



A Guide to Integrate Mapping Requirements and Standards

To provide improved clarity and efficiency of mapping associated with the forest information cycle

Final Version

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1. Introduction

1.1 Purpose of this Document

This document consolidates the mapping requirements and standards for the forest information cycle (Figure 1.1). Where documentation already exists, this guide provides a link to that information. Where additional clarity or information is required to submit or use operational maps more efficiently, information is contained in this document. This guide is based on the following principles.

- Maps should be shared and comparable across business areas and the associated systems.
- The same features should be defined in the same way by different business areas.
- Industry map submissions should be in a format that enables them to be overlaid with government spatial data (e.g., digital overlays with biophysical base mapping information or orthophotos).
- Standards should be the same for information elements common to government and licensees.

These mapping and data standards support the proposals made by the Cutblock Integration Team of the Streamlining Project. For more information about the Streamlining Project please visit <http://www.for.gov.bc.ca/hfp/streamlining/>. The proposals include moving toward bundled electronic data submissions that contain the information requirements for different business areas (Section 1.4). The mapping standards addressed in this document are:

- information requirements,
- administrative business rules and definitions for mapping,
- precision and accuracy standards, and
- representation standards for viewing tools and output maps.

The following existing business area standards are integrated in this document.

- Forest Industry Guide to the Preparation and Submission of Forest Tenure and Permit Documents via the Electronic Submission Framework (ESF)
- Administration Guide for Forest Stewardship Plans
- Mapping standards for use with RESULTS Submissions, described in the Silviculture Information Submission Guidebook
- Chapter 52, Mapping B.C. Ministry of Forest Resource Tenures and Engineering Branch



- Cruising Manual
- Interior Appraisal Manual
- Coastal Appraisal Manual
- Policy work conducted by the Cutblock Integration Team (made up of district, regional, branch staff)

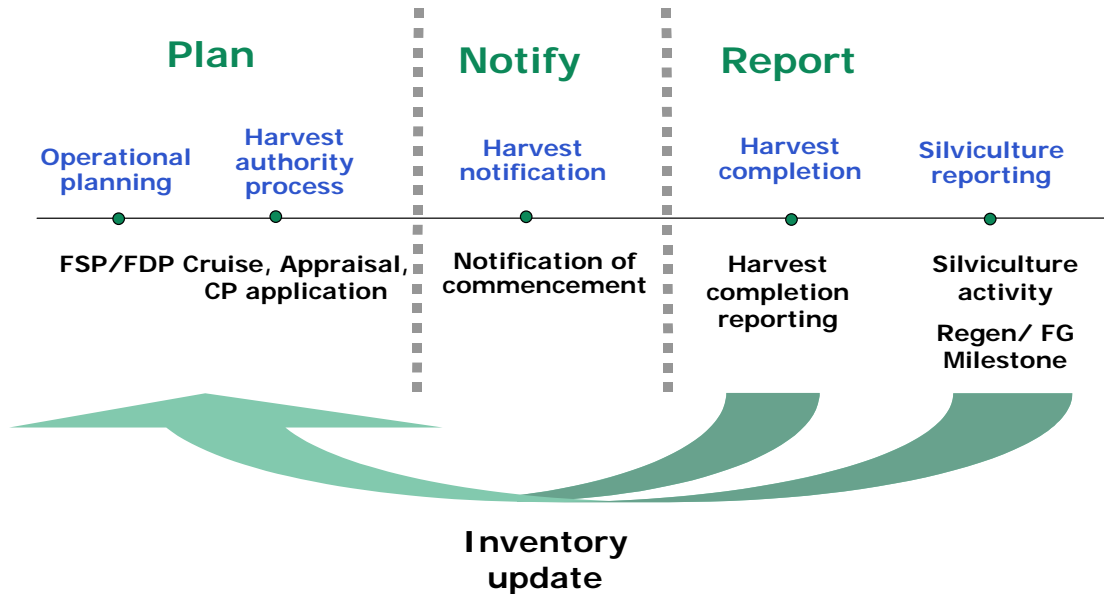


Figure 1.1 The core forest information cycle

1.2 Standards and Flow of Forest Information

Each licensee's submission of forest information to government should go through the following three steps (Figure 1.2).

1. **Licensees submit information:** Licensees submit in XML or GML format using a MoFR application like RESULTS or ECAS, which in turn sends some of the information to the Land and Resources Data Warehouse (LRDW) to update the warehouse. (This document assumes the implementation of the bundled submission streamlining proposal.)¹

¹ In some cases licensees will opt to use third party service providers to make electronic submissions. This is expected to be the case for small tenures (e.g., woodlots and community forests), and will be addressed as an implementation and change management issue.

2. **Government receives submission:** MoFR receives the submission, overlays it on base mapping information if necessary, and shares the submission internally among business areas.
3. **Submission is used by different business areas:** Various business areas (e.g., revenue, stewardship, Compliance and Enforcement (C&E), inventory update) view, print, update information, and conduct analyses (GIS).

