

Forest Products Modernization

Sale Layout Issue Paper

A strategic effort designed to better align our culture, policies, and procedures with current and future forest restoration needs in order increase the pace and scale of restoration, improve forest conditions, and improve efficiency of forest product delivery.

Introduction

Working with agency leaders and employees across the country, the Forest Products Modernization team has identified several needs that must be addressed to move toward our long-term goal of modernizing our forest products delivery system. The team is examining various aspects of the delivery system to determine if changes are needed, including in training, policies, technological efficiencies, systems changes, and business opportunities. The team seeks to ensure forest products delivery practices, policies, and guidance are flexible and adaptable to the agency's and the public's restoration needs.

The Forest Products Modernization team seeks to: 1) determine which sale layout policies and procedures (including cruise standards and design, tree designation and paint, and unit and sale boundary delineation) can be altered or eliminated to increase efficient and effective timber sale layout; and 2) streamline policies and procedures for logging systems transportation analysis, funds availability for future haul routes, availability of employees with technical expertise, and partner collaboration. The team also may consider opportunities to use **designation by description (DxD)** and **designation by prescription (DxP)** more effectively to reduce sale preparation costs and achieve acceptable results on the ground.

Where are we now?

Sale layout activities (Gate 3) are outlined in chapter 40 of the timber sale preparation handbook (2409.18).

Tree designation since the passage of the 2014 Farm Bill

Multiple ways exist to designate trees for removal. The primary method on Forest Service System lands is by marking a "cut tree" or a "leave tree" using individual tree marking (ITM) with tracer paint. Two other approved methods for designating timber, DxD and DxP, do not require paint and eliminate the costs and time associated with ITM, thereby reducing sale preparation expenses.

DxD and DxP

DxD is a method for designating timber in which the individual trees are specified for removal based on a measureable desired outcome after the tree is felled. DxP is a method for designating timber based on a detailed prescription for the sale area. Paragraph 14(g)(1) of the National Forest Management Act of 1976 (16 United States Code (U.S.C) 472a) (NFMA), states: "Designation, including *marking when necessary*, designation by description, or designation by prescription, and supervision of harvesting of trees, portions of trees, or forest products shall be conducted by persons employed by the Secretary of Agriculture." [Emphasis added.]

Under paragraph 14(g), a marking contractor who does not have an interest in the purchase or harvest of the marked timber and who is not employed by the purchaser of the trees may be utilized. Under the stewardship authority, however, persons other than those employed by the Secretary of Agriculture may designate (or mark as necessary) timber pursuant to a stewardship contract that

meets Forest Service land management goals as set out in a silvicultural prescription (16 U.S.C. 6591c(d) (5)), (Forest Service Handbook (FSH) 2409.19, 61.3).

Section 8303 of the 2014 Farm Bill (Pub. L. 113-79) amended section 14(g) of NFMA to authorize use of DxP and DxD as valid methods of designating trees or forest products for harvest and removal. Section 8303 also authorizes the use of FS post-harvest cruises as a valid method of supervising sales that use DxP and DxD. Existing

Contract Type	# of Contracts	Contract Type	# of Contracts
13	117	33T	15
13T	299	3P	93
1449	87	3S	43
1449T	32	3T	261
2	377	4P	94
21	17	4T	951
21T	43	6	777
33	53	6T	1,502
TOTAL	1,025		3,736
GRAND TOTAL	4,761		

From 2014 (Farm Bill passage) to the present, the Forest Service has sold 4,761 contracts [NRM-TIM data from January 26, 2018] using various contract instruments.

policy limits DxD to scaled sales due to uncertainty associated with being unable to cruise the specific trees that are designated to be cut.

Sale area boundaries are currently marked with tracer paint or left unmarked where there are discernible boundaries, such as roads. Use of virtual boundaries to designate a sale area boundary is currently being explored in a pilot project on the Fremont-Winema National Forest and has shown a reduction in time necessary for boundary layout.

Need for change

There is a need to fully explore when designation by description and designation by prescription can be used to implement forest projects in a manner that increases financial efficiency and accelerates the pace and scale of restoration. Only 76 contracts issued since 2014 included DxD provisions, compared to 782 sales during the same time that included DxD provisions (29% of all 2400-6, 6T and 2400-13, 13T sales).

All resources involved in sale preparation activities need to be integrated into one tablet-based geodatabase to track all resource inputs into the sale preparation process in order to simplify creation of sale packages (and associated documents, such as road packages, B-D plans, etc.). The agency also needs to better understand the impact of road package costs on feasibility and salability of contract packages.

How do we get there?

To address the need for change and get where we want to go through modernization, we recommend the following actions be considered. Some of these are underway now (ongoing actions) and are recommended to continue.

Ongoing actions

- * Chief's 2/20/2018 letter issued direction to use the most efficient methods to cruise timber. Use the latest technology, such as lasers and handheld data recorders, and make available to crews. Assess and purchase additional recorders and lasers as needed.
- * Chief's 2/20/2018 letter issued direction to implement new national sampling error standard for cruising that changes the sampling error to 30% for scales sales over \$120,000 in value, where appropriate.
- * Chief's 2/20/2018 letter issued direction to encourage greater use of DxD.
- * Designed national DxD training and implemented eight national DxD courses in FY 2018, with eight more planned in FY2019.
- * Completed draft direction for the use of virtual boundaries.
- * Develop decision-making framework for various tools (contracts, agreements) for forest restoration.

Additional recommended actions

- * Make permanent the guidance for DxD outlined in wo-id 2440-2016-1 before April 19, 2018.
- * Have all regions complete designation by prescription policy in FY 2018, consistent with national policy.
- * Complete development of an Android version of FSCruiser.
- * Develop Android version of TwoTrails for area determination.
- * Develop standard process to create geodatabase to create sale logging plans to be used by all resources involved in sale package preparation. Related to this, make available training in the use of arc collector.
- * Re-emphasize the need to integrate project feasibility analysis to determine the costs related to sale and contract package development, especially in relation to road costs. Transportation is a huge cost to the timber sale. Better planning may help reduce transportation costs. Explore the possibility of force account or contracts prior to harvest contracts to reduce large road package costs that may affect contract salability.
- * Issue direction for the use of digital (virtual) timber sale boundaries. Implement virtual boundary pilot projects to document the time necessary to implement virtual boundaries; develop and expand its use.
- * Update FSH 2409.12 Cruising Handbook 1) Chapter 40, Exhibit 41.1 to update the new sampling error for cruising scaled sales valued at greater than or equal to \$120,000 to 30% sampling error, and 2) update Chapter 70 at 71.4 to update the language for Designating without Marking Individual Trees to meet the current guidance under the Farm Bill and outlined in FSM 2441.03.
- * Implement and evaluate Digital Prescription Guide on DxD units on Coconino and Kaibab National Forests 4FRI Digital Prescription Guide (R3). This is already documented as a success story.
- * Implement an unmanned aerial system (UAS) for timber cruising, sale administration, and monitoring. For UAS, complete the aviation business case to implement a training program and allow purchase of small drones (less than \$2,500) by field units
- * Investigate the use of remote-sensed technology (e.g. LiDAR, structure for motion) for volume estimation.
- * Evaluate frequency of tree measurement check cruising requirements and reduce it to 1 in 2 or 1 in 3, if feasible, on low-value, low-risk sales.
- * Evaluate less costly paint to designate trees as is done in sales designated by States acting as our agent in Good Neighbor Authority sales. Consider the health and safety aspects in association with cost saving.