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2022 Monitoring Report

Landscape Vegetation Analysis (LaVA) Project



Medicine Bow-Routt National Forests and Thunder Basin National Grassland

**In Cooperation with Wyoming State, County, and Local Governments, Non-Governmental
Organizations, and Other Federal Agencies**

Cover Photo: USDA Forest Service, Cooperating Agencies, and the public monitoring the Troublesome Shrub Mowing Project during the public field trip, September 29, 2022. USDA Forest Service photo by MaryGrace Bedwell.

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Appendix 1 Project-specific Monitoring Plan
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Acronyms

ECA	Equivalent clearcut area
HUC	Hydrologic unit code
LAU	Lynx analysis unit
LaVA (Project)	Landscape Vegetation Analysis (Project)
MDF	Mule Deer Foundation
MFEIS	Modified Final Environmental Impact Statement
NEPA	National Environmental Policy Act
PCT	Pre-commercial Thinning
ROD	Record of Decision
SERCD	Saratoga-Encampment-Rawlins Conservation District
SIR	Supplemental Information Report
SOP	Standard Operating Procedure
SRLA	Southern Rockies Lynx Amendment
USFS	USDA Forest Service
WGFD	Wyoming Game and Fish Department
WUI	Wildland-urban interface

Monitoring Report

This document is the 2022 monitoring report for the Medicine Bow-Routt National Forests and Thunder Basin National Grassland's Landscape Vegetation Analysis (LaVA) project. Monitoring and reporting is the fifth and final phase of the LaVA implementation process, which is outlined in the Record of Decision (ROD), Appendix A: Adaptive Implementation and Monitoring Framework.

The goal of monitoring and reporting is to learn from project implementation and adapt future treatments to better meet the objectives of LaVA. The primary intent of this phase is to answer the questions:

- Did we do what we said we were going to do?
- Did we get the expected outcomes?
- Do we need to adjust future treatments?

The ROD requires the use of a set of post-treatment standard operating procedures (SOPs) (LaVA Appendix A, Attachment 5), monitoring of all projects following a generic plan (LaVA Appendix A, Attachment 6), and publication of a biennial monitoring report following the outline in LaVA Appendix A, Output 4. Although not specifically required by the ROD, a monitoring checklist was developed to document use of the post-treatment SOPs and completion of all items in the monitoring plan.

This monitoring report is organized as follows:

- Section 1.0 describes the current state of the project, summarizing information from the Treatment Tracking Workbook (Appendix A, Output 3) and reviewing the completed projects relative to the decision-making triggers (Appendix A, Attachment 1).
- Sections 2.0, 3.0, and 4.0 respond to monitoring plan items for the biological environment, physical environment, and social environment, respectively.
- Section 5.0 responds to monitoring plan items that consider the effectiveness of the project, including achievement of its objectives in a general sense, as well as the effectiveness of individual components of the implementation and monitoring process.
- Section 6.0 describes suggested improvements and modifications to the project in general and specific components of the implementation and monitoring process.

1.0 Current State of LaVA Project

This section summarizes the current state of the LaVA project. Additional details on the state of the project are provided in the [Treatment Tracking Workbook Summary Tables](#).

To date, one project has been completed:

- Troublesome Shrub Mowing
 - Mowing 77 acres of older mixed mountain shrublands in a mosaic pattern to mitigate hazardous fuels; enhance forest and rangeland resiliency to future insect and disease infestations; and restore wildlife habitat. This project was accomplished in partnership with the Wyoming Game and Fish Department (WGFD), Mule Deer Foundation (MDF), and Saratoga-Encampment-Rawlins Conservation District (SERCD) and with input and oversight by the USDA Forest Service (USFS).

A project-specific monitoring plan for this project is provided in Appendix 1. A monitoring checklist for the completed project is provided in Appendix 2. Table 1 lists the focus area and project name, accounting unit(s), year, and acres by treatment type for each completed project.

Table 1 Completed Projects

Focus Area / Project	Accounting Unit(s)	Year Complete	Acres by Treatment Type			
			Stand Initiation	Intermediate	Other	Total
Troublesome Shrub Mowing	Cedar Brush	2022	0	0	77	77
Total	All	All	0	0	77	77

Source: Monitoring checklist, Appendix 2

Table 2 summarizes the status of all projects under LaVA, split by phase (see LaVA Appendix A for phase descriptions), and calculates the amount of each treatment type still available under the LaVA ROD. Treatment area calculations are not final until each project is completed and monitored. Planned projects (Appendix A, Phases 1-3) are expected to change substantially before they are implemented.