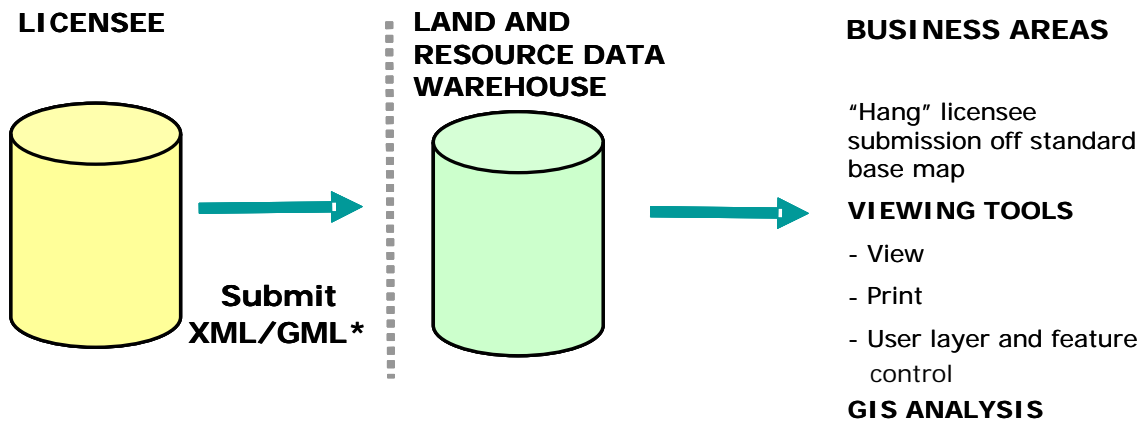


Figure 1.2 Spatial information submission framework.

For each of these steps, there is a need for clear mapping requirements and standards. Table 1.1 outlines data and mapping standards required at each stage of the submission, and where each is currently documented.

Table 1.1 Mapping standards and policies

Step	Type of standard/policy	Existing source
Licensee submits data	Information requirements: what features to include on a map; attribute requirements	Each business area has a set of information requirements. We propose that these be integrated, as outlined in this document.
	Timelines	By regulation for silviculture reporting; Appraisal Manual
	Data standards: precision, accuracy, identifiers	Addressed in this document and in RESULTS mapping standards
	Business rules for mapping: grouping relationships; cutblock definition; rules for reserve timber	Addressed in this document and in RESULTS mapping standards
Government receives submission	Relevant systems	Business Information Centre Web site (see business process diagrams) http://www.for.gov.bc.ca/his/BIC/index.htm



Step	Type of standard/policy	Existing source
Government receives submission (continued)	Sequencing of business processes	Business Information Centre Website (see business process diagrams) http://gwww.for.gov.bc.ca/his/BIC/index.htm Streamlining Cutblock or Road Life cycle documents
	Representation standards for core information (biophysical base and common features; see Streamlining Project Information Access Proposal #3) ²	British Columbia Specifications and Guidelines for Geomatics http://srmwww.gov.bc.ca/bmgs/trim/5000spcs/specs5.pdf
Submission is used by different business areas	Representation standards for viewing tools and output maps	Addressed in this document

1.3 Definitions and Business Rules

Mapping standards are required to help stratify and track spatial information that varies in scale from a single tree to the landscape level (Figure 1.3). There are two main ways to group spatial information.

1. Physical features (e.g., gaps in the forest; single trees; streams and lakes)

2. Administrative and legal units

These two groups do not exist in isolation. Often, the mapped units are administrative groupings of physical features. Cutblocks, openings, retention areas, site plans, and standards units are all administrative units that group, or align with, physical features. Clear business rules are needed to define how each administrative unit should be mapped, as are consistent approaches to how the physical features are mapped.

The Streamlining Project has recommended that legal requirements be the prime driver for mapping standards because the tracking of obligations and information is usually aligned with legal responsibilities.

The following administrative units require clear, consistent business definitions. Each unit, listed roughly in order of largest to smallest, provides a different business view to spatially represent information.

Cutting permit: Cutting permit submissions may contain applications for one or more cutting permits. A cutting permit is made up of one or more cutblocks, with each cutblock comprised of a single or multi-part polygon. (*Source: ESF manual*)

Cutblock: A cutblock is an area of planned or actual harvest that includes the Net Area to be Reforested, Non-Productive areas – natural and unnatural (roads/landings), Non-Commercial Cover and areas of reserve within the cutting boundary.

Cutblocks included in a single cutting authority area should constitute a logical unit. The cutblocks:

² Representation standards are not required for licensee submissions. Once XML/GML files are received, government applies its own internally-consistent representation standards.



1. must be within the same forest district;
2. must be tributary to a common point of appraisal; and
3. must not exceed a maximum distance of 10 km between the furthest boundaries of the furthest cutblocks, except when required for bark beetle epidemic blanket salvage.

Opening: An opening defines an area of land on which harvesting or a disturbance has occurred or is planned, and on which one or more silviculture activities are planned or completed. For harvesting it includes the cutblock and any external reserves associated with the cutblock.

Timber type boundaries: Boundaries outlining areas of similar timber stratified for purposes of the cruise compilation.

Treatment units: Areas of planned similar harvesting treatment delineated for appraisal purposes.

Standards units: In general terms, areas of similar silviculture treatment for tracking site planning obligations, such as silviculture milestone accomplishment and soils compliance.

Forests and Range Practices Act (FRPA) definition: Standard units are one or more parts of a cutblock for which part (or parts) there is only one of each of the following:

- soil disturbance limit
- regeneration date
- stocking standard
- free growing date
- free growing height for each species that contributes to establishing a free growing stand on the cutblock

1.4 The Cutblock Life Cycle

The Streamlining Project has made a number of recommendations regarding the flow of information related to cutblocks. Figure 1.4 illustrates the proposed "cutblock life cycle." The most significant change is to allow for the bundling of the appraisal and CP application information into a single electronic submission. This submission is sent to MoFR and then the information is automatically distributed to the appropriate business areas (appraisal and tenures), with planned Wildlife Tree Retention Areas (WTRA) (WTP in FPC) sent to the LRDW.

Licensees are only required as part of the appraisal to submit planned WTRAs that are within the cutblock boundary. However, they should have an option to submit planned contiguous and external WTRAs, which would be stored in a new reserve timber layer in the LRDW (see Cutblock Integration Team Proposal #2 for more detail). This additional

information is not for the permit or appraisal process, but for other business uses. This would allow districts to alert a licensee if a legal right or title already encumbers the external or adjacent planned WTRA. This additional planned WTRA information will show potential conflicts for subsequent CP applications that overlap the planned reserves. Without this check, there is a risk that subsequent CP or RP applications will be placed on another licensee's planned WTRA, before the WTRA is reported officially at harvest completion. The Streamlining Project recommends that all retained areas (WTRAs, RRZ, or RMZ) be submitted along with the cutblock boundary and associated with the cutblock. (*WTRA Interim Guidance document*)

1.5 The Road Life Cycle

The Streamlining Project has recommended several changes to the submission of road information. Figure 1.5 illustrates the road life cycle.

Road permit applications and road appraisal information will be submitted as a bundled single submission and be automatically split and directed to the appropriate business areas. Once the rate and permit approval are given, the licensee will be informed in an email. The government will use the road names assigned by the licensees, who will follow a naming convention. The new road submission process should be enabled in early 2006. After the roads are built, spatial details of these "as-built" roads are submitted in a road completion report. Road Use Permits (RUP) give licensees authorization to use forest service roads (FSR). The RUP process will remain the same. For more information, please visit:

<http://www.for.gov.bc.ca/HFP/streamlining/Roads/index.htm>

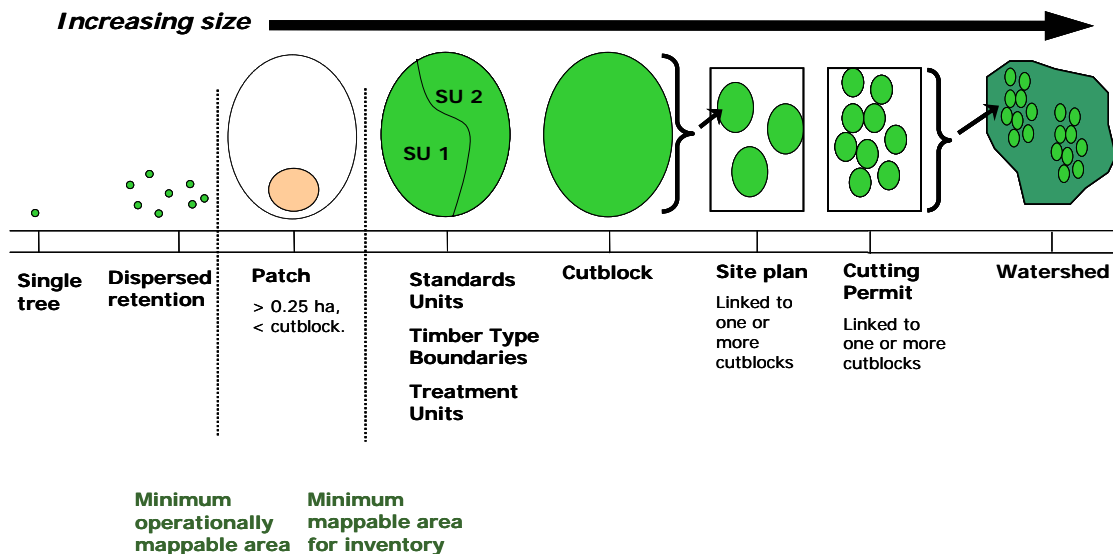


Figure 1.3 Scale continuum of mapped units

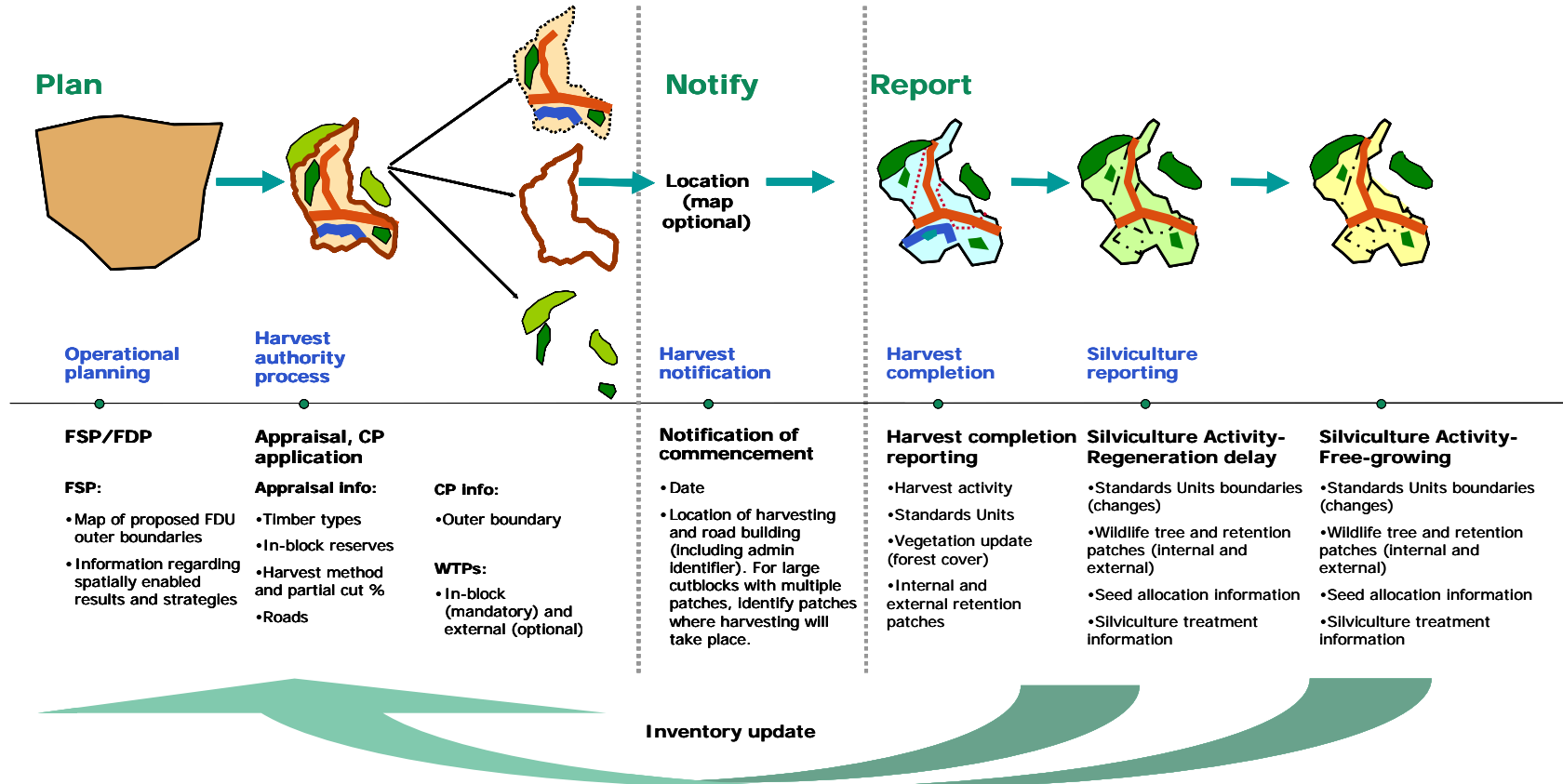


Figure 1.4 The proposed cutblock life cycle

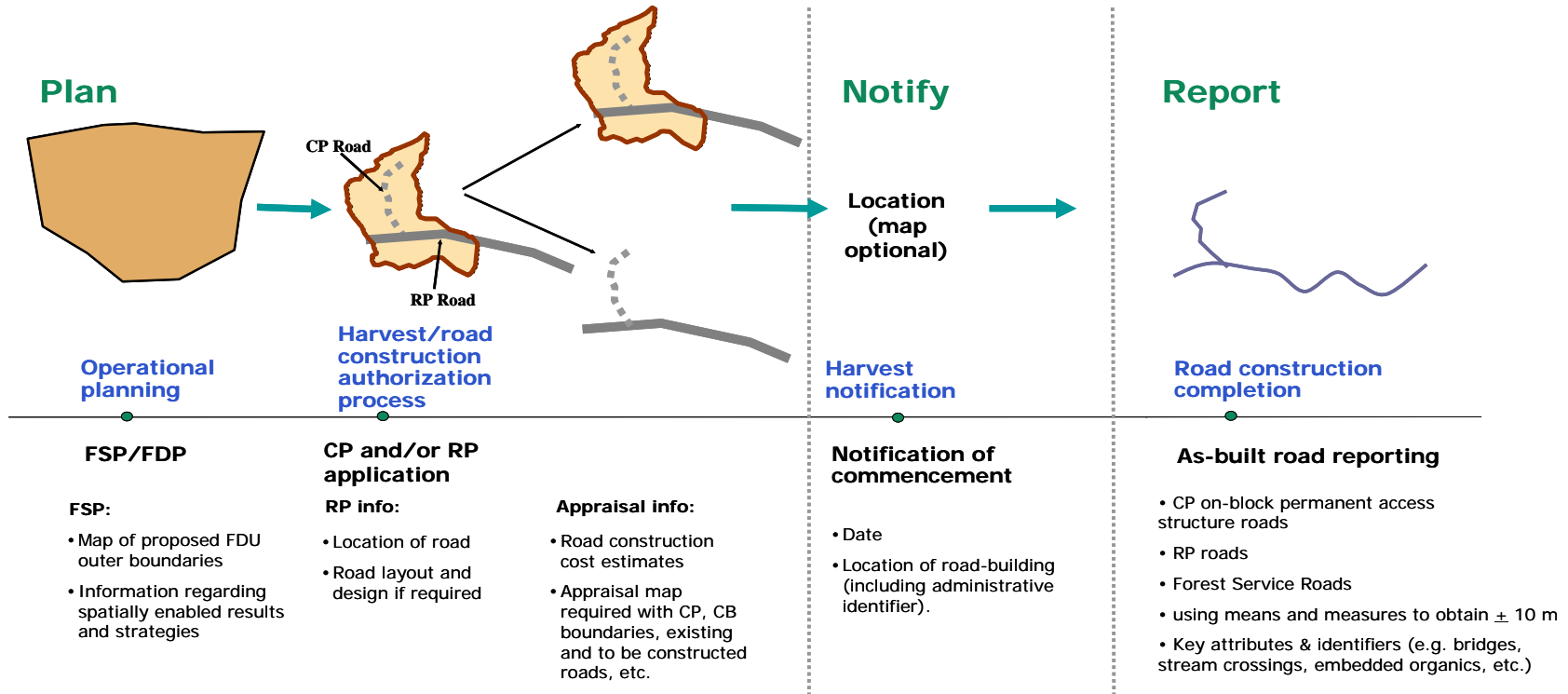


Figure 1.5 The proposed road life cycle



2. Submission Format

The overall submission formatting standards use XML (extensible mark-up language) to provide a simple way to structure information. The standards for XML are developed by World Wide Web Consortium (<http://www.w3.org/>),

Further technical information on XML can be found at <http://www.w3.org/XML/>

Further technical information on GML can be found at <http://www.opengis.net/gml/02-069/GML2-12.html>

which sets all standards for the Internet, internet data formats, and more. Spatial information stored in the submission document is an extension of standard XML called GML (geographic mark-up language). The standards for how spatial features (GML) are captured in XML are defined by the Open GIS Consortium (<http://www.opengis.org/>), an international spatial standards development consortium. Files uploaded to the electronic submission framework (ESF) must be XML files (i.e., <submission_file.xml>), and the files must follow a certain structure. The description of the structure of the data and the relationships between features are referred to as document "schemas." A guide to the structures and content of the submissions can be found at http://www.for.gov.bc.ca/his/esf/index_ressub.htm (Source: *ESF Manual*)

Some tenure holders may require the help of service providers to make electronic submissions. This will be addressed as an implementation and change management issue.

Minimum Requirements:

- All electronic submissions to the Ministry of Forests through the electronic submission framework (ESF) will be in the standard XML/GML submission format.
- One of the two officially adopted projections must be used:
 - Albers Equal Area Conic (BC ALBERS) – NAD83
 - Universal Transverse Mercator (UTM) – WGS (zones 7-11)
- Units: metric

(Source: *RESULTS mapping standards*)



3. Information Requirements

Landbase spatial information can be separated into three broad categories. (See Streamlining Information Access Proposal #3 for more detail.)

1. **Biophysical base** (e.g., roads, contours, water features)
2. **Common features** (e.g., land status and ownership, VRI, orthophotos)
3. **Task-specific information** (e.g., seedlot allocation, volume/grade/ha)

Table 3.1 outlines the information *currently* required for each map in the forest information cycle according to these three categories (although voluntary submission of planned external WTPs is a new proposal).

For maximum efficiency and consistency, we recommend that licensees submit only the task-specific information wherever possible. The exception is when the licensee submits updated feature or base information (e.g., BEC zones for Appraisal; forest cover and built roads for Harvest Completion and Silviculture Reporting). The biophysical base and common features are core spatial information held by government, and can be automatically attached to a licensee's submission for processing by MoFR business areas. This prevents precision-drift as data moves from government to licensees and back again, and eliminates version confusion.

4. Operational Map Representation Requirements

Map representation refers to the visual outputs produced using viewing tools and MoFR systems (such as FTA) to communicate the identity and location of spatial features. Representation may include symbology, colours, line weights, labels, legends, scales, and north arrows. Licensees are required to submit all spatial features in cutting permit or road permit submissions as separate coverages or shapefiles. These features do not need to have a specific representation because the various business areas will apply representation standards and produce output map products for their staff when they receive the submission.

It is important that operational staff (C&E, Engineering, Stewardship, Tenures, etc.) have access to accurate maps that clearly and consistently display all the information they require. This information may vary for each user but could include planned and actual roads, planned and actual cutblocks, planned and actual WTRAs, riparian reserves, water, forest cover, contour lines, culturally sensitive areas (CMTs), special features, and ownership and tenure information. Maps should have representation standards for features that are consistent, match the legend, are printer-friendly, and legible in black and white or photocopy. There remain some challenges to standardized representation that will be addressed outside the scope of this document.



Table 3.1 General information requirements for planning, notification, and reporting. Only information listed under task-specific information, or updates to base information or common features, would be submitted. Because the submission is bundled, a given piece of information would be submitted only once even if required by more than one business area. (Source: *Cruising manual; Appraisal Manuals [Coast and Interior.], Pat Ringwood report recommendations; FRPA; FSP Tracking Project*).

