

Forest Products Modernization Strategic Framework for Long- Term Action: 2019–2023

The Amador-Calaveras Consensus Group Cornerstone Project in the Eldorado and Stanislaus National Forests, California. Photo by USDA Forest Service.

What is Forest Products Modernization

The goal of Forest Products Modernization (FPM) is to better align the U.S. Department of Agriculture, Forest Service culture, policies, and procedures with current and future forest restoration needs to increase the pace and scale of restoration and improve forest conditions. We are striving for efficiencies (time and cost) in how we manage forests, deliver forest products, and carry out timber sales to increase acres treated and volume produced.

Why Modernize?

About 80 million acres of the lands we manage as an agency are at risk of catastrophic wildfires or abnormal levels of insect and disease impacts. Drinking water, homes, communities, wildlife habitat, historic places, sacred sites, recreation opportunities, and scenic vistas are among the many values at risk.

Our fiscal year 2019 timber harvest and fire risk mitigation goals are to sell 3.7 billion board feet of timber volume and to treat 3.4 million acres—all while facing increasingly constrained budgets and resources. Our systems served us well under very different forest and staffing conditions, but we need to evolve to keep up with changing climate, technology, and markets. The magnitude of the challenges we face today demands that we use every authority, tool, and technology available to improve forest conditions, support rural economies, and deliver excellent customer service while managing workloads and caring for the health and safety of employees.

How We Are Modernizing

This framework outlines a path to better integrate our forest management program with other U.S. Department of Agriculture, Forest Service programs and provide employees with tools and support to increase active management of National Forest System lands. We are incorporating feedback and ideas from hundreds of employees and partners to identify how we can improve by:

- Investing in **People** through improving recruitment and retention strategies and increasing training and education opportunities for employees.
- Expanding use of new **Technology** to increase efficiency.
- Improving **Business Practices** to be more responsive to employee and customer needs.
- Updating **Policy** to support modernized practices and processes.

We will achieve this through innovation and reasonable risk-taking, finding efficient ways to deliver forest products, and sharing stewardship of the land with States, Tribes, and industry partners.

Continuous innovation over the long term is critical to our agency's ability to improve conditions of forests and grasslands, provide excellent customer service, enhance recreation opportunities, and inspire and empower employees. Forest Products Modernization is not a strategy with an end date or finish line; it must become part of our culture. This strategy calls on every employee to be an advocate for change and innovation, continually seeking new and better ways to approach the day-to-day work and strengthen relationships with partners to find creative solutions to shared problems.

What We Have Done

Since initiating the FPM effort in June 2017, we have collaboratively reviewed the forest products delivery system. We have collected feedback and ideas from more than 150 partners, including industry, and more than 1,000 agency employees, resulting in more than 100 modernization actions added to our project pipeline.

We solicited ideas from solution teams made up of district, forest, regional, and Washington Office employees and more broadly through a dedicated FPM email address, a suggestion box on the national SharePoint site, and a series of virtual feedback sessions. A summary of how we

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used solution team inputs is available at Solution Team Recommendations Review Workshop. Employees who submitted ideas via other means can see how we are using their feedback in a centralized Idea Capture Tool and innovation pipeline.

About two-thirds of the modernization actions generated are either complete or underway (see attachment 1 for a summary of completed actions). These actions are yielding results. Since 2016, we:

- Increased capacity and institutional knowledge by **training** more than 2,300 employees in 20 forest management-related courses and **hiring** 300 employees through focused Pathways recruiting events.
- Increased **digital technology use** for timber cruising to nearly 90 percent by providing digital equipment, software, and training to all regions. Digital technologies, when compared to traditional methods (pen, paper, compass, and traversing), increase data quality and reduce time spent in the field by roughly 30 percent.
- Increased the number of timber sale contracts awarded using **designation by prescription (DxP) from 5 to 55**. DxP reduces both time spent in the field on sale layout and the cost of tree-marking paint, saving the agency roughly \$70 per acre in sale layout costs.
- Increased timber volume awarded using **Good Neighbor Authority (GNA) from 22 to 89 million board feet in 2018**. Using GNA and stewardship contracts increases capacity to sell timber, allowing States and other entities to prepare, sell, and administer sales on National Forest System lands.
- Increased **timber sale acres treated and acres treated to reduce fire risk by 20 percent** and sold 3.2 billion board feet in FY 2018—the first time we exceeded 3 billion board feet in 20 years. We achieved this partly through use of new tools and authorities granted by Congress and largely through employees working longer and harder to make it happen. We will continue to expand use of new tools, processes, and authorities to manage workloads and ensure employee well-being.

We anticipate more improvements as we update our directives, streamline contracts, appraisals, and databases, and fully implement improved business practices. For more details on key accomplishments and benefits, see attachment.

Where We Are Going?

- **People:** We are partnering with Human Resources Management to improve recruitment and retention of employees, developing and expanding training resources including academies and task books for career advancement, addressing qualification disparities in the

forester and forestry technician series, and increasing the capacity of existing staff through consolidation and streamlining of certifications.

- **Technology:** We are modernizing the Timber Information Manager application; deploying new technologies (handheld data recorders, tablets, and lasers); expanding the use of geospatial and remote sensing (e.g., Light Detection and Ranging and unmanned aerial systems) for inventory, monitoring, boundary designation, and volume estimation; and partnering with the Chief Information Office to expand Wi-Fi and broadband access to forest and district offices to support digital and networking capabilities.
- **Business Change:** We are simplifying contracts and appraisals to mitigate challenges associated with low-value material and increase timber sale outputs; leveraging employee, partner, and private industry expertise to improve program and project management skills across the agency; establishing a cross-deputy working group focused on forest products markets and utilization to help us better evaluate timber sale viability and mitigate issues with low-value material; and scaling up lessons learned and best practices for use of GNA, stewardship agreements, and designation by prescription.
- **Policy:** We are updating our timber management directives to reflect new authorities and provide clear direction and technical guidance on new procedures; coordinating with the Environmental Analysis and Decision Making (EADM) team to streamline the integrated resource analysis, proposed action development, and National Environmental Policy Act (NEPA) analysis steps of timber sale planning; and working with the Office of Regulatory Management Services to maintain a searchable, web-based agency policy library.

For more details on priority actions, expected benefits, and timelines for implementation, see attachment 2.

How We Will Get There: Keys to Success

To ensure the success of FPM over the long term and demonstrate a commitment to continuous innovation, employees at every level of the agency need to become active learners, innovators, idea generators, advocates for change, and reasonable risk-takers. Specifically, we as an agency will:

- **Take ownership of and accountability for innovation.** This effort will have the most impact when leaders model change by giving line officers and employees the discretionary decision space to innovate and by rewarding employees who are finding efficiencies, contributing to modernization goals, and mentoring others.

- **Continue to evolve as a learning organization** by supporting peer-to-peer learning and sharing new ideas, lessons learned, and best practices to ensure that actions and programs are continuously evaluated and improved. Create virtual and in-person learning networks, communities of practice, or similar mechanisms for education and learning around new tools and techniques for field personnel.
- **Create a strong partner network** that advances mutually beneficial actions in support of a modernized forest products delivery system and provides a forum for feedback and evaluating actions in terms of costs, benefits, and risks. The FPM core team will establish a partner team with representation from private industry and other stakeholders interested in forest restoration efforts.
- **Implement an operational workflow** that facilitates innovation by establishing a national FPM leader, utilizing existing working teams to develop solutions, identifying regional advocates and/or coordinators, and staffing a national training cadre. Team up with other efforts (e.g., Collaborative Forest Landscape Restoration, Shared Stewardship, National Technology Development Center, EADM) to leverage efforts and implement innovative ideas.
- **Create and implement a project management structure that reflects agency priorities** by increasing capacity in the Washington Office and in the field. We will do this by assigning an FPM project manager and team in the Washington Office to capture, manage, and execute innovative ideas and by strengthening professional project management skills in the field. This will help to ensure we incorporate flexible and agile decision making into our modernization efforts and formalize project management.
- **Better integrate the Forest Products program's planning and decision making** with other deputy and resource areas including fuels, land management planning, NEPA, Chief Information Officer, and business operations to ensure that solutions generated are actionable and aligned with other resource needs and priorities.

Measuring and Communicating Results

To increase transparency of the FPM effort and measure the impact of modernization actions, we will

- **Share progress and updates on a regular basis** through monthly, quarterly, and annual communications with internal and external audiences through a variety of channels.
- **Implement metrics** to regularly measure, monitor, and report progress over time.
- **Evaluate measures and indicators annually and adjust as needed.** We will use results to course-correct modernization efforts if goals are not being attained.

For more details on measuring results, see attachment 3.

Conclusion

Modernization is never done. As we implement several of the solutions already identified by employees and partners, we will continue to solicit and collect feedback, ideas, best practices, and success stories across the country. We will use this information to update this framework as needed and to support our employees in the field.

Our ability to fulfill our mission to sustain the health, diversity, and productivity of the Nation's forests over the long term depends on our ability to adapt to ever-changing markets, technology, and ecological conditions. This framework seeks to provide employees with the support, tools, and guidance necessary to take risks, apply new ideas and technologies, and strengthen partnerships.

For more information about the FPM effort, including available tools, resources, training, how to share ideas and get involved, see the FPM website and the FPM SharePoint site (internal).

Attachment 1. Primary Accomplishments to Date: Fiscal Year 2017-2018

Accomplishments	Benefits Realized
People	
Established forest management training website and calendar. Offered updated and new courses (e.g., Designation by Prescription (DxP), stewardship contracting, Good Neighbor Authority (GNA) agreements, national advanced silviculture program, basic sale administration, and timber sale preparation).	We reached more than 2,000 students with these improved training approaches in 2017-2018. These courses address skill gaps and expand knowledge across the workforce for how to apply new authorities.
Initiated a new timber sale administrator academy.	Improved sale administrator skills through an assigned mentor and on-the-ground experience administering sales with different logging systems.
Initiated a series of logging systems training courses.	Increased awareness and knowledge regarding different logging systems for a variety of employees to better understand capabilities and limitations; improved timber feasibility analyses when designing timber sales.
Hired 300 field employees through focused Pathways recruitment at Society of American Foresters conferences and other events. Brought on more than 40 mentors in timber and silviculture through the Agriculture Conservation Experienced Services program.	Increased workforce capacity in the forester and forestry technician series and improved on-the-job mentorship for new employees.
Changed agency policy to allow recertifying experienced timber cruisers every 2 years instead of annually.	Streamlined annual recertification process to be more cost effective and still meet quality standards.
Technology	
Piloted the use of timber sale preparation tools and techniques with partners (e.g., virtual boundaries, Light Detection and Ranging for resource assessments, and deck scaling) and produced guide books.	Reduced costs (digital approaches allow 40 acres to be designated per day instead of 5 acres). Improved safety, reduced time in the field, and increased data accuracy.
Purchased more than a half million dollars in data recorders, lasers, and tablets for timber cruising, updated software, and increased training.	Improved data collection and processing speed and accuracy, more efficient cruising methods, and increased safety of crews in measuring trees.
Business Change and Policy	
Increased use of GNA, stewardship agreements, and use of DxP techniques.	DxP reduces time in preparing a timber sale (\$70/acre); GNA expands ability to treat more acres by leveraging State and Tribal capacity.
Developed a market-based appraisal system and decision tree (a tool to identify the most efficient appraisal method).	Better assessment of low-value markets. Decreased time to complete an appraisal for low-value material.
Changed agency policy to allow a 30-percent sampling error for cruising instead of a 20-percent sampling error for scaled sales more than \$120,000.	Decreased field sampling while still developing a reasonable estimate of volume for scaled sales. Saves field time and decreases safety risks for crews cruising in difficult terrain/hazardous conditions.
Established national minimum rates for all species and products in nonstewardship sales at \$0.25 per hundred cubic feet or equivalent. Encouraged use of new "Best tool decision tree" and "appraisal decision tree" to help select the most appropriate contract and appraisal process to use.	Aid in the sale of low-value material (low grade, low quality, or material with a lengthy distance to market) to meet management objectives, improve forest conditions, and reduce no-bid restoration projects.
Expanded Knutsen-Vandenberg (KV) Authority, the assessment rate for Permanent and Trust funds, and provided implementation direction.	Added flexibility in the use of KV authority and collected timber sale receipts so that these funds could be used outside the sale area to meet resource management objectives.

Attachment 2. Action Plan: Fiscal Years 2019-2023

Priority Action	Expected Benefits	When ²
People		
Partner with Human Resources Management (HRM) to improve recruitment and retention for foresters, forestry technicians, and those with logging systems expertise (address disparities in the 460 and 462 series); standardize position descriptions; develop task books to build skillsets; leverage Pathways and Agriculture Conservation Experienced Services programs for employees and mentors. HIGH'	More stability within the agency for accomplishing forest management work. Improved employee well-being and job satisfaction through enhanced mechanisms for hiring, learning, and employee development.	Fiscal Year (FY) 2019-2020: Finalize and implement approved, high-leverage actions. FY 1921-1923: Continued work.
Create Integrated Line Officer Academy (consolidate the current offering of 11 different courses). HIGH'	An integrated and cost-efficient approach to key responsibilities of line officers in resource management.	FY 2019-2020: Collaborate with HRM and other Director areas to develop proposal for Executive Leadership Team (ELT)/National Leadership Council (NLC) review. FY 2020-2021: Based on ELT/NLC feedback, build course and begin offering academy.
		FY 2022-2023: Continue offerings.
Review certification timelines and procedures for sale administrators, silviculturists, timber sale contracting officer's representatives, and timber cruisers to increase flexibility, efficiency, and effectiveness. HIGH'	Streamlined procedures for ensuring the right sized pool of qualified employees to address the growing workload associated with timber sale preparation and administration.	FY 2019-2020: Finalize and vet recommendations. FY 2021-2022: Implement approved changes and incorporate into directives and training.
Implement new timber sale administrator academy. MEDIUM'	Improved sale administrator skills through an assigned mentor and on-the-ground experience administering sales with different logging systems.	FY 2019-2023: Annually schedule, announce, and execute academy to meet demand.
Implement new logging systems training courses. MEDIUM'	Increased knowledge among a variety of employees on different logging systems to better understand capabilities and limitations. Improved timber feasibility analyses when designing timber sales.	FY 2019-2023: Annually schedule, announce, and execute courses to meet demand.
Technology		
Increase use of geospatial and remote sensing (e.g., Light Detection and Ranging and Unmanned Aerial Systems technologies) for resource assessments, volume estimation, and boundary designation. Consider data management infrastructure and governance implications with any new tools, including corporate database connections. HIGH'	Increased speed of resource assessment, area determination, and volume estimation across large landscapes at reduced cost. Timelier project assessments. Increased field crew safety.	FY 2019-2020: Increase the number of units testing the technology and studying cost and benefits by 5-10%. FY 2020-2021: Based on testing results, increase agency-wide application and use by 10-20%.

Deploy approved technologies for timber cruising field data collection: handheld data recorders, lasers, tablets, supporting software, and training. Consider data management infrastructure and governance implications with any new tools, including corporate database connections. MEDIUM'	Improved speed of data collection and increased data quality, which can save 30% in timber cruising time.	FY 2019-2020: Continue to increase use until 95-100% use is reached and maintained.
Priority Action	Expected Benefits	When ²
Partner with the Chief Information Office (CIO) to expand Wi-Fi and broadband access to units to support digital and networking capabilities necessary for modernization agency-wide. MEDIUM'	Improved Wi-Fi capabilities and internet speed on rural ranger district offices to fully implement digital technologies.	FY 2019: Prioritize offices using regional and CIO input. FY 2020-2023: Implement in phases, using prioritized list.
Business Change		
Modernize the Timber Information Manager application and develop a new gate system/project management application that facilitates the timber sale planning process. HIGH'	Improved development and tracking of timber sales. Leverage this application to assist the field in developing timber sale contracts and executing timber sale steps from initial planning (gate 1) through sale implementation (gate 6). Decreased time spent managing timber sale preparation data.	FY 2019: Charter team and develop business requirements that incorporate human-centered design principles. FY 2020: Develop schedule for gathering user input and identifying phases of work, begin implementation. FY 2020-2023: Implement in phases.
Increase program and project management skill sets for managing the timber sale process, including the increased use of spatial analysis tools to prioritize restoration treatment areas. Ensure connections with all modernization initiatives, including environmental analysis and decision making and special uses. MEDIUM'	Improved skill sets and access to tools, training, and resources for building landscape treatment scenarios, and efficiently managing the timber sale process; reduction in employee time and effort necessary for these steps.	FY 2019: Charter team and develop recommendations. FY 2020: Develop schedule for gathering user input and identifying phases of work, begin implementation. FY 2021-2023: Implement in phases.
Implement a streamlined appraisal process that includes decision trees and other tools. Move toward a web-based consolidated appraisal system. MEDIUM'	Reduced complexity of timber sale appraisal processes, where needed, and ensure timber sale appraisals are done efficiently and effectively commensurate with the value of the sale.	FY 2019-2020: Execute streamlining procedures. FY 2020-2023: Develop and launch web-based system.
Establish a forest products utilization and markets cross-deputy working group. MEDIUM'	Improved access to information that can help agency decision makers better understand timber sale viability by assessing and characterizing local markets and how this information can contribute to achieving timber and restoration targets and provide a sustainable timber supply to local and regional forest product industries.	FY 2019: Charter team and develop recommendations. FY 2020: Vet recommendations and begin implementation.

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Priority Action	Expected Benefits	When ²
Increase volume produced through Good Neighbor Authority (GNA) and stewardship authorities. MEDIUM'	Implement authorities from the 2014 and 2018 Farm Bills that increase efficiencies and capacity. GNA expands our ability to treat more acres by leveraging State, counties, and Tribal capacity.	FY 2019-2023: Increase GNA volume annually with a goal of a 10-20% increase by 2023. Maintain the contribution of stewardship agreements to total volume, nationally, at 25-30%.
Increase use of designation by prescription (DxP) and weight-scaling. MEDIUM'	Implement authorities from the 2014 and 2018 Farm Bills that increase efficiencies and capacity. DxP reduces time in preparing a timber sale (about \$70/acre) and weight-scaling allows sale of logs by weight.	FY 2019-2023: Continue to increase use annually with a goal of a 10-20% increase agencywide by 2023.
Implement contract and permit improvements. These include but are not limited to updating training and tools; renumbering contracts; finalizing contracting mechanism decision trees; updating 2400-2 and 2400-1 permits; updating 2400-13/13T contract, developing web-based advertising software platform; and reviewing stewardship contracting processes. LOW'	Improved consistency, reduced complexity, and increased efficiency in developing contracts and permits. Increased flexibility in removing small amounts of timber. Simplified process for selecting the most appropriate instrument to meet restoration objectives.	FY 19-20: Using partner input, finalize and implement short-term recommendations and develop schedules and action plans for long-term needs. FY 2021-2023: Continue to implement efficiencies in phases.
Review grants and agreements processes and procedures to determine if improvements are needed. LOW'	Improved consistency, reduced complexity, and increased efficiency.	FY 2022: Form cross-deputy team to identify potential needs for change and develop recommendations. FY 2023: Begin implementing approved changes.
Policy		
Finish forest management directives revisions to various chapters in 15 handbooks and manuals. MEDIUM'	Updated forest management directive system (manuals, handbooks, and information references) to reflect new authorities, laws, and regulations and identified process-efficiency improvements.	FY 2019-2021.

Priority Action	Expected Benefits	When ²
Institute an annual, repeatable process for updating and maintaining agency handbooks, manuals, and information references. LOW¹	Reduced timeframes for incorporating necessary updates into the forest management directive system to facilitate quicker adoption agencywide.	FY 2021-2022.
Work with regulatory staff to develop and maintain a searchable, web-based agency policy library. LOW¹	Improved ease of use and quicker access to the most current direction.	FY 2022-2023.

¹We will use these high, medium, and low categories to assist in prioritizing actions when necessary. All listed actions are important. The Forest Products Modernization team aims to complete or make significant progress on each of them between FY 2019 and FY 2023, but this is dependent on available staff and funds. We will develop annual work plans to identify and obtain necessary resources for implementing actions. Additional actions may also be identified as new information becomes available.

²See attachment 3 for more details on how we will measure progress toward goals agency-wide.

Attachment 3. Forest Products Modernization Performance Measures

Performance measures are a useful tool to help us understand if we are achieving our modernization goals. We selected 2016 as the baseline year because modernization efforts began in 2017. We will use performance information (at least **annually** and as part of an important **benchmark** in the second quarter of FY 2021) to make adjustments to modernization efforts if we are not realizing effective progress.

The Forest Products Modernization team will work with specialists in organizational performance management and others in FY 2019 to refine and improve this initial set of contextual indicators and performance measures to ensure that we have adequately reflected outputs compared to desired outcomes, linkages to other National Forest System modernization efforts, and how best to diagnose and explore reasons for trends over time, whether up or down.

Goal Statement	Measure or Indicator ¹	2016 Baseline	2023 Goal	2018 Data (% change)
People				
Improve well-being for employees involved in the timber sale process.	Qualitative sensing to gather employee perceptions of shifts in workload, level of leadership support, innovation implementation, and increased efficiency.	TBD	TBD	TBD
Improve service to customers (partners who enter into timber sale contracts, permits, and agreements with USDA Forest Service).	Qualitative sensing to gather customer perceptions of shifts toward increased efficiency and improved service during the timber sale process.	TBD	TBD	TBD
Increase training that contributes to a highly skilled forest management workforce.	Percent increase in number of employees reached and number of forest products delivery-related training courses offered.	915 in 15 courses	TBD	1,520 in 20 courses (+65%)
Increase recruitment that contributes to a highly skilled forest management workforce.	Percent increase in number of employees hired through Pathways internships and recent graduates programs at Society of American Foresters or other events.	110	TBD	165 (+50%)
Technology				
Increase efficiency through use of digital technologies.	Percent increase in number of field crews using data recorders for cruising and sale layout.	60	95-100%	85 (+40%)

Goal Statement	Measure or Indicator ¹	2016 Baseline	2023 Goal	2018 Data (% change)
Business Change				
Increase active management through timber sales.	Percent increase in total number of acres treated with timber sales.	189,705	15-20%	230,180 (+20%)
Improve landscape condition and reduce risk due to wildfire.	Percent increase in total acres of National Forest System lands where final treatment effectively mitigates wildfire risk.	866,110	20-30% ²	1,037,130 (+20%)
Increase timber outputs through volume sold to purchasers.	Percent increase in timber volume sold (million board feet).	2,960	10-20% ²	3,190 (+10%)
Increase efficiency by decreasing time to award a timber sale.	Percent decrease in calendar days from a signed decision following completion of National Environmental Policy Act analysis to award of first timber sale.	425	10-20%	415 (not significant)
Increase efficiency by decreasing unit cost.	Percent decrease in unit cost (ratio of hundred cubic feet produced to the budget provided).	TBD	TBD	TBD
Increase efficiency through use of designation by prescription (DxP).	Percent increase in number of DxP contracts awarded.	5	100%	55 (+685%)
Increase timber volume sold using partnerships .	Percent increase in volume sold under GNA agreements (million board feet).	22,625	10-30% ³	89,175 (300%)
Increase timber volume sold using partnerships .	Percent contribution of volume sold under stewardship projects to total volume sold.	24%	25-30% ⁴	25%
Increase knowledge sharing and innovation implementation across the agency.	Percent increase in number of innovative ideas (for examples, see innovations underway) that move from implementation and testing/validation on a small set of units to multiunit or nationwide application.	TBD	TBD	TBD
Policy				
Ensure timely handbook and manual updates to provide guidance to employees.	Percent decrease in number of out of date forest management directives.	15	100%	15 (no change)

TBD = to be determined.

¹Data presented are approximate and are derived from a variety of sources, including conversations with Washington Office and regional employees and steering teams, reports run from a variety of internal databases including the Timber Information Manager application and Corporate Data Manager; geo-enabled Performance Accountability System reports; Periodic Timber Sale Accomplishment Reports; Forest Service Activity Tracking System; the USDA Forest Service FY 1981, FY 2017, FY 2019, and FY 2020 budget justifications; and the 2018 USDA Forest Service-The Nature Conservancy Master Stewardship Agreement accomplishments report. Data will be continually verified/corroborated as the Forest Products Modernization (FPM) effort continues.

²These measures have assigned targets separate from FPM (USDA Forest Service [FY 2020 Budget Justification](#) [March 2019]).

³Goal is to increase volume produced through Good Neighbor Authority annually by 5-10 percent to attain a 10-20 percent increase nationally by 2023.

⁴Goal is to reach and then maintain a 25-30 percent contribution of stewardship agreements to total volume, nationally.