Table 2 Project Summary

Category	Acres by Treatment Type			
	Stand Initiation	Intermediate	Other	Total
Approved in ROD	86,119	149,550	52,331	288,000
Completed (Phase 5)	0	0	77	77
Current (Phase 4)	2,910	771	435	4,115
Planned (Phases 1-3)	7,326	13,754	9,715	30,795
Available (future projects)	75,883	135,026	42,104	253,013

Source: Treatment Tracking Workbook Summary Tables, May 2, 2023 version

1.1 Appendix A Trigger Summary

LaVA Appendix A, Attachment 1 contains a list of decision-making triggers that correspond to the issues identified in the Modified Final Environmental Impact Statement. This section summarizes the effects of the monitored projects on Triggers 1 through 11, 13, and 14. Trigger 12 was related to roadless areas and was removed from LaVA Appendix A when roadless areas were removed from the treatment opportunity areas. Additional details on the triggers are provided in the [Treatment Tracking Workbook Summary Tables](#).

1.1.1 Trigger 1: Cumulative Watershed Effects

Trigger 1 addresses cumulative watershed effects using equivalent clearcut area (ECA) as an indicator to determine when stream health assessments are warranted. ECA is not a direct measure of stream health but is rather a tool to account for activities in a watershed that have the potential to affect stream health. ECA is quantified using a model that provides an index of vegetation disturbance and post-disturbance recovery for affected Hydrologic Unit Code (HUC) 7 watersheds. If ECA reaches either 20% in watersheds with known stream health concerns or 25% in watersheds without known stream health concerns, the need for a stream health assessment is triggered. If the stream health assessment

identifies a moderate or high potential for a long-term change to a lower stream health class, adaptive actions such as more rigorous design features or modification or deferral of treatments are implemented.

Table 3 lists the HUC7 watershed(s) affected by each completed project. For each watershed, the pre-project baseline, project change, and post-project cumulative (baseline + project) ECA is given as a percentage of the National Forest System lands in the watershed. Since the watershed reported in Table 3 did not approach the 25% trigger, a stream health assessment was not conducted.

Table 3 Cumulative Watershed Effects of Completed Projects

Focus Area / Project	Watershed		ECA (%)		
	HUC7 ID	Name	Pre-Project Baseline	Project Change	Post-Project Cumulative
Troublesome Shrub Mowing	10180002060301	North Cedar Creek	3.9%	0.0%	3.9%

Source: Treatment Tracking Workbook Summary Tables, May 2, 2023 version

1.1.2 Trigger 2: Wildlife Habitat Improvement

Trigger 2 addresses the proportion of projects that are designed to maintain or improve wildlife habitat. The ROD required that at least three percent of treatments across the LaVA project area be specifically designed to maintain or improve wildlife habitat.

Table 4 lists the focus area and project name, area of total treatments and wildlife habitat improvement treatments, and the proportion of total treatments that are wildlife habitat improvement treatments.

Table 4 Wildlife Habitat Improvement by Completed Projects

Focus Area / Project	Treated (acres)	Wildlife Habitat Improvement (acres)	Proportion of Wildlife Habitat Improvement
Troublesome Shrub Mowing	77	77	100%
Cumulative Total	77	77	100%

Source: Treatment Tracking Workbook Summary Tables, May 2, 2023 version

1.1.3 Trigger 3: Wildlife Security Areas

Trigger 3 addresses cumulative effects to wildlife security areas. The ROD limits removal of security areas by treatments to no more than 30% of the total security area in treatment opportunity areas in an accounting unit.

Table 5 lists the accounting unit(s) affected by each completed project. For each accounting unit, the change in security area caused by the project, along with the pre-project (baseline) and cumulative post-project (baseline - project) extent of security areas available for treatment are listed.

Table 5 Cumulative Effects to Security Areas

Accounting Unit	Focus Area / Project	Security Areas Available for Treatment (acres)		
		Pre-Project Baseline	Project Change	Post-Project Cumulative
Cedar Brush	Troublesome Shrub Mowing	511	0	511

Source: Treatment Tracking Workbook Summary Tables, May 2, 2023 version

1.1.4 Triggers 4 through 9: Lynx

Triggers 4 through 9 address four vegetation management standards in the Southern Rockies Lynx Amendment (SRLA). These triggers and their associated SRLA standards only apply to treatments that are implemented in mapped Lynx Analysis Units (LAUs).

- Trigger 4 corresponds to SRLA standard VEG S1 and addresses limits for conversion of suitable lynx habitat to an unsuitable condition in individual LAUs.
- Trigger 5 corresponds to the wildland urban interface (WUI) exemption to SRLA standards VEG S1 and VEG S2 and addresses limits for use of WUI exemptions in specific, individual LAUs
- Trigger 6 corresponds to SRLA standard VEG S2 and addresses limits for conversion of suitable lynx habitat to an unsuitable condition by management in the last 10 years in individual LAUs.
- Trigger 7 corresponds to SRLA standard VEG S5 and addresses specific limits on the use of pre-commercial thinning (PCT) set in the Biological Assessment for the LaVA project.
- Trigger 8 corresponds to the wildland urban interface (WUI) exemption for all four standards and addresses limits on the cumulative use of WUI exemptions by all projects across the Medicine Bow-Routt National Forests.
- Trigger 9 corresponds to exceptions to SRLA standards VEG S5 and VEG S6 and addresses various incidental damage exceptions to those standards.

Table 6 lists the LAUs affected by each completed project relative to Trigger 4. For each LAU, the amount of conversion caused by the project, along with the pre-project (baseline) and post-project (baseline - project) availability of suitable lynx habitat available for conversion to an unsuitable condition, are listed. Since the project reported in Table 6 was not in an LAU, there is no change in Trigger 4.

Table 6 Status of Lynx Trigger 4 for Completed Projects

LAU	Focus Area / Project	Available for Conversion (acres)		
		Pre-Project Baseline	Project Change	Post-Project Cumulative
N/A	Troublesome Shrub Mowing	N/A	N/A	N/A

Source: Treatment Tracking Workbook, May 2, 2023 version

Table 7 lists the LAUs affected by each completed project relative to Trigger 5. For each LAU, the amount of WUI exemptions used by the project, along with the amount of WUI exemptions available for use pre- and post-project are listed. Since the project reported in Table 7 was not in an LAU, there is no change for Trigger 5.

Table 7 Status of Lynx Trigger 5 for Completed Projects

LAU	Focus Area / Project	WUI Exemptions (acres)		
		Pre-Project Available	Exemptions Used	Post-Project Available
N/A	Troublesome Shrub Mowing	N/A	N/A	N/A

Source: Treatment Tracking Workbook, May 2, 2023 version

Table 8 lists the LAUs affected by each completed project relative to Trigger 6. For each LAU, the amount of conversion caused by the project, along with the pre-project (baseline) and post-project (baseline - project) availability of suitable lynx habitat available for conversion to an unsuitable condition by management, are listed. Since the project reported in Table 8 was not in an LAU, there is no change for Trigger 6.

Table 8 Status of Lynx Trigger 6 for Completed Projects

LAU	Focus Area / Project	Available for Conversion by Management (acres)		
		Pre-Project Baseline	Project Change	Post-Project Cumulative
N/A	Troublesome Shrub Mowing	N/A	N/A	N/A

Source: Treatment Tracking Workbook, May 2, 2023 version

Table 9 lists the LAUs affected by each completed project relative to Trigger 7. For each LAU, the amount of PCT completed by the project, along with the pre-project (baseline) and post-project (baseline - project) availability of PCT, are listed. Since the project reported in Table 9 was not in an LAU and did not include PCT, there is no change for Trigger 7.

Table 9 Status of Lynx Trigger 7 for Completed Projects

LAU	Focus Area / Project	Available for Pre-Commercial Thinning (acres)		
		Pre-Project Baseline	Project Change	Post-Project Cumulative
N/A	Troublesome Shrub Mowing	N/A	N/A	N/A

Source: Treatment Tracking Workbook, May 2, 2023 version

Table 10 lists the LAUs affected by each completed project relative to Trigger 8. For each LAU, the amount of WUI exemptions used by the project, along with the amount of WUI exemptions available for use pre- and post-project are listed. In addition, WUI exemptions available, used, and remaining are totaled for all LAUs and completed projects. Since the project reported in Table 10 was not in an LAU, there is no change for Trigger 8.

Table 10 Status of Lynx Trigger 8 for Completed Projects

LAU	Focus Area / Project	WUI Exemptions (acres)		
		Pre-Project Available	Exemptions Used	Post-Project Available
N/A	Troublesome Shrub Mowing	N/A	N/A	N/A
All	Cumulative Total	11,573	0	11,573

Source: Treatment Tracking Workbook, May 2, 2023 version

Table 11 lists the LAUs affected by each completed project relative to Trigger 9. For each LAU, the amount of other exceptions used by the project, along with the amount of other exceptions available for use pre- and post-project are listed. In addition, other exceptions available, used, and remaining are totaled for all LAUs and completed projects. Since the project reported in Table 11 was not in an LAU, there is no change for Trigger 9.

Table 11 Status of Lynx Trigger 9 for Completed Projects

LAU	Focus Area / Project	Other Exceptions (acres)		
		Pre-Project Available	Exceptions Used	Post-Project Available
N/A	Troublesome Shrub Mowing	N/A	N/A	N/A
All	Cumulative Total	2,893	0	2,893

Source: Treatment Tracking Workbook, May 2, 2023 version

1.1.5 Triggers 10 and 11: Temporary Roads

Triggers 10 and 11 address construction and rehabilitation of temporary roads. The ROD limits construction of temporary roads to no more than 600 miles over the life of the project. In addition, no more than 75 miles of temporary roads may be open at any given time. Trigger 10 addresses these requirements. Trigger 11 addresses timely rehabilitation of temporary roads, within three years of project completion.

Table 12 lists the miles of temporary road constructed and rehabilitated to date for all completed projects. The proportion of temporary roads not rehabilitated within three years and the total miles remaining under the Project decision are listed for the entire LaVA project. Since temporary roads were not needed for the project reported in Table 12, there is no change for Triggers 10 or 11.

Table 12 Temporary Roads – Completed Projects

Focus Area / Project	Constructed (miles)	Rehabilitated (miles)	Not Rehabilitated within Three Years (%)	Remaining in Decision (miles)
Troublesome Shrub Mowing	0	0	N/A	N/A
Cumulative Total	0	0	0%	600

Source: Monitoring checklist, Appendix 2; Treatment Tracking Workbook Summary Tables, May 2, 2023 version

1.1.6 Triggers 13 and 14: Visitor and Permittee Access and Satisfaction

Triggers 13 and 14, which address visitor and permittee satisfaction, are measured based on public feedback rather than quantitative characteristics of individual projects. These issues and consideration of their triggers are addressed during treatment design and public feedback (Phase 2); treatment refinement, field validation, and incorporation of public input (Phase 3); and monitoring and reporting (Phase 5). Monitoring items 11 and 13 (see Sections 4.1 and 4.2) were designed in part to assess achievement of objectives related to these triggers.

2.0 Biological Environment

This section responds to monitoring plan items for the biological environment, specifically timber / silviculture, fuels, wildlife, and noxious weeds and other invasive plants.

2.1 Timber / Silviculture

This section summarizes results for five monitoring items, specifically:

- Aspen treatments and regeneration results (Monitoring Item 2).
- Regeneration within harvest units (Monitoring Item 4a).
- Vegetation structural stage distribution (Monitoring Item 4b).
- Planted seedling survival (Monitoring Item 4c).
- Effectiveness of Implementation Method (Monitoring Item 5).

2.1.1 Aspen Treatments and Regeneration Results

The Troublesome Shrub Mowing project did not include aspen regeneration; therefore, this item was not monitored.

2.1.2 Regeneration in Harvest Units

The Troublesome Shrub Mowing project was not implemented in a forested area; therefore, this item was not monitored.

2.1.3 Vegetation Structural Stage Distribution

This item will be monitored five years post-treatment, in 2027. An initial field review of the completed project indicated that objectives are likely to be met. Mowing appears to have reduced the density and continuity of older shrubs, providing opportunities for more diverse age classes of shrubs to develop (see Photo 1). Additional results for this monitoring item will be provided in future reports.

2.1.4 Planted Seedling Survival

The Troublesome Shrub Mowing project did not include planting of tree seedlings; therefore, this item was not monitored.

2.1.5 Effectiveness of Implementation Method

The Troublesome Shrub Mowing project was implemented under agreement with the WGFD using WGFD equipment and with a WGFD equipment operator. A field review conducted by the USFS, WGFD, MDF, and SERCD showed that this approach to implementation was successful and that all objectives were met. WGFD, MDF, and SERCD are conducting ongoing, quantitative monitoring to assess achievement of objectives. Results of this monitoring will be reviewed by the USFS and included in future reports.

2.2 Fuels

This section summarizes completed fuel treatments and whether those treatments met objectives (Monitoring Item 3).

2.2.1 Achievement of Fuel Treatment Objectives

This item will be monitored one and three years post-treatment, in 2023 and 2025, respectively. An initial field review of the completed project indicated that objectives are likely to be met. Mowing appears to have decreased the height and density of older shrubs, as well as breaking up and compacting the fuel bed, while not adversely increasing the surface fuel load (Photo 1). Additional results for this monitoring item will be provided in future reports.

2.3 Wildlife

This section summarizes wildlife use of treated areas (Monitoring Item 12).

2.3.1 Wildlife Use of Treated Areas

The Troublesome Shrub Mowing project was designed primarily to improve wildlife habitats. An initial field review of the completed project indicated that this objective is likely to be met. No additional information on wildlife use of the treatment unit is currently available. WGFD, MDF, and SERCD are conducting ongoing, quantitative monitoring of this project to assess achievement of objectives. Results of this monitoring will be reviewed by the USFS and included in future reports.



Photo 1: A mosaic of mowed and un-mowed areas, showing reduced shrub height, decreased density of mature shrubs, and reduced fuel continuity, Troublesome Shrub Mowing project. USDA Forest Service photo by Matt Schweich.

2.4 Noxious Weeds and Other Invasive Plants

This section summarizes results for two monitoring items, specifically:

- Invasive plants found and plans for treatment (Monitoring Item 9a).
- Effectiveness of noxious weed / invasive plant treatments (Monitoring Item 9b).

2.4.1 Invasive Plant Detections and Treatment Plans

This item will be monitored one year post-treatment, in 2023. Third year monitoring (in 2025) will depend on the results of the first year monitoring. If noxious weeds or invasive plants are discovered in the treatment unit in 2023, these areas will be prioritized for treatment, as funding and personnel allow. Monitoring of infested areas will continue every other year as necessary. An initial field review of the completed project indicated that no substantial infestations of noxious weeds or invasive plants were present. Additional results for this monitoring item will be provided in future reports.

2.4.2 Effectiveness of Noxious Weed / Invasive Plant Treatments

Monitoring of this item depends on the results of monitoring item 9a. If noxious weeds or invasive plants are discovered in the treatment unit and subsequently treated, this monitoring item will be applied, and results will be provided in future reports.

3.0 Physical Environment

This section responds to monitoring plan items for the physical environment, specifically hydrology, soils, air, and the transportation system.

3.1 Hydrology

This section summarizes efforts to maintain or improve long-term stream health (Monitoring Item 16).

3.1.1 Efforts to Maintain or Improve Long-term Stream Health

The project is located in the North Cedar Creek watershed. GIS data indicate this watershed has a pre- and post-project ECA of 3.9% (Table 3). Treatments such as shrub mowing do not increase ECA because no tree canopy is removed and cut material is left on the ground surface, mitigating the minimal ground disturbance associated with mowing equipment. ECA values below 25% in watersheds without known stream health concerns (such as North Cedar Creek) indicate no concern for adverse cumulative watershed effects, meaning that long-term stream health will be maintained or improved.

Field monitoring for this item will take place one year post-treatment, in the fall of 2023. Depending on the results, additional monitoring could be scheduled in subsequent years. An initial field review of the completed project indicated that soil disturbance was minimal, and no evidence of soil displacement or patches of bare soil caused by the treatment was observed. The treatment is located in an upland setting, well outside the water influence zone of any perennial or intermittent streams, lakes, reservoirs, riparian areas, or wetlands. Additional results for this monitoring item will be provided in future reports.

3.2 Soils

This section summarizes results of the national soil disturbance assessment protocol for mechanical and prescribed fire treatments (Monitoring Item 6).

3.2.1 Results of Soil Disturbance Assessment

This item will be monitored one, three, and five years post-treatment, in 2023, 2025, and 2027, respectively. An initial field review of the completed project indicated that soil disturbance was minimal. No evidence of soil displacement or patches of bare soil caused by the treatment was observed. Additional results for this monitoring item will be provided in future reports.

3.3 Air

This section summarizes prescribed burns and their adherence to smoke limits (Monitoring Item 1).

3.3.1 Adherence to Prescribed Burn Smoke Limits

The Troublesome Shrub Mowing project did not include the use of prescribed fire; therefore, this item was not monitored.

3.4 Transportation System

This section summarizes results for three monitoring items, specifically:

- Road design specifications, how effectively they were implemented, and how effective they were at protecting sensitive resources (Monitoring Item 8a).
- Effectiveness of temporary road rehabilitation techniques (Monitoring Item 8b).
- Effectiveness of level 1 road closure installed devices (Monitoring Item 8c).

3.4.1 Effectiveness of Road Design Specifications

The Troublesome Shrub Mowing project did not include reconstruction or maintenance of any roads; therefore, this item was not monitored.

3.4.2 Effectiveness of Temporary Road Rehabilitation

The Troublesome Shrub Mowing project did not include the use of any temporary roads; therefore, this item was not monitored.

3.4.3 Effectiveness of Level 1 Road Closure

The Troublesome Shrub Mowing project did not include the closure of any Level 1 roads; therefore, this item was not monitored.

4.0 Social Environment

This section responds to monitoring plan items for the social environment, specifically recreation and public involvement.

4.1 Recreation

This section summarizes hunter access and satisfaction in relation to treatments (Monitoring Item 11).

4.1.1 Hunter Access and Satisfaction

The Troublesome Shrub Mowing project did not affect hunter access because it did not change the road or trail system and the treatment did not change the level of effort needed for overland (off-trail) access. Although the project was designed primarily to improve wildlife habitats, its small size is not expected to measurably change hunter satisfaction. The project will incrementally improve habitat conditions for big game, especially mule deer, and could contribute to increased hunter satisfaction across a larger area.

4.2 Public Involvement

This section summarizes public involvement activities, including attendance at meetings/field trips, number of people providing feedback at focus and project stages, and any other participation by the public (Monitoring Item 13).

4.2.1 Assessment of Public Involvement

The Troublesome Shrub Mowing project was presented at the June 9, 2021 LaVA public meeting at the Focus Area phase (see LaVA Appendix A for implementation phase descriptions). The project was discussed at the May 4, 2022 LaVA public meeting at the Preliminary Treatment phase. The project was also shown as a “Future Treatment” and available for comment on the LaVA StoryMap from June 2021 through July 2022. No public feedback was provided during or after the public meetings or through StoryMap.

In September 2022, the first LaVA monitoring field trip took place in the Troublesome Shrub Mowing project area. The public was notified of the field trip through a news release, project web page, and email via the project’s GovDelivery mailing list. Three members of the public, as well as numerous USFS and partner representatives, attended the field trip. Considering the mid-week timing of the field trip, weather, and long driving and hiking distance to the site, attendance was good. The USFS should consider if a weekend trip would have better attendance. Future monitoring field trips should also be announced in the summer version of the quarterly newsletter (see Section 6.2). No other adjustments to outreach were identified.

5.0 Effectiveness of LaVA Project

This section responds to three monitoring items that consider the effectiveness of the LaVA project, specifically:

- Effectiveness of project-specific design features, one treatment unit per treatment type will be evaluated each year (Monitoring Item 7).
- Effectiveness of fuels, wildlife, and rangeland improvement projects and whether treatment objectives were met. In addition to the summary of treatments, each resource area will pick one treatment to track for at least 10 years to monitor effectiveness (Monitoring Item 10).
- Effectiveness of Appendix A (Monitoring Item 14).

5.1.1 Effectiveness of Project-specific Design Features

Appendix A Attachments 2 and 4 list the standard project design features and pre-treatment SOPs, respectively, that apply to all LaVA projects. The implementation checklist for the Troublesome Shrub Mowing Project ([LaVA Project Checklists and Maps](#)) lists the SOPs and design features and indicates which of these are applicable to the project. The checklist provides rationale for design features that are not applicable or that have been modified. In addition to the standard SOPs and design features, the checklist provides an opportunity for resource specialists to identify design features to address project-specific issues or concerns.

Interdisciplinary team members reviewed the SOPs and design features for their resource area. To date, the team has not identified any concerns with the effectiveness of the SOPs or design features. Some members deferred their reviews until the summer or fall of 2023 (or later) to better evaluate how their resource responded to the treatment. These deferred reviews are noted in Appendix 1. Results of the reviews will be documented in Appendix 2 and summarized in future reports.

5.1.2 Effectiveness of Fuels, Wildlife, and Rangeland Improvement Projects

The Troublesome Shrub Mowing project was designed primarily to improve wildlife habitats, with secondary objectives of mitigating hazardous fuels and increasing shrubland diversity and resiliency. An initial field review of the completed project indicated that these objectives are likely to be met. The Troublesome Shrub Mowing project was not designed to improve rangelands, although the project is in an active grazing allotment and may provide a limited increase in forage availability. WGFD, MDF, and SERCD are conducting ongoing, quantitative monitoring of this project to assess achievement of objectives. Results of this monitoring will be reviewed by the USFS and included in future reports.

5.1.3 Effectiveness of Appendix A

The two years covered in this report (August 2020 to August 2022) included planning, implementation, and completion of the first projects under the LaVA decision. This period included the initial application of the process outlined by Appendix A.

The general process outlined in Appendix A has been effectively used for implementation of the LaVA project. As is typical for new and innovative approaches, many details were not included in Appendix A and were addressed through incremental refinement of the process and products. Section 6.0 summarizes these adjustments, which range from correction of typos to clarification of process steps, SOPs, and design features. The biggest change to Appendix A was expansion of the monitoring section, which is discussed in Section 6.5 of this report.

6.0 Suggested Improvements or Modifications to Appendix A

This section describes recommended improvements or modifications to Appendix A, based on the monitoring results discussed in previous sections and identified by the USFS and partners through the LaVA implementation and monitoring process. None of the changes identified to date require consideration in a Supplemental Information Report (SIR) or completion of additional analysis under the National Environmental Policy Act (NEPA).

6.1 Public Involvement

The following items will be added to the public involvement component of Appendix A:

- The USFS will develop and distribute a project newsletter on an approximately quarterly basis. The purpose of the newsletter will be to provide ongoing updates to interested members of the public. The newsletter will be distributed via the GovDelivery mailing list and posted on the implementation web page. It will also be shared with cooperators and tribes.
- The USFS will prepare and distribute letters to all landowners in and adjacent to each focus area shortly after the pre-treatment checklist for the focus area is signed. The purpose of the letter will be to inform landowners of upcoming projects and will be particularly informative for landowners who purchased their properties after completion of the ROD. The letter will describe and include a map of the preliminary treatment areas. Recipients will be determined using the county assessor's database.

6.2 Pre-Treatment Checklist

The pre-treatment checklist has been incrementally updated since the ROD was signed. Compared with the version of this checklist in Appendix A, the following changes were made:

- Several fields were added to the project information on page 1.
- Minor edits were made to the checklist text on page 2 to better align with the focus area-project concept, where one pre-treatment checklist is completed for each focus area and then multiple projects can be developed in a focus area.
- Other non-substantial edits throughout the checklist to correct typos or improve clarity.

6.3 Implementation Checklist

The implementation checklist has been incrementally updated since the ROD was signed. Compared with the version of this checklist in Appendix A, the following changes were made:

- Several fields were added to the project information on page 1.
- Minor edits were made to the information tables on page 1 for clarity and consistency.
- Several resource groups were added to the table on page 2 to ensure that all specialists have reviewed the proposed project.
- Starting on page 4, all of the SOPs and design features from Appendix A are reproduced to document project-level consideration. The SOPs are listed with check boxes to indicate applicability. The design features are presented in table format, with columns to indicate applicability, to provide rationale for non-applicable or modified design features, and to document any project-specific notes.
- The SOPs and design features were reviewed and edited for clarity and consistency. Some edits were needed to ensure the SOPs and design features apply to all projects, not just timber sales. Similarly, some edits were needed to clarify that the SOPs and design features apply to all implementation processes, not just contracts. For example, they apply to Good Neighbor Authority projects and agreements.
- At the end of the SOPs and design features, a section for "Additional Design Features" was added to accommodate protection of resources not identified elsewhere in the checklist.

- Other non-substantial edits were made throughout the checklist to correct typos or improve clarity.

6.4 Monitoring

Appendix A contains substantial requirements for monitoring. Key items include an outline of the monitoring and reporting phase (page 17), Output 4: Monitoring Report Outline (pages 45-46), Attachment 5: Post-Treatment SOPs (pages 75-77), and Attachment 6: LaVA Monitoring Plan (pages 78-79). Although these items provide a framework for monitoring and reporting, they lack sufficient detail on the process used and products of this phase of the project. Since the first LaVA project was monitored in 2022, the following additions and clarifications have been made to the monitoring and reporting phase:

- Process
 - The need to develop project-specific monitoring plans was identified.
 - Primarily to account for broad differences in the types of projects being implemented and the applicable monitoring items and schedule for those projects.
 - See below for additional details.
 - The need for project-specific monitoring checklists was identified.
 - Primary need is to provide structure and documentation for use of the post-treatment SOPs and monitoring items.
 - All specialists who contribute to the implementation checklist need to review the project and assess effectiveness of Appendix A, SOPs, and design features (monitoring items #7 and #14).
 - Monitoring workflow is generally structured as follows:
 1. Develop project-specific monitoring plan
 2. Initial review of projects on the ground
 3. Complete the monitoring checklist. For delayed monitoring items, complete and sign the checklist based on first year's results, with notes on delayed items. Update and re-sign as needed.
 4. Hold monitoring field trip with partners and public.
 5. Prepare monitoring report using information from monitoring checklists. For delayed monitoring items, report first year results in report, then update as needed with future year's data. Append monitoring plans and checklists to the report and update as revised.
 - See below for additional details.
- Monitoring Plan
 - The following changes were made to the generic monitoring plan template:
 - Item 5 was updated to clarify that it applies regardless of implementation vehicle and is not specific to a contract, because some projects will be implemented by agreement or other means.
 - Item 7 was updated to clarify that the review is for all Appendix A SOPs and design features applicable to the project, not just those developed specifically for an individual project.
 - Item 11 was updated to clarify that it will generally be addressed for a larger area. Project-specific information will be summarized in the report to the extent data are available.

- Item 12 was amended to add WGFD as a responsible party.
- Item 12 was updated to clarify that it will generally be addressed for a larger area. Project-specific information will be summarized in the report to the extent data are available.
- Item 14 was updated to clarify that it will be addressed for the LaVA project as a whole, using project-specific examples if applicable.
- Other non-substantial edits to correct typos or improve clarity.
- Monitoring Checklist
 - The new monitoring checklist contains the following sections:
 - Project information equivalent to the implementation checklist.
 - Tables for final accounting of treatment types and acres, as well as temporary roads.
 - A complete listing of post-treatment SOPs and monitoring items, with check boxes to indicate applicability and tables for comments and signatures from each resource specialist.
 - A review and approval section requiring review by the project manager and implementation coordinator and approval by the District Ranger. This section includes an assessment of 1) whether the project was completed in compliance with law, regulation, policy, and ROD; 2) whether the effects were within the scope of the analysis in the MFEIS; 3) whether the need for modification of the implementation process was identified; and 4) whether the need for a SIR or supplemental NEPA analysis was identified.

7.0 Consistency with the MFEIS and ROD

Both the ROD (page 11) and Appendix A (pages 19-20) contain provisions for completion of SIRs at five-year intervals during implementation. These reviews will determine whether treatments would be consistent with and within the context of the MFEIS and ROD. If a SIR determines there is a need to supplement or revise the MFEIS or Appendix A, additional NEPA analysis and public engagement will be conducted. These scheduled reviews are in addition to reviews determined necessary because of unforeseen events and changes to resource conditions that may be identified in the intervening periods.

A SIR was prepared after the Mullen Fire in 2020. The SIR found that the project's treatments would remain within the scope and range of effects considered in the MFEIS and that supplemental NEPA analysis was not needed, despite changes caused by the fire. The SIR demonstrated that the implementation process in Appendix A contains tools that allow the Forest Service to effectively respond to changed conditions. The Forest Supervisor used the SIR to determine that implementation may continue in the Mullen Fire area. Most of the work in the fire area is likely to focus on restoration activities like reforestation. Fuel treatments may continue in locations of low burn severity or in stands prone to windthrow.

To date, no other SIRs have been prepared and there has been no indication of any need for a SIR or supplemental NEPA analysis. Projects completed to date have met their stated objectives and were otherwise consistent with the MFEIS and ROD.

Appendix 1 Project-specific Monitoring Plan

Monitoring Plan

Table 1 lists each monitoring item required by the ROD, as described in Appendix A. The purpose of this plan is to ensure adherence to the MFEIS and ROD. Specialists will review items in their resource area, determine if they are applicable to the focus area and project to be monitored, and provide any relevant comments. Note there is no item 15, which was related to roadless area characteristics and was removed when treatment in roadless areas was removed from the project. In addition to the monitoring plan, the Treatment Tracking Workbook will summarize the quantitative aspects of project implementation.

Table 1 Monitoring Plan								
ID	Resