidential or personal information. The Ministry may make decisions regarding the portrayal of sensitive or confidential information in accordance with Part B, Section 3.1.4 and 3.1.5.

3.3 Timelines and Conditions

Forest management planning mapped information will be submitted as described by the FMPM and the FIM technical specifications. The timelines for the provision of

forest management plan mapped information are directly related to the information that will be available for consultation processes set out in the FMPM.

4.0   Forest Management Documentation

To improve the efficiency in production, dissemination and storage of forest management documentation, the FIM provides for the submission of these documents in an accessible digital format.

The sustainable forest licensee will meet consultation requirements of the forest management planning process by providing information in an accessible digital format. The Ministry makes forest management documentation (for example, text, tabular and mapped information) available on the information management system as an efficient means of carrying out consultation.

4.1   Requirements and Standards

All forest management documentation (for example, FMPs, FMP extensions, amendments, AWSs, revisions, annual reports, and changes to values documentation) will be submitted in an accessible digital format.

The exchange format for the forest management documentation will be a common and widely used format that will aid in web publishing of these documents in an accessible format and permit an efficient exchange. The detailed technical standards are given in the FIM Forest Management Planning Technical Specifications, the FIM Annual Work Schedule Technical Specifications and the FIM Annual Report Technical Specifications. These standards/specifications include naming conventions for the series of files that will be necessary to complete a submission.

The title, certification and approval pages are required by the FMPM. The FIM technical specifications prescribes the format for the title certification and approval pages, and the process of meeting these requirements when submitting electronic documentation.

Preliminary versions of forest management plan documentation required for consultation opportunities, as described by the FMPM, may or may not be exchanged in a digital format.

The sustainable forest licensees and the Ministry will exchange components of this consultation documentation in advance of the actual FMPM timelines to permit paper copy production where required, or to permit incorporation into other documents.

4.2   Roles and Responsibilities

Submission of the forest management documentation is the responsibility of the sustainable forest licensee. The Ministry arranges the dissemination of, and access to, forest management plan documentation submitted via the information management system. The Ministry carries the added responsibility of managing the forest management documentation and information to ensure that the proper, official copies are accessible on the Ontario Government website information management system for the appropriate timeframes.

The sustainable forest licensees and the Ministry may make available other consultation documentation to First Nations and Métis communities and the public. Note that this additional or extra consultation documentation is not to be submitted with the draft or final FMP.

4.3   Timelines and Conditions

Forest management documentation will be submitted as described by the FMPM and the FIM technical specifications. The timelines for provision of forest management documentation are directly related to the information that will be available for consultation processes set out in the FMPM.

The Ministry produces components and provides them to the sustainable forest licensee in advance of the scheduled submission date for the information in order for the components to be incorporated into the submission.

Part B Information for the Management Direction of a FMP

1.0   Introduction

Part B of the Forest Information Manual (FIM) sets out information requirements for preparing FMPs to support:

- the development of the management direction for the FMP and
- planning of forest operations for the 10-year period of a FMP.

The information requirements include:

(a) Base information;
(b) Values information;
(c) Forest Resources Inventory (FRI) information;
(d) Forest management planning inventory information; and
(e) Operational planning information.

Section 2.0 details the requirements for the provision of base information used to support the development of FMPs, forest resources inventories and other spatial information relevant to forest management planning.

Section 3.0 details the requirements to collect, confirm, verify, provide, update, and maintain values information.

Section 4.0 details the requirements for forest resources inventory information provided by the Ministry in support of FMP development.

Section 5.0 details the requirements for forest management planning inventory information provided by sustainable forest licensees to support strategic, tactical and operational planning of forest management activities.

Section 6.0 details the requirements for operational planning information, including a series of geospatial data layers used in FMP development, review and approval.

The information in Part B is required periodically at specific stages throughout the forest management planning process and during FMP implementation, monitoring

and assessment. The terms of reference and/or project plan of a FMP will identify
the duties and responsibilities of specific planning team members to produce
strategic, tactical and operational planning information in accordance with the
FMPM and the FIM.

2.0   Base Information

Base features represent the geographic locations and descriptions of topographic, cultural, and cadastral entities of Ontario's landbase. Base features can be natural, physical features, such as lakes, rivers, and wetlands, or they can be features of human influence such as hydro lines, gas pipelines, provincial highways, roads, and railways. Base features may also include other physical and administrative boundaries such as management units, parks and protected areas, and ownership parcels that identify areas designated for legal, political, tax base, population base, land-use zoning, or management decision purposes.

Base information provides a consistent geographic foundation for:

- relating information such as forest resources inventories, wildlife habitat, ecological land classification, values, and other biological information;
- creation and maintenance of forest resources inventories;
- planning of operations such as road location, harvest layout and renewal activities;
- context and reference on maps and other information; and for area of concern planning; and
- various analytical modelling processes, such as viewshed analysis, water movement and flow analysis, road location and transportation network analysis, watershed analysis, landscape diversity analysis, harvest scheduling, and other spatial analyses that require relational analysis of geographic information.

Some base information, such as lakes, rivers, or parks and protected areas may also be treated as values information, in accordance with Part B, Section 3.0, for the purposes of forest management planning.

Requirements for base information are set out in the following sections. The detailed description, information standards, formats and other exchange parameters and procedures are provided in the FIM Base and Values Technical Specifications.

2.1 Requirements and Standards

The provision and sharing of base information is integral to the preparation of a FMP and the conducting of forest operations. The FMPM sets out the need for base information for the preparation of information products, defining areas of concern, providing databases, conducting analyses and preparing the FMPs.

The Ministry provides licensees with base information in digital form for the purpose of forest management planning. Base information will be provided to sustainable forest licensees in a digital format, and in the agreed-to exchange format, set out in the FIM Base and Values Technical Specifications. Licensees may request base information at any time. The Ministry provides the requested information in accordance with the timelines and conditions set out in Part B, Section 2.3. Classified base information is only provided as per Part A, Section 1.3.1.

In accordance with the FIM, licensees will update and provide changes to base information as encountered in planning or conducting operations (for example, newly constructed roads, submitted with management unit annual reports as an update to base information).

Base information, from Land Information Ontario (LIO), is used in forest management planning and provided to licensees by the Ministry. LIO data is obtained from a variety of sources. Base information stored in LIO is maintained in the Ministry's values information system. Base information is also provided to LIO by other government agencies, non-government organizations and the private sector each of whom use a variety of geographic information systems and tools. Data in LIO is managed in several geographic (that is thematic) layers or data classes.

The Ministry determines, in consultation with sustainable forest licensees, the data classes and the attributes needed to support forest management planning and compliance with the CFSA. The Ministry also consults sustainable forest licensees on

suitable data exchange formats for base information. Detailed standards for base information are set out in the FIM Base and Values Technical Specifications.

Base information may be provided in the form of a complete layer for the management unit. Also, it may be provided as a complete set of information (that is all layers) or as individual layers.

2.2   Roles and Responsibilities

The Ministry maintains and updates base information used in forest management planning in the Ministry's values information system and LIO. The Ministry also provides the best available information to sustainable forest licensees.

The sustainable forest licensee will provide updates to base information through the submission of information products set out in the FIM.

Planning teams will determine and use the most current base information.

2.3   Timelines and Conditions

The Ministry provides sustainable forest licensees with base information to support FMP development and AWS preparation. The Ministry provides sustainable forest licensees with base information on an annual basis and on request in accordance with the FIM Base and Values Technical Specifications. If the Ministry cannot meet the timelines set out in the FIM Base and Values Technical Specifications, the Ministry will advise the sustainable forest licensee.

The FIM Base and Values Technical Specifications will be revised and published periodically to reflect updates to the numerous digital geospatial layers that contain base information, and to incorporate additional layers/features when necessary.

If a sustainable forest licensee requests the Ministry to provide base information in another form or format than set out in the FIM technical specifications, the Ministry will use best efforts to accommodate the request.

3.0   Values Information

A value is a natural, cultural, First Nation or Métis attribute or use of land, including all lakes and streams, which must be considered in forest management planning.

No listing of values can be definitive. For the purposes of forest management planning, it can be any feature, entity or forest condition that could be impacted by forest operations. Base features can also be considered values (for example, lakes). Values considered in forest management planning varies by management unit, landscape features, and stakeholders involved.

Examples of values include cross-country ski trails, spawning areas, moose calving sites, raptor nests, seed orchards, tourism outpost camps, registered trapline areas, canoe routes, archaeological sites, and evaluated wetlands.

The consideration or identification of values does not equate to values protection or prohibition of operations. FMPs provide operational prescriptions and conditions to protect identified values. These prescriptions and conditions may include reserves (that is prohibition of operations), modified operations (that is specific conditions or restrictions on operations) or regular operations (that is in accordance with silvicultural ground rules).

Values information can be provided by any person or party at any time. The consultation process set out in the FMPM, Part A, supports the collection and provision of information about values at any time during the development and implementation of a FMP.

Information about values normally comes from the Ministry or other government staff, sustainable forest licensees and their operators, First Nation and Metis communities, non-government organizations, third parties, other resource users, and the public.

The quality of values information is related to the method used to identify and collect the information. The number of identified and confirmed values is expected to increase, and the quality of information about those values is expected to improve, with each successive FMP.

The FIM Forest Management Planning Technical Specifications lists the variety of values to appear on values maps in support of forest management planning.

The FIM does not categorize or explicitly define groupings or types of values. For the purposes of the FIM, values information requirements apply to all known values.

3.1 Requirements and Standards

Values information is an important input to forest management planning and operations. The FMPM sets out the purpose of values information in the development of FMPs.

The FIM Forest Management Planning Technical Specifications lists the variety of values to be portrayed in support of forest management planning. The FIM does not categorize or define groupings or types of values. For the purposes of the FIM, values information requirements apply to all known values.

A value is considered to be a known value when sufficient information to describe its geographic location and its basic features exist. Known values will be considered in forest management planning. The Ministry determines if a value can be treated as a known value based on the available information and in consideration of the standards set out in FIM Base and Values Technical Specifications.

3.1.1 Requirements for the Ministry

The Ministry collects information about values in accordance with the standards set out in the FIM and the FIM Base and Values Technical Specifications. Further, the Ministry gives priority to those values that are potentially affected by forest operations for the FMP under preparation.

The Ministry provides the best available values information to planning teams for forest management planning purposes and made available throughout the planning process. The maps and information will include the values within the management unit for the FMP that is being written, and values that are adjacent to the management unit that may be affected by forest operations.

Values that are considered in forest management planning are supported by further information gathered or created from field visits, inventories, surveys, tests, or studies.

The Ministry enters and updates values information received from sustainable forest licensees and other sources into the Ministry's values information database (that is using LIO Editor) housed in a corporate data repository or information management system (that is Land Information Ontario Data Warehouse, GeoHub).

The Ministry may enter data collection arrangements with sustainable forest licensees or third parties for the purpose of obtaining values information or for confirming existing values information.

3.1.2   Requirements for Sustainable Forest Licensees

Sustainable forest licensees will identify information for new values and corrections to information about known values that are encountered during the implementation of forest management operations and provide this information to the Ministry for values database updating and for consideration in future planning initiatives and operational activities. Sustainable forest licensees are to provide this information to the Ministry within the timelines and conditions set out in Part B, Section 3.3, and in detail in FIM Base and Values Technical Specifications.

3.1.3   Requirements for Planning Teams

Planning teams will determine and use the most current values information and determine and use updates to values information set out in Part B, Section 3.2 and Section 3.3.

3.1.4 Requirements Respecting Classified Values Information

In some cases, information about certain values such as the location and description of First Nation and Métis values, cultural heritage sites, or habitats of species at risk may be considered as classified data. Refer to Part A, Section 1.3.1 for a description of classified data. In these cases, releasing or portraying this data on maps may pose a threat to the existence, integrity, or health of those values. Classified values will not be made available or accessible to the public.

Where the availability of information could be considered as potentially detrimental to the existence of a value, the Ministry determines whether or how the value can be depicted on a values map, and the type and extent of the information that can be provided to members of the planning team and to members of the Local Citizens' Committee (LCC).

Where direction on the display of specific classified values in forest management planning is not provided in a related guide (for example, the Forest Management Guide for Cultural Heritage Values), general direction has been provided in the FIM Base and Values Technical Specifications and the FIM Forest Management Planning Technical Specifications.

Information protocols or agreements that describe conditions respecting the use or users of classified values information, or restrict the availability of classified values information, may be established with other agencies or with the Ministry's Natural Heritage Information Centre (NHIC), and First Nation or Métis communities. The planning team will ensure that sensitive information about values is protected and used in accordance with any protocols or agreements established between the Ministry, First Nation or Métis communities and other agencies.

For the purpose of preparing a FMP, the district manager appoints the members on the planning team and establishes a LCC, as described in the FMPM. The appointed members of the planning team and the LCC are considered to be agents of the

Ministry for the purpose of fulfilling their duties in relation to preparing and implementing a FMP. Consequently, they are bound by the Ministry's obligations under the FIPPA. Members of the planning team and the LCC are also bound by any protocols or agreements that the Ministry establishes with other agencies that describe the conditions that the Ministry agrees to use and protect sensitive information about values.

In the forest management planning process, planning for the protection of values normally requires the Ministry and sustainable forest licensee involvement. Therefore, the planning team or specific members of the planning team require access to information, including classified values information, to ensure that the planning of forest operations occurs in accordance with the FMPM.

If the Ministry determines that information about a value cannot be provided to sustainable forest licensees or members of the planning team, the Ministry may instead provide the boundary of the area to be protected and/or any restrictions to forest operations. In these cases, the planning team will protect the provided area through appropriate operational prescriptions and/or conditions.

3.1.5   Requirements Respecting Personal Information

Personal information is defined in Section 2 of FIPPA. The Ministry maintains personal information related to values information, such as a person's name, address, phone numbers, and other personal data associated with land use permits, trapline areas, and other licensed or recognized natural resource uses. Personal information is considered to be sensitive and will not be displayed on values maps. To do so without the individual's consent would be a violation of FIPPA and considered a privacy breach.

The Ministry collects, uses, discloses and retains personal information in compliance with the FIPPA. Where the Ministry has collected personal information (name and contact information) from an individual for a purpose unrelated to forest

management planning, the Ministry will obtain and retain the individual's documented consent to use their personal information to notify them of forest management planning activities. The Ministry determines whether this personal information relating to values can be made available to sustainable forest licensees, planning team members, or members of the LCC. The Ministry complies with the FIPPA in terms of the treatment and use of personal information related to values information used in forest management planning.

For the purpose of fulfilling their obligations in forest management planning, sustainable forest licensees, planning team members, steering committee, and members of the LCC, as agents of the Ministry, must also comply with FIPPA in the collection, treatment and use, disclosure, retention and destruction of personal information. This includes, but is not limited to:

- Collecting only personal information that the Ministry has authorized its agents to collect, directly from the individual it belongs to, and providing a notice of collection (as specified by the Ministry) to that individual;
- Using the personal information only in accordance with Section 41 of FIPPA;
- Disclosing personal information only after ensuring the disclosure is in compliance with Section 42 of FIPPA and confirming they have the Ministry's approval to do so;
- Retaining personal information securely, ensuring it is only accessible (both physically and electronically) to those individual staff/group of staff that require access to the personal information for the purpose of forest management planning activities;
- Destroying personal information in a secure manner (according to the records series) to ensure the personal information can't be recreated or reconstructed. For example, hard copy records must be disposed of in secure shredding bins or shredded by an onsite cross-cut shredder. Agents must not place documents containing personal or confidential information in recycling bins. They must keep documents awaiting shredding secure at all times; and
- Reporting a privacy breach, suspected privacy breach or privacy complaint involving the personal information to the Ministry according to the Ministry's Privacy Breach Response Protocol.

Examples of FMP related privacy breaches have included the unintentional:

- Inclusion of personal information in a published Forest Management Plan;
- Insertion of personal e-mail addresses in the "To" field instead of the "Bcc" field of an outgoing e-mail to stakeholders; and
- Inclusion of personal information in meeting minutes that were made public.

3.1.6   Standards for Values Information

The Ministry in consultation with the sustainable forest licensees determines the types of values and the attributes that support forest management planning and compliance with the CFSA. Only a subset of the Ministry's natural resources and values information are used in forest management planning. Many of the attributes maintained in the Ministry's information system relate to the collection, storage, and management of the natural resources and values database and are not used in forest management planning.

The Ministry also consults sustainable forest licensees on suitable data exchange formats (for example, shapefile, file geodatabase) for values information. Detailed standards for values information are set out in the FIM Base and Values Technical Specifications.

The standards identify the minimum information required to treat a value as a known value. This information consists of two parts: a geographic location and a basic description of each feature. Information that meets these standards is considered to be conclusive information required to confirm the presence and characteristics of a value. Information that meets these standards ensure that planning teams have sufficient background information to plan forest operations and protect the existence, integrity, and health of the value. Only known values will be depicted on values maps and considered in forest management planning.

The Ministry determines whether the available information satisfies the minimum standards and is sufficient to treat a value as a known value. The Ministry considers

recommendations by the planning team when making decisions about values or when applying the precautionary principle, set out in Part B, Section 3.4.

The standards for the geographic location of values are given in the FIM Base and Values Technical Specifications. In meeting the minimum requirements to declare a value as known, the geographic location provided by the Ministry, the sustainable forest licensee or third party should locate the value in relation to existing base features or values (for example, roads, stream-lake intersections, islands or points, township boundaries, portage trails). Location descriptions could be geographic coordinates, a reference to an attached photo or map, or reference to an accompanying digital spatial data product.

The descriptive features of a value will provide sufficient detail for planning teams to determine the appropriate operational prescriptions and conditions to protect the existence, integrity, and health of a value. The descriptive features of a value will consist of the following information:

(a) method, survey type, locational accuracy, or source of information that was used to identify and describe the value;
(b) position title or stakeholder type of person(s) who discovered, collected, and provided information about the value;
(c) date the values information was collected; and
(d) identification of the type of value, specific enough to help with the protection of the value should it be impacted by forest operations.

Meeting these minimum requirements in declaring a value as a known value serves to identify the presence of a value and to afford it protection if necessary. The Ministry may complete additional field inspections or data collection to confirm the value and to make a complete entry into the values information database (for example, LIO).

3.2   Roles and Responsibilities

This section identifies the roles and responsibilities of the sustainable forest licensees and the Ministry associated with providing, receiving, and using values information. The terms *identify* and *confirm* distinguish the roles and responsibilities of the sustainable forest licensees and the Ministry for collecting and using values information in forest management planning.

The term *identify* is used to describe the roles and responsibilities of the provider of values information. The term *confirm* is used to describe the roles and responsibilities of the Ministry with respect to acceptance and use of the information. Identification precedes confirmation.

The provider collects values information and will identify that the information collected and provided is accurate and meets the standards set out in Part B, Section 3.1. The provider could be the sustainable forest licensee, the Ministry, or a third party. Sustainable forest licensees often, during the course of operations, identify the presence of values and provide information about those values. Sustainable forest licensees will provide information about new values and corrections to information about known values to the Ministry when these values are encountered during the implementation of forest management operations. This information will be provided in accordance with Part B, Sections 3.1 and 3.3.

The Ministry confirms that the information received is accurate, meets the standards set out in Part B, Section 3.1, and is sufficient to be used to plan forest operations. That is, the Ministry determines whether a value can be treated as a known value based on assessing the available information against the standards set out in Part B, Section 3.1.

The Ministry identifies the presence of values and collects and provides information about those values. Identification of values information can occur at various times throughout FMP preparation or implementation set out by the timelines in Part B,

Section 3.3. The Ministry enters and maintains values information in the Ministry's values information database (for example, updating through the Land Information Ontario Editor), and provides updates of this information to sustainable forest licensees and planning teams in accordance with Part B, Section 3.0.

3.3 Timelines and Conditions

There are two categories of timelines for providing values information. The first category is associated with the FMP development and implementation; a continual update of values information data holdings. This timeline is set out in Part B, Section 3.3.1. The second category of timelines is associated with values encountered during active forest operations, in accordance with Part B, Section 3.3.2. The activity of value identification and confirmation is more stringent in the second category. Also, when prioritizing effort and allocation of resources, a higher priority will go to the collection of values information associated with the second category of timelines.

The timing of forest management operations that may adversely impact values determines when information about those values will be exchanged between the sustainable forest licensees and the Ministry. The timelines provided in the following sections should be viewed in conjunction with the specific timelines and details provided in the FIM Base and Values Technical Specifications.

Other guides, local agreements or protocols may also provide direction on the timing of values information sharing and exchange related to specific values or local situations.

3.3.1 Plan Development and Implementation – Values Provision Timeline

Values information is assembled as background information during the preparation of a FMP in accordance with the FMPM.

New information on values often becomes available during the FMP implementation. Where this new information identifies that values may be impacted by active operations, the Ministry provides this information as set out in Part B,

Section 3.3.2. Otherwise, the Ministry provides this new information through annual values information updates in order for sustainable forest licensees to incorporate changes into amendments or the next AWS.

Sustainable forest licensees will provide information about new values and corrections to information about known values as per the FIM Base and Values Technical Specifications.

3.3.2 *Active Operations – Values Provision Timeline*

Active operations are defined as forest management operations identified in an AWS. As per the FMPM, updated information on the location and description of values that were previously unidentified (that is new values), incorrectly located, incorrectly described, or that no longer exist, will be exchanged between the sustainable forest licensee and the Ministry.