Item	Forest Stewardship Plan	Appraisal Data	Exhibit A	Notification	Harvest Completion Report	Silviculture Reporting
Task-specific information	<ul style="list-style-type: none"> • FDU boundaries • Spatially enabled results and strategies • Unique FSP plan ID • FDU IDs • Client IDs • The Plan document <p>Visit FSP tracking project at: http://www.for.gov.bc.ca/hfp/FSP/about.htm</p>	<ul style="list-style-type: none"> • Status clearance boundaries and cutting boundaries • Harvest areas delineated by harvest method and partial cut percent • Areas subject to specified operation costs estimates (e.g., skidder swing, root disease control) • Geographic midpoint of each block and common junction of the permit • Roads to be built by type (operational, block, winter) including sections to be graveled and or sections that are “wet” (as defined in the appraisal manuals) • Location of roads/structures that are the subject of detailed engineered estimates • Location and type of other developments (e.g., remedial fencing, cattleguards and pipeline crossings) • The map may include other information considered relevant to the appraisal. 	<ul style="list-style-type: none"> • Status clearance boundaries and cutting boundaries/boundaries of Forest Act tenures • Base information: Block boundaries and road centre lines • Point of commencement (e.g., a nearby surveyed parcel corner or a control survey monument. Wherever possible, PoC or one corner on tenure boundaries should be tied by GPS methods, and approximate UTM coordinates provided. If no survey corner is available, PoC should be defined by UTM coordinates derived by suitable GPS methods.) • Boundaries (bearings and distances for straight line segments—field misclosure should be balanced prior to preparation of the tenure sketch—or UTM coordinates for every bend or corner). (For curved boundaries, radials can be defined by bearings and distances or curve centre defined by UTM coordinates. Length of radius and arc 	<ul style="list-style-type: none"> • Projected date for beginning of harvesting or road construction • Location of harvesting or road construction. For large cutblocks made up of multiple patches, patches where harvesting will begin must be identified. 	<ul style="list-style-type: none"> • Actual area harvested (actual cutblock) by silvicultural system • Standards units boundaries (linked to a standards identification number) • Resource/wildlife habitat features 	<ul style="list-style-type: none"> • Seed allocation information • Changes to standards units • Silviculture treatment information • Resource/wildlife habitat features



Item	Forest Stewardship Plan	Appraisal Data	Exhibit A	Notification	Harvest Completion Report	Silviculture Reporting
Task-specific information <i>(continued)</i>		<ul style="list-style-type: none"> For reappraisal data submissions, reference may be made to the original map submitted. Any change to the harvest plan or area of harvest due to a "changed circumstance" (see Appraisal Manual 2.3.2.1) during the term of the cutting authority must be mapped and promptly submitted to the district. 	<p>should be shown.) Ideally, angular and linear dimensions or UTM coordinates would be shown in the body of the plan along each segment or by each bend or corner. For small scales these can be shown in a traverse table or table of coordinates with point numbers in table shown on the map.</p> <ul style="list-style-type: none"> Where a water boundary, road, riparian zone, or no-harvest area along a highway is the boundary of the forest tenure, they can be based on existing surveys, aerial photos, or detailed topographic mapping (prepared at a suitable scale). If the boundary is defined as an offset from these features, the offset distance should be shown. The boundaries of riparian zones should be determined from actual measurement from the water body itself <p><i>(Chapter 52, Timber Harvest Manual)</i></p>			
Common Features (Only updates are required in submission)	N/A	<ul style="list-style-type: none"> Biogeoclimatic zone, subzone, and variant (interior only update) Planned internal reserve timber is must be shown, with internal retention 	<ul style="list-style-type: none"> District lot or section boundaries, subdivisions, highways, other rights of way, mineral claims, and any other survey information 		<ul style="list-style-type: none"> Forest cover polygons (update) (includes stocking status) Actual wildlife tree patches and other retention patches 	<ul style="list-style-type: none"> Forest cover polygons (update); includes stocking status. Actual wildlife tree patches and other retention patches



Item	Forest Stewardship Plan	Appraisal Data	Exhibit A	Notification	Harvest Completion Report	Silviculture Reporting
Common Features (continued)		patches mapped and descriptors of planned dispersed wildlife tree retention	<ul style="list-style-type: none"> Provincial Forests, Parks, and other pertinent administrative boundaries Adjacent <i>Forest Act</i> and <i>Land Act</i> tenures. (FTA) 		(internal and external. Strata containing dispersed wildlife tree retention will be identified, but not necessarily mapped.)	(internal and external).
Biophysical Base (Only updates are required in submission)	N/A	<ul style="list-style-type: none"> Existing roads 	<ul style="list-style-type: none"> Roads Water features 		<ul style="list-style-type: none"> Roads attribute information (roads submitted through ABR) (update) 	<ul style="list-style-type: none"> Roads attribute information (roads submitted through ABR) (update)
Other	N/A	<ul style="list-style-type: none"> Planned external reserves may be voluntarily submitted. 				



Table 4.1 Digital mapping standards. Shows resolution and accuracy standards across business areas, as well requirements for identifiers, reserve timber, non-productive areas, and attribute information attached to each submission.

Item	FSP/FDP	Appraisal	Exhibit A (CP application)	RESULTS submissions (source: Mapping Standards for Results Submissions)	Vegetation Resource Inventory update
RESOLUTION					
Minimum Polygon Size	<ul style="list-style-type: none"> 1 ha (unless otherwise required by legislation) Visit FSP tracking project at: http://www.for.gov.bc.ca/hfp/FSP/about.htm	<ul style="list-style-type: none"> 1 ha (unless otherwise required by legislation) 	<ul style="list-style-type: none"> 1 ha (unless otherwise required by legislation) 	<ul style="list-style-type: none"> The minimum polygon size is 0.25 ha. If there is a business need for smaller than a 0.25 ha polygon, this can be accommodated in the RESULTS database. 	<ul style="list-style-type: none"> Minimum polygon size guideline 2 ha non-vegetated and 5 ha vegetated. RESULTS spatial data > 1 ha will be cut into forest cover
Minimum Resolution: Resolution is the degree to which closely related entities can be discriminated.	<ul style="list-style-type: none"> Two linear features cannot be less than 10 m apart Visit FSP tracking project at: http://www.for.gov.bc.ca/hfp/FSP/about.htm	<ul style="list-style-type: none"> Two linear features cannot be less than 10 m apart 	<ul style="list-style-type: none"> Two linear features cannot be less than 10 m apart 	<ul style="list-style-type: none"> Two linear features cannot be less than 10 m apart 	<ul style="list-style-type: none"> Two linear features cannot be less than 10 m apart
ACCURACY					
Positional Accuracy: Base Map scale	Visit FSP tracking project at: http://www.for.gov.bc.ca/hfp/FSP/about.htm	<ul style="list-style-type: none"> The scale for submissions is 1:5000 for the Coast, and 1:10 000 for the Interior. 	<ul style="list-style-type: none"> The scale for submissions is 1: 20 000 unless otherwise specified by the DM. 	<ul style="list-style-type: none"> The scale for submissions is 1:5000 for the Coast, and 1:10 000 for the Interior. 	<ul style="list-style-type: none"> 1:20 000
Relative Positional Accuracy: specifies how closely the shape of a feature in its coordinate space reflects its true shape on the ground and its relationship to other features in the dataset.	Visit FSP tracking project at: http://www.for.gov.bc.ca/hfp/FSP/about.htm	<ul style="list-style-type: none"> At a scale of 1:20 000, the polygon boundary must be within 20 m of its true NAD83 ground position, but within 10 m is the best practices. (See <i>Appraisal Manual</i>)	<ul style="list-style-type: none"> At a scale of 1:20 000, the polygon boundary must be within 20 m of its true NAD83 ground position, but within 10 m is the best practices. (See <i>Chapter 52</i>)	<ul style="list-style-type: none"> At a scale of 1:20 000, the polygon boundary must be within 20 m of its true NAD83 ground position, but within 10 m is the best practices. 	<ul style="list-style-type: none"> At a scale of 1:20 000, the polygon boundary must be within 1 mm of its true NAD83 map location (i.e., within 20 m of its true NAD83 ground position).
Absolute Positional Accuracy: Absolute positional accuracy specifies how closely the location of a feature in its coordinate space (longitude/ latitude, or a projection plane) reflects its true location on the ground.	Visit FSP tracking project at: http://www.for.gov.bc.ca/hfp/FSP/about.htm	<ul style="list-style-type: none"> All cutblock boundaries should be closed traverses (unless global positioning systems are used) with stations marked, and should be identified at least every 50 m and at distinguishable cutting boundary corners, unless otherwise specified by the DM. Stations should be numbered and identified by metal or plastic tags or blazes, and should be readable for at least 	<ul style="list-style-type: none"> All cutblock boundaries should be closed traverses (unless global positioning systems are used) with stations marked, and should be identified at least every 50 m and at distinguishable cutting boundary corners, unless otherwise specified by the DM. Stations should be numbered and identified by metal or plastic tags or blazes, and should be readable for at least 	<ul style="list-style-type: none"> One tie point must be established within 10 m of its true NAD83 position. 	<ul style="list-style-type: none"> +/- 20 m of boundary



Item	FSP/FDP	Appraisal	Exhibit A (CP application)	RESULTS submissions (source: Mapping Standards for Results Submissions)	Vegetation Resource Inventory update
		<p>3 years after harvesting has been completed.</p> <ul style="list-style-type: none"> Closed traverses should have a 1:100 (1%) standard of closure for scale-based tenures and 1:140 (0.7%) for cruised-based tenures. Where global positioning systems are used, each ground reference point should be within 5 m of its mapped location. <p>Visit Base Mapping and Geomatic Services Branch Specifications and Guidelines at: http://srmwww.gov.bc.ca/bmgs/gsr/gsr_standards.htm</p>	<p>3 years after harvesting has been completed.</p> <ul style="list-style-type: none"> Closed traverses should have a 1:100 (1%) standard of closure for scale-based tenures and 1:140 (0.7%) for cruised-based tenures. Where global positioning systems are used, each ground reference point should be within 5 m of its mapped location. <p>Visit Base Mapping and Geomatic Services Branch Specifications and Guidelines at: http://srmwww.gov.bc.ca/bmgs/gsr/gsr_standards.htm</p>		
Tolerance for differences in area between spatial and aspatial data	<p>Visit FSP tracking project at: http://www.for.gov.bc.ca/hfp/FSP/about.htm</p>	<ul style="list-style-type: none"> Closed traverses should have a 1:100 (1%) standard of closure for scale-based tenures and 1:140 (0.7%) for cruised-based tenures. Where global positioning systems are used, each ground reference point should be within 5 m of its mapped location. <p>Visit Base Mapping and Geomatic Services Branch Specifications and Guidelines at: http://srmwww.gov.bc.ca/bmgs/gsr/gsr_standards.htm</p>	<ul style="list-style-type: none"> Closed traverses should have a 1:100 (1%) standard of closure for scale-based tenures and 1:140 (0.7%) for cruised-based tenures. Where global positioning systems are used, each ground reference point should be within 5 m of its mapped location. <p>Visit Base Mapping and Geomatic Services Branch Specifications and Guidelines at: http://srmwww.gov.bc.ca/bmgs/gsr/gsr_standards.htm</p>	<ul style="list-style-type: none"> The tolerance for differences in area between the aspatial and spatial data is: <ul style="list-style-type: none"> Openings < 20 ha = 1 ha or 25% of the opening size, whichever is less Openings > 20 ha = 5% of the opening size 	<ul style="list-style-type: none"> Areas are calculated from spatial data.
IDENTIFIERS					
Opening/ cutblock ID	<p>Visit FSP tracking project at: http://www.for.gov.bc.ca/hfp/FSP/about.htm</p>	<ul style="list-style-type: none"> A block must have a unique ID in the harvest authority application and approval 	<ul style="list-style-type: none"> A block must have a unique ID in the harvest authority application and approval 	<ul style="list-style-type: none"> A unique BC Grid System mapsheet number and a unique opening number by mapsheet 	<ul style="list-style-type: none"> Openings will be identified and cross-referenced to RESULTS data using the unique Opening