The timelines associated with values information exchange, where active operations are involved, is provided in the FIM Base and Values Technical Specifications. The responsibilities and procedures associated with values information sharing and exchange are set out below for the two situations with defined timelines provided in the FIM technical specifications.

> **A) Sustainable forest licensee** reports a new value, corrects location or description of previously identified value, or confirms a value no longer exists
>
> Where the sustainable forest licensee identifies that new information about a value (for example, new value, changed value, non-existent value) will result in the addition or change to an operational prescription or condition, they will provide the Ministry with the necessary documentation of the change.
>
> The Ministry updates the values database to reflect this change and notifies the sustainable forest licensee when it has occurred.

The Ministry confirmation of the value no longer existing is required in instances of values associated with species at risk and where a third party is associated with the value and/or area of concern (for example, cultural heritage, tourism value).

B) The Ministry identifies a new value, corrects location or description of previously identified value, or confirms a value no longer exists

When the Ministry identifies and confirms the location and description of values previously unidentified (that is unmapped) or incorrectly located, incorrectly described, or that no longer exist, they notify the licensee.

The Ministry notification provides enough detail to allow the sustainable forest licensee to assess when operations may be impacted. Subsequently, the sustainable forest licensee notifies the Ministry of the results of their assessment (for example, timing of the operations and potential impacts). The Ministry collects and provides additional information and updates the values database in a timeline reflective of the sustainable forest licensee notification.

The above procedures, and timelines as per the FIM Base and Values Technical Specifications, are valid where operational planning requirements described in the FMPM have been met. In instances where a FMP amendment or a revision to an AWS is required; the above timelines will be adjusted as per the timelines associated with the amendment or revision.

Sustainable forest licensees will provide the Ministry with information about values, set out in the FIM Base and Values Technical Specifications, and the Ministry provides sustainable forest licensees with information about values for the purpose of forest management planning.

If the provision of information or the location of classified values could threaten the existence, integrity, or health of a value, the Ministry may withhold such information. The Ministry, in consultation with the planning team, will determine the kind of protection for such a value.

3.4 Precautionary Principle in Values Identification and Protection

The geographic location and basic description of a value will be available for the value to be considered as a known value. If a value does not have a geographic location, or if the basic description information about the features of a value does not exist or is insufficient to meet the minimum requirements of Part B, Section 3.1.6, then the value will not be considered as a known value and will not normally be considered in forest management planning.

In some cases, although the information is incomplete, a general location or partial description of the features of a value may be available. In such cases, the Ministry may apply the precautionary principle to ensure that values are protected during forest management planning or implementation of forest operations.

The precautionary principle is defined as follows:

> *In the absence of conclusive information to confirm the presence or features of a value, this principle requires the consideration of the value in the planning of forest operations in order to ensure that the value is protected, based on the high probability of its presence and the potential that it may be affected by forest management operations in a significant and negative way.*

The precautionary principle recognizes that some forest management activities may be detrimental to the existence, integrity, and health of some values or may cause irreparable damage to values. The rationale for applying the precautionary principle is to reduce the risks of significantly affecting a value in a negative way, in the absence of conclusive information about a value, by considering values in forest management planning using the best available information about those values.

Members of the planning team will consider the available information and may make recommendations as to whether sufficient information exists to treat the value as a known value. Members of the planning team may also make recommendations regarding the applicability of the precautionary principle and the extent that the precautionary principle should be applied to ensure the protection of the value.

Using planning team recommendations and assessing the available information against the standards set out in Part B, Section 3.1, the Ministry determines the values that will be considered in forest management planning and to what extent the precautionary principle may apply.

The Ministry may exercise reasonable latitude to designate a value as a known value, based on the availability of sufficient information, to ensure that it can be considered in forest management planning. In designating a value as a known value based on applying the precautionary principle, the Ministry provides sustainable forest licensees with this decision, an explanation of the concerns related to potential impacts from forest management, the rationale to support the decision, and the available information about the value. The Ministry makes these decisions and ensures that these decisions are carried out by the planning team.

The precautionary principle is not designed to make sustainable forest licensees become the *de facto* collector of values information. The precautionary principle is not to be applied in circumstances where it is reasonably possible to collect field information that meets the minimum standards of Part B, Section 3.1.6 to declare that a value should be considered a known value.

3.5   Predictive Modelling in Values Identification

The Ministry, with the assistance of sustainable forest licensees and other parties, has developed an extensive values information database. However, not all values on forests have been identified. Assisting in the identification of values, predictive

models are being used to identify the location of areas that have a high probability of containing values based on the presence of specific landscape features that resemble the location and site conditions of and have characteristics similar to known values. Archaeological potential modelling is an example of predictive modelling used in forest management planning. The Ministry approves the application of any predictive models that are used to identify values for the purpose of forest management planning.

Predictive models may be used to provide preliminary identification of potential areas where values are likely to be present. Predictive models need to be re-calibrated to consider new information and to develop better trends or predictions from that information. The results produced from predictive modelling should not be used in isolation of further investigation. Further investigation or analysis may identify the existence of values within the predicted area. The Ministry conducts this investigation or analysis, or causes the investigation or analysis to be conducted.

The Ministry gives priority to investigating or analyzing areas identified by predictive modelling that are located within, or are in close proximity to, proposed areas of forest operations. Based on the results of analysis, the candidate areas identified by predictive modelling will be reviewed and may be revised to identify potential areas.

Potential areas that can be described by further information that meets the standards set out in Part B, Section 3.1, will be treated as known values. The Ministry confirms that potential areas will be treated as known values.

Further investigation or analysis of predictive modelling results cannot always provide the exact location or basic description of the features of a value that may exist within a potential area to the standards set out in Part B, Section 3.1. In this case, the Ministry may apply the precautionary principle to designate potential areas as known values, based on the availability of sufficient information needed to consider the appropriate protection for that value in forest management planning.

The Ministry also determines if the information produced by predictive modelling is considered to be classified information. The Ministry treats classified information in accordance with Part A, Section 1.3.1.

The Forest Management Guide for Cultural Heritage Values provides additional detail, guidance and direction for the identification and protection of archaeological potential values. Other cases of the use of predictive models for values identification may have documentation and direction set out in the FIM or the FIM Base and Values Technical Specifications.

4.0 Forest Resources Inventory Information

The forest resources inventory (FRI) is a snap shot of the forest cover (for example, composition) at specific points in time. It provides a description of the forest, water and other landbase features within a management unit. It has a spatial component (that is geographic location) and a tabular component (that is description of characteristics).

The FRI is considered background information (for example, depicting the forest condition) for the initial stages of preparing planning inventory information and to support the initial development of a new FMP in accordance with the FMPM.

The FRI information is scalable; the Ministry may also use it to support the analyses of forest cover for various natural resource management decisions over a wide range of geographic areas (for example, at district, habitat range, mill woodshed, watershed, eco-regional, provincial scales).

The Ministry provides sustainable forest licensees with the FRI for all areas within a management unit. The FRI will contain sufficient information to serve as a base for planning teams to prepare the FMPs in accordance with the FMPM. The FRI is calibrated using field measurements, and collections of the FIM regulated forest reporting information. In the absence of having this information, the best available information will be used. The sustainable forest licensee will use the FRI in developing the FMPs and specifically in the creation of a planning inventory information product in accordance with Part B, Section 5.1.

The following sections set out the requirements, standards, roles and responsibilities, timelines, and conditions for providing spatial and tabular information components of the FRI. Further technical details and requirements are contained in the FIM Forest Resources Inventory Technical Specifications.

4.1   Requirements and Standards

In preparing the FRI, the Ministry uses the best available data (for example, remotely-sensed data, modelled data, Ontario Hydro Network, Ontario Road Network, Ownership), annual reporting and other local historical data.

The FRI for a management unit will contain information as described in the FIM Forest Resources Inventory Technical Specifications for planning teams to prepare the FMPs in accordance with the FMPM.

4.2   Roles and Responsibilities

The Ministry provides sustainable forest licensees with the FRI information for all areas within a management unit. The Ministry uses the best available inventory information for all areas within a management unit when producing the FRI.

Sustainable forest licensees will verify that the FRI information provided by the Ministry is complete. Checking for completeness includes, but is not limited to, ensuring that:

(a) the correct spatial and tabular attributes are provided for by the FIM Forest Resources Inventory Technical Specifications;
(b) updates or changes to the base feature information are consistent and applied; and
(c) updates adequately reflect the landscape conditions.

The sustainable forest licensee will notify the Ministry that the information has been checked for completeness and whether the information meets the requirements set out in the FIM Forest Resource Inventory Technical Specifications. If the information does not meet the requirements set out in the FIM and the FIM Forest Resources Inventory Technical Specifications, the sustainable forest licensee will provide a description of the errors or the reasons why the information does not meet the requirements. The sustainable forest licensee and the Ministry will determine the extent of the corrections and a timeframe that the revisions can be made in. The Ministry reissues updated FRI information.

4.3 Timelines and Conditions

The Ministry will provide new FRI information no later than 4 years prior to anticipated plan start(that is FMPM, Part A, Section 1.0), otherwise the sustainable forest licensee will use the most recent inventory information provided.

The planning team can use FRI information received later than 4 years prior to anticipated plan start if it will not adversely affect or delay the planning process.

The sustainable forest licensee has three months after receiving the FRI information to check for completeness.

5.0   Planning Inventory Information

The planning inventory information is used as a basis to prepare and monitor the development of a FMP and to support decisions made in an approved FMP and subsequent annual work schedules. The planning inventory information is created from the forest resources inventory (FRI) or similar product in cases where the FRI described in Part B, Section 4.0 is not available.

The planning inventory information is prepared for each FMP and remains with the FMP from its initial preparation through its implementation to its subsequent evaluation. The usefulness of the inventories may extend beyond the period of a FMP to support the Independent Forest Audits (IFA) and may provide relevant background information when referencing and assessing the past FMPs during the development of future FMPs.

The planning inventory information will contain updated forest description information from forest management activities and natural changes to the forest. The planning inventory information also provides forecasted changes to forest description information based on the expected outcomes of planned operations that have not yet been implemented from the currently approved FMP.

The planning inventory information will include forest classification information and management decision information.

The planning inventory information will support forest modelling, habitat modelling and landscape diversity analysis that will be used in the development of the management direction for the FMP. The planning inventory information will be used to support monitoring and reporting.

The roads and road water crossings inventories will be confirmed and updated as required by the FMPM.

5.1   Requirements and Standards

The requirements for providing planning inventory information, existing roads inventory and existing water crossing inventory information are directly related to specific stages in the development of a FMP.

The planning inventory information will be submitted as digital geospatial data and contain spatial and tabular attributes.

The process to develop planning inventory information starts with the most recent and best available base features provided in accordance with Part B, Section 2.0 and with the most recent FRI provided in accordance with Part B, Section 4.0. The process to develop the planning inventory information is not defined in the FIM. The format and standards of planning inventory information are identified in the Forest Management Planning Technical Specifications.

5.2   Roles and Responsibilities

Sustainable forest licensees will update information in all components of the planning inventory information (for example, forest, roads and water crossings). These updates are done to prepare planning inventory information used for the FMP development, implementation and assessment.

The Ministry reviews the planning inventory information for completeness. The FIM Forest Management Planning Technical Specifications sets out the format and detailed data standards for the planning inventory information.

Sustainable forest licensees and the Ministry share the responsibility of meeting progress checkpoints. Progress checkpoints set out in the FMPM are key steps in the development of a FMP.

The Ministry provides sustainable forest licensees with base information set out in the FIM Base and Values Technical Specifications and with the FRI set out in the FIM Forest Resources Inventory Technical Specifications.

Sustainable forest licensees will provide the Ministry with planning inventory information set out in the FIM Forest Management Planning Technical Specifications.

5.2.1   Checking for Completeness

The sustainable forest licensee and the Ministry check that information provided by either party is complete. Planning inventory information (for example,. forest, roads and water crossings) submitted undergoes a mandatory validation process. The validation process assures the planning inventory information meets the requirements of the FIM technical specifications and the progress checkpoints as described in the FMPM.

The sustainable forest licensee and the Ministry determine whether information meets the requirements and standards.

The Ministry notifies the sustainable forest licensee that the information has been checked for completeness and whether the information meets the requirements set out in the FIM. If the information does not meet the requirements set out in the FIM and the FIM Forest Management Planning Technical Specifications, the Ministry provides a description of the errors or the reasons why the information does not meet the requirements. The sustainable forest licensee and the Ministry determine the extent of the corrections and a timeframe for the revisions to be made. The objective is to correct and resubmit the information such that it does not affect the completion of the new FMP.

5.3   Timelines and Conditions

Sustainable forest licensees will provide all the planning inventory information (for example, forest, roads and water crossings). The planning inventory information is included in the approved FMP for file retention purposes and assists the Ministry in meeting its requirements set out in the ARA.

The FMP Terms of Reference sets out the timelines for the sustainable forest licensee and the Ministry for a period of review and revision in advance of the progress checkpoints or draft and final FMP.

6.0   Operational Planning Information

Operational planning information is a component of the draft FMP and the final FMP. The operational planning information represents the results of planning and summarizes decisions made in respect of forest operations. This information identifies all forest operations (for example, planned harvest, existing roads) as described by the FMPM.

6.1   Requirements and Standards

The operational planning information as described in FMPM will be submitted as digital geospatial data and contain spatial and tabular attributes. These layers (for example, harvest, road corridors) will be spatially compatible, such that it can be overlaid and/or spatially linked to the operational planning inventory information.

The information contained in these layers are required for the consultation process in accordance with the FMPM. The FIM Forest Management Planning Technical Specifications describe the information standards (for example, data attributes, format) for the information requirements, and the conditions for provisions (for example, naming conventions, exchange parameters, validation standards).

6.2   Roles and Responsibilities

The sustainable forest licensee will prepare and submit operational planning information as described in the FMPM.

The Ministry verifies that the operational planning information meets the standards defined in the FIM Forest Management Planning Technical Specifications and is consistent with the information contained in the FMP documentation.

6.3   Timelines and Conditions

Operational planning information is required for the 10-year FMP. The operational planning information is submitted with the draft and final FMP.

Part C Information for Annual Operations

1.0   Annual Work Schedules Information

This part identifies the information requirements for the scheduling and monitoring of annual forest operations. The information requirements are for the development of forest operations prescriptions and the preparation of an annual work schedule (AWS) as described in the Forest Management Planning Manual (FMPM).

The FMPM sets out the requirements for three types of forest operations where detailed project planning (that is prescribed burning, and aerial application of pesticides) or additional information (that is high risk water crossings) is required for approval before their implementation. The FMPM requires these operational project plans and additional information to be available with the AWS.

Sustainable forest licensees will provide the information in accordance with the Forest Information Manual (FIM) Annual Work Schedule Technical Specifications.

1.1   Requirements and Standards

The FMPM requirements set out the development and submission of an AWS. The AWS is typically used by the sustainable forest licensee and Ministry staff for scheduling operations, consultation with First Nation and Métis communities and public inspection.

The AWS information as described in the FMPM will be submitted as digital geospatial data and contain spatial and tabular attributes. These layers (for example, harvest, tending) will be spatially compatible, such that it can be overlaid and/or spatially linked to planning inventory information.

The FIM Annual Work Schedule Technical Specifications describe the information standards (for example, data attributes, format) for the information requirements, and the conditions for provisions (for example, naming conventions, exchange parameters, validation standards).

Standardization of the AWS information is mandatory to enable publication on the information management system.

All the AWS information products will be submitted in an accessible digital format via the information management system.

1.1.1   Forest Operations Prescriptions Information

Forest operations prescriptions and silvicultural activities for a given area of operations will be maintained by the sustainable forest licensee as part of their information records. The information will be maintained for each area within an area of operations.

A forest operations prescription for an area is not normally required to be submitted as a complete, comprehensive package. However, at the request of the Ministry, the sustainable forest licensee will provide access to, or provision of, information relating to the forest operations prescription for the purposes of monitoring, compliance, and auditing.

Information requirements identified in the FIM support silvicultural monitoring program requirements described in the FMPM. The Forest Operations and Silviculture Manual (FOSM) and its associated policies provide guidance on how to use this information to support the silviculture monitoring program.

1.1.2   Additional Information and Project Plans

Higher risk water crossing information, prescribed burn plans and aerial pesticide project plans will be available with the AWS for the year when they are scheduled.

The information and project plans are submitted separately from the AWS through the information management system. These documents require a certified approval page that is provided as per the FIM Annual Work Schedule Technical Specifications.

Higher risk water crossings scheduled for construction, including existing water crossings scheduled for replacement, and decommissioning that require Ministry

review will be submitted as described in the FMPM. Prescribed burn plans and aerial pesticide project descriptions and plans are prepared as described in the FMPM. Aerial insecticide projects can only occur after the requirements for an insect pest management program have been completed, as described in the FMPM.

1.1.3 AWS Revisions and Changes to Values

Revisions are to be available with the AWS as described in the FMPM. The FMPM prescribes the documentation requirements for submitting information required for all changes to values that do not require an AWS revision (for example, updated information on the location and description of values).

Direction on submitting the AWS revisions and changes to values information appears in the FIM Annual Work Schedule Technical Specifications and/or the FIM Base and Values Technical Specifications.

1.2   Roles and Responsibilities

The sustainable forest licensee will prepare and provide the AWS information products. The specific and detailed responsibilities are set out in the FIM Annual Work Schedule Technical Specifications.

1.3   Timelines and Conditions

In accordance with timeline described in the FMPM, a sustainable forest licensee is required to submit an AWS. The Ministry will provide the sustainable forest licensee with information (for example, water crossing review results) to be included in the AWS.

Refer to the FMPM and the FIM Annual Work Schedule Technical Specifications for specific direction on timelines related to AWS components.

Part D Information for Reporting, Monitoring and Evaluation

1.0   Introduction

This part discusses the requirements for information related to monitoring, reporting and evaluation of forest management activities including forest operations compliance information, roads and water crossings monitoring, exceptions monitoring, and silvicultural monitoring information. Reporting, monitoring and evaluation information is required at various times during and after the period of a forest management plan (FMP).

Section 2.0 identifies the information required to support the preparation of management unit annual reports as described in the Forest Management Planning Manual (FMPM). The annual report (AR) includes results of monitoring activities (for example, forest operations inspections, assessments of regeneration).

Section 3.0 identifies requirements to provide information collected from forest inspections in accordance with the Forest Compliance Handbook and the Ministry's compliance information system.

Section 4.0 discusses silvicultural monitoring information.

2.0 Annual Report Information

2.1 Requirements and Standards

An annual report will be prepared for each management unit as described in the FMPM. Reporting on forest management activities, specifically the actual treatments applied and results of these treatments, as expressed in the reporting of assessments of regeneration, completes the forest operations prescription and permits monitoring and assessment to be undertaken.

The Ministry provides sustainable forest licensees with information on forest operations inspections, natural disturbances, and harvest volume utilization for the annual report period.

The AR information as described in the FMPM will be submitted as digital geospatial data and contain spatial and tabular attributes. These layers (for example, harvest, renewal) will be spatially compatible, such that it can be overlaid and/or spatially linked to the planning inventory information. The FIM Annual Report Technical Specifications describe the information standards (for example, data attributes, format) for the information requirements, and the conditions for provisions (for example, naming conventions, exchange parameters, validation standards).

Standardization is mandatory to enable publication of annual report information on the information management system.

Sustainable forest licensees will create and provide the AR in accordance with the FIM Annual Report Technical Specifications. All annual report information products will be submitted by the sustainable forest licensee in an accessible digital format via the information management system.

2.2 Roles and Responsibilities

Sustainable forest licensees will prepare and submit complete annual reports that incorporate information provided by the Ministry (for example, forest operations inspections, natural disturbances and harvest volume utilization).

The FMPM specifies that annually the Ministry provide sustainable forest licensees with information on forest operations inspections, natural disturbances and harvest volume utilization for use in meeting their annual report requirements.

Sustainable forest licensees will ensure that the information provided by the Ministry is checked for completeness. The sustainable forest licensees will notify the Ministry of any discrepancies between information provided by the Ministry and similar data, records, and information that are maintained by the sustainable forest licensee. Discrepancies in annual report information will be resolved before the submission of the annual report.

The Ministry will have the opportunity to review the AR for completeness and accuracy and to validate it against the FIM Annual Report Technical Specifications. The Ministry will provide the results of the review to the plan author. Year six and final year management unit annual reports will be reviewed and approved by the Ministry. The status of report submissions and notice of review results is provided via the information management system.

The Ministry will use the information from annual reports to develop and support provincial reporting.

2.3   Timelines and Conditions

Sustainable forest licensees and the Ministry will provide annual report information in accordance with the FIM Annual Report Technical Specifications.

The Ministry provides most information, to the sustainable forest licensee by September 15 each year. Natural disturbance information, specifically fire disturbance, insect and disease related disturbance, and abiotic disturbance related to wind, ice storm or other events, are provided by the Ministry on April 1 of each year.

3.0   Forest Operations Compliance Information

The Forest Compliance Handbook provides the specific policies and procedures of the forest operations compliance program. Generally, under the forest operations compliance program, sustainable forest licensees perform compliance planning, monitoring, inspection, and reporting. The Ministry performs audits or spot checks of company inspections, verifies all reported instances of non-compliance, and determines enforcement actions and applicable remedies.

Forest operations inspection reports are available for public inspection. The Ministry may make decisions regarding the availability of certain information contained in a forest operations inspection report based on the confidentiality or sensitivity of that information with respect to the FIPPA or to ensure the protection of values.

3.1   Requirements and Standards

Sustainable forest licensees will conduct monitoring that includes inspecting and reporting on all forest operations carried out on forests and will provide a report to the Ministry in digital form in accordance with the Forest Compliance Handbook. The Forest Compliance Handbook also provides for the process for the conduct of forest operations inspections and the requirement to provide a report in each case. The digital information required in a forest operations inspection report will be provided to the Ministry office responsible for approving and monitoring the implementation of forest management operations conducted by the sustainable forest licensee.

The Ministry similarly provides sustainable forest licensees with forest operations inspection information. The Ministry maintains all forest operations compliance information produced by sustainable forest licensees and the Ministry in the Ministry's compliance information system.

The requirement to provide digital forest operations inspection information complements the direction in the following documents:

(a) Forest Compliance Handbook – all policies and procedures related to the Ministry's compliance information system;

(b) compliance plan as approved through the FMP, and its implementation through AWSs; and

(c) conditions in Sustainable Forest Licenses that pertain to the collection and provision of forest operations compliance inspection information.

Sustainable forest licensees will provide operations inspections information to the Ministry in accordance with the Forest Compliance Handbook. The Ministry provides forest operations inspection information to sustainable forest licensees in accordance with the Forest Compliance Handbook. Additionally, standards for operations inspections information are dictated by the Ministry's compliance information system.

3.2   Roles and Responsibilities

Sustainable forest licensees will complete an inspection of forest operations and provide a digital report. For each forest operations inspection, sustainable forest licensees will confirm that the mandatory data requirements and standards have been met in accordance with the FIM, Part D, Sections 3.1.

The Ministry reviews the digital information provided by sustainable forest licensees for completeness. The check for completeness and verification may consist of, but is not limited to, the following:

(a) the comments and rationale that are provided as part of the forest operations inspection report information are sufficient to evaluate each instance of non-compliance;

(b) the forest operations inspection information has been received in accordance with the compliance component of the approved FMP and in accordance with the timelines in the Forest Compliance Handbook;

(c) the reference and location to source data, information and records that have been used in the preparation of the forest operations inspection report information, is complete and traceable; and

(d) verification, in some cases, of the ground observations and the information related to those observations.

The Ministry completes forest operations inspections reports for inspections they conduct and provides the digital information to the sustainable forest licensee.

3.3   Timelines and Conditions

The timeline for providing forest operations inspection report information described in this section applies to sustainable forest licensees and the Ministry. Forest operations inspection reports will be provided at different times depending on the following direction:

(a) the frequency and timelines (that is inspection schedules) described in the company and/or district compliance planning and strategies identified in the approved FMP, and in the AWS related to submission of forest operations inspection reports; and
(b) the timelines set out in the Forest Compliance Handbook

Forest operations inspections information is specified in the Forest Compliance Handbook and the Ministry's compliance information system.

4.0   Silvicultural Monitoring Information

4.1   Requirements and Standards

The FIM provides a framework for the information to support a silvicultural monitoring program as many of the information requirements to support a monitoring plan are met by existing FIM requirements or are described in the FMPM.

The results of the assessments of regeneration will be recorded in the annual report. The information collected during implementation of the program will support the review of renewal and maintenance activities as described in the FMPM. The information supports an adaptive management approach to forest management.

The FMPM, and the FOSM and its associated policies define the information to be collected and survey methodologies to be used during monitoring.

4.2   Roles and Responsibilities

The sustainable forest licensee will develop a monitoring program for the management unit, record it in the FMP as described in the FMPM, and implement the program. The Ministry reviews the monitoring program as part of the approval process for the FMP.

The sustainable forest licensee will maintain all records of information gathered during implementation of the monitoring program and use this information in annual reporting and in the development of the next FMP.

The Ministry may conduct assessments of regeneration. Results from these assessments will be provided to the sustainable forest licensee to support requirements described by FOSM and the associated policies.

4.3   Timelines and Conditions

The timeline associated with provision of silvicultural monitoring information is linked to the annual reporting timelines and to the FMP development timelines.

Technical guidance and other direction in meeting silvicultural monitoring requirements are available in the FMPM and the FIM Annual Report Technical Specifications. The processes and timelines will be explicitly outlined in the FOSM and its associated policies.

Glossary of Terms

Definition Source

Definitions taken fully, modified or adapted from an already existing source, note the source following the definition – [source]. Sources are abbreviated as follows:

AGI   On-line dictionary of GIS terms by the Association for Geographic Information and the University of Edinburgh Department of Geography.

ESRI   On-line GIS Dictionary at Environmental Systems Research Institute (ESRI) Support Center website (http://support.esri.com).

FITC   Forestry Canada, 1988. Forest Inventory Terms in Canada. Canadian Forest Inventory Committee, Forestry Canada.

FIPPA   *Freedom of Information and Protection of Privacy Act*, R.S.O. 1990, c. F.31

ISAC   Province of Ontario, Information Security Advisory Council.

IASR   Integrated Accessibility Standards set out in O. Reg. 191/11 made under the *Accessibility for Ontarians with Disabilities Act, 2005*.

ISO   International Standards Organization.

OpenGIS   On-line glossary at Open Geospatial Consortium, Inc. website (http://www.opengeospatial.org/resource/glossary).

U GIS   ESRI. 1992. Understanding GIS: The Arc/Info Method.

Definition/Term

Attribute

Nonspatial information about a geographic feature in a GIS, usually stored in a table and linked to the feature by a unique identifier. For example, attributes of a river might include its name, length, and sediment load at a gauging station. [Source: ESRI]

Base Features

Base features represent the geographic locations and descriptions of topographic, cultural, and cadastral entities of Ontario's landbase. Base features can be natural, physical features, such as lakes, rivers, and wetlands, or they can be features of human influence such as hydro lines, gas pipelines, provincial highways, roads, and railways. Base features include areas that identify subdivisions of land, water, vegetation, environmental features, and other physical and administrative boundaries. Examples of this latter type of base features include management units and ownership parcels that identify areas designated for legal, political, tax base, population base, land-use zoning, or management decision purposes.

Buffer

A polygon enclosing a point, line, or polygon at a specified distance. [Source: ESRI]

Data

Any collection of related facts arranged in a particular format; often, the basic elements of information that are produced, stored, or processed by a computer. [Source: ESRI]

Data Attribute

See Attribute

Datum

The reference specifications of a measurement system, usually a system of coordinate positions on a surface (a horizontal datum) or heights above or below a surface (a vertical datum). [Source: ESRI]

Digital Data / Digital Information

Data / information represented in a computer compatible format. [Source: modified AGI]

Electronic Information

See *Digital Data /* Digital *Information*

Forest

A forest ecosystem or part or a forest ecosystem that is on land vested in His Majesty in the right of Ontario (CFSA), which may include:

    a) (Ecology) A plant community predominantly of trees and other woody vegetation, growing more or less closely together (URN 2441).

    b) (Silvicultural Management) An area managed for the production of <u>timber</u> and other forest products or maintained under woody vegetation for such indirect benefits as protection of site or for recreation (URN 2442).

    c) (Forest Diversity) An aggregate of <u>forest stand</u>s.

Forest Management Planning Manual (FMPM)

The Forest Management Planning Manual refers to the July 2024 version of the manual prepared in accordance with Section (68) of the *Crown Forest Sustainability Act*. This FMPM provides direction for all aspects of forest management planning for forests in Ontario.

Forest Resources Inventory

The Forest Resources Inventory (FRI) is a spatial product that provides description of all areas within a management unit and provides a snapshot in time of the characteristics of water and landbase geography.

Geographic Information / Geographic Data

Information describing the location and attributes of things, including their shapes and representation. Geographic data is the composite of spatial data and attribute data. [Source: ESRI]

Geographic Information System (GIS)

(1) An integrated collection of computer software and data used to view and manage information about geographic places, analyze spatial relationships, and model spatial processes. A GIS provides a framework for gathering and organizing

spatial data and related information so that it can be displayed and analyzed. [Source: ESRI]

(2) A computer system for capturing, storing, checking, integrating, manipulating, analyzing and displaying data related to positions on the Earth's surface. [Source: modified AGI]

Geographically Referenced

Refers to the condition of data for which "positional" information is available, enabling the geographical position of the data to be established and communicated. The normal functioning of a geographic information system requires the existence of geographically referenced data in a spatial data base and a means of manipulating these data. [Source: FITC]

Geo-referenced

See *Geographically* Referenced

Geospatial Data

See *Geographic* Information */ Geographic Data*

Information

Information comes from data that have been processed (for example, synthesized, organized, selected, sorted) to provide products that can be used in decision making. Information includes numerical data, text, drawings, designs, maps, photographs, video and audio recordings, and ideas.

Intellectual Property

Data, information and their related intellectual property rights, including text, brochures, books, tables, software, maps, photographs, research findings, and new plant strains.

Intellectual Property Rights

Intellectual property rights include copyright, patent, trademark, and other forms of intellectual property protection.

Known Value

A value is a natural, cultural, First Nation or Métis resource attribute or use of land, including all lakes and streams, which must be considered in forest management planning. A value is considered to be a known value when sufficient information exists to describe its geographic location and its basic features.

Layer

A reference to a spatial data source, such as a shapefile, coverage, geodatabase feature class, or raster image. [Source: modified ESRI]

Management Direction

The strategic, tactical and operational planning components of a Forest Management Plan, including management objectives, indicators, and levels of activities required to achieve the desired forest and benefits, which together provide for the sustainability of the forest.

Managed Forest

Forests for which there is no legal or land use planning decision which prevents the land from being managed for forest management purposes.

Management Unit

An area of forest designated under section 7 of the *Crown Forest Sustainability Act*, 1994.

Map Projection

A mathematical model that transforms the locations of features on the Earth's three-dimensional surface to locations on a two-dimensional surface. Different map projections project the Earth's surface differently onto a flat plane. Some projections preserve shape; others preserve accuracy of area, distance, or direction. However, any such representation distorts some parameter of the Earth's surface be it distance, area, shape, or direction. [Source: U GIS]

Map Resolution

(1) The detail with which a map depicts the location and shape of geographic features. The larger the map scale, the higher the possible resolution. As scale decreases, resolution diminishes and feature boundaries must be smoothed, simplified, or not shown at all; for example, small areas may have to be represented as points.

(2) The dimensions represented by each cell or pixel in a raster.

(3) The smallest spacing between two display elements, expressed as dots per inch, pixels per line, or lines per millimeter. [Source: ESRI]

Map Scale

The relationship between distance on a map and the corresponding distance on the earth's surface. Map scale is often recorded as a representative fraction such as 1:1,000,000 (1 unit on the map represents a million units on the earth's surface) or 1:24,000 (1 unit on the map represents 24,000 units on the earth's surface). The terms "large" and "small" refer to the relative magnitude of the representative fraction. Since 1/1,000,000 is a smaller fraction than 1/24,000, the former is said to be a smaller scale. Small scales are often used to map large areas because each map unit covers a larger earth distance. Large-scale maps are employed for detailed maps of smaller areas. [Source: OpenGIS]

Metadata

Information that describes the content, quality, condition, origin, and other characteristics of data or other pieces of information. Metadata for spatial data may describe and document its subject matter; how, when, where, and by whom the data was collected; availability and distribution information; its projection, scale, resolution, and accuracy; and its reliability with regard to some standard. Metadata consists of properties and documentation. Properties are derived from the data source (for example, the coordinate system and projection of the data), while documentation is entered by a person (for example, keywords used to describe the data). [Source: ESRI]

Natural Resources Information Portal (NRIP)

The Natural Resources Information Portal is an extranet (an internet site with username and password security restrictions) available to the Ministry and the licensees for the sharing, distribution and exchange of forest information and data. NRIP is also an internet site available to the First Nation and Métis communities and the public that enables the portal of FMP approved information and draft products supporting consultation requirements and ensures data is open and accessible.

Personal Information

Personal information means recorded information about an identifiable individual, including:

(a) information relating to the race, national or ethnic origin, colour, religion, age, sex, sexual orientation or marital or family status of the individual,
(b) information relating to the education or the medical, psychiatric, psychological, criminal or employment history of the individual or information relating to financial transactions in which the individual has been involved,
(c) any identifying number, symbol or other particular assigned to the individual,
(d) the address, telephone number, fingerprints or blood type of the individual,
(e) the personal opinions or views of the individual except where they relate to another individual,

(f) correspondence sent to an institution by the individual that is implicitly or explicitly of a private or confidential nature, and replies to that correspondence that would reveal the contents of the original correspondence,

(g) the views or opinions of another individual about the individual, and

(h) the individual's name where it appears with other personal information relating to the individual or where the disclosure of the name would reveal other personal information about the individual; ("renseignements personnels") [Source: FIPPA]

Precautionary Principle

In the absence of conclusive information to confirm the presence or features of a value, this principle requires the consideration of the value in the planning of forest operations in order to ensure that the value is protected, based on the high probability of its presence and the potential that it may be affected by forest management operations in a significant and negative way.

Quality Assurance

All the planned and systematic activities implemented within the quality system, and demonstrated as needed, to provide adequate confidence that an entity will fulfill requirements of quality. [Source: ISO]

Quality Control

Comprises the operational techniques and activities that are used to fulfill requirements of quality and quality assurance. [Source: modified ISO]

Records

A record is any information however recorded, whether in printed form, on film, by electronic means or otherwise and includes:

(a) correspondence, memorandum, a book, a plan, a map, a drawing, a diagram, a pictorial or a graphic work, a photograph, a film, a microfilm, a sound recording, a videotape, a machine-readable record, any other documentary material regardless of physical form or characteristics, and any copy thereof; and

(b) subject to the regulations, any record that is capable of being produced from a machine readable record under the control of an institution by means of computer hardware and software or any other information storage equipment and technical expertise normally used by the institution. [Source: FIPPA]

Scale

See *Map Scale*.

Standard

Measurable parameters established for use as a rule or basis for comparison in measuring or judging quantity, quality, value, capacity, or other characteristics.

Tabular Data/Information

Descriptive information, usually alphanumeric, that is stored in rows and columns in a database and can be linked to spatial data. [Source: ESRI]

See *Attribute*.

Theme

See *Layer*.

Value

Values are features, benefits, or conditions of the forest that are linked to a geographic area, which are of interest from various points of view, and that must be considered in forest management planning.

See *Known Value*.