Item	FSP/FDP	Appraisal	Exhibit A (CP application)	RESULTS submissions (source: Mapping Standards for Results Submissions)	Vegetation Resource Inventory update
		stages. <ul style="list-style-type: none"> Patches that are proximal should be provided from the licensees for use and reference by government. The names assigned by the licensees should be used by government. 	stages. <ul style="list-style-type: none"> Patches that are proximal should be provided from the licensees for use and reference by government. The names assigned by the licensees should be used by government. 	will identify the opening. <ul style="list-style-type: none"> A system-generated Opening ID field will uniquely identify the block. 	ID attribute.
Forest cover polygon code	Visit FSP tracking project at: http://www.for.gov.bc.ca/hfp/FSP/about.htm			<ul style="list-style-type: none"> Each unique polygon (stratum) must be assigned a unique alphanumeric code in the spatial file. 	
Retention areas	Visit FSP tracking project at: http://www.for.gov.bc.ca/hfp/FSP/about.htm			<ul style="list-style-type: none"> Each retention polygon has associated with it a cutblock identifier, reserve label, and inventory information (this will default to the previous inventory label if updated information is not submitted at the post-harvest submission) 	<ul style="list-style-type: none"> Each retention polygon has associated with it a cutblock identifier, reserve label, and inventory information (this will default to the previous inventory label if updated information is not submitted at the post-harvest submission)
Standards units code	Visit FSP tracking project at: http://www.for.gov.bc.ca/hfp/FSP/about.htm			<ul style="list-style-type: none"> Each unique polygon (stratum) must be assigned a unique alphanumeric code in the spatial file. 	
RESERVE TIMBER					
When reserves must be separate polygons	<ul style="list-style-type: none"> OGMAs must be mapped as separate polygons. Visit FSP tracking project at: http://www.for.gov.bc.ca/hfp/FSP/about.htm	<ul style="list-style-type: none"> If reserves affect the way stumpage is to be determined, they must be separate polygons. 		<ul style="list-style-type: none"> Reserves with different Reserve Type codes in the RESULTS database must be separate polygons. 	<ul style="list-style-type: none"> Reserve shapes > 1 ha reflecting differences in vegetation will be updated in the VRI
When WTPs must be mapped (minimum size)	Visit FSP tracking project at: http://www.for.gov.bc.ca/hfp/FSP/about.htm	<ul style="list-style-type: none"> All WTPs greater than 1 ha should be mapped. 		<ul style="list-style-type: none"> All WTPs greater than 0.25 ha, which are associated with the opening, must be assigned a unique polygon ID. 	<ul style="list-style-type: none"> WTP shapes >1 ha reflecting differences in vegetation will be updated in the VRI
NON-PRODUCTIVE AREAS (NP)					
When NP areas must be different polygons	Visit FSP tracking project at: http://www.for.gov.bc.ca/hfp/FSP/about.htm	<ul style="list-style-type: none"> > 1 ha 	NA	<ul style="list-style-type: none"> NP areas with different stocking status / stocking type combinations in the RESULTS 	<ul style="list-style-type: none"> NP shapes >1 ha reflecting differences in vegetation will be updated in the VRI



Item	FSP/FDP	Appraisal	Exhibit A (CP application)	RESULTS submissions (source: Mapping Standards for Results Submissions)	Vegetation Resource Inventory update
ATTRIBUTES FOR EACH SUBMISSION					
<p>Digital attribute standards</p>	<p>Visit FSP tracking project at: http://www.for.gov.bc.ca/hfp/FSP/about.htm</p>		<p>ESF Industry Guide to forest tenure lists required data fields. Visit: http://www.for.gov.bc.ca/his/esf/index_guide.htm</p>	<p>• Each new opening results in one database file. The attribute file schema will follow the "Electronic Submission Framework (ESF) RESULTS Submission Guide", July 26, 2004. The spatial file will contain:</p> <ul style="list-style-type: none"> • mapsheet number • opening number • polygon/strata • SU code <p>Area summaries of the SU code will result in the net area to be reforested.</p>	<p>Visit Standards at: http://srmwww.gov.bc.ca/vri/standards/index.html</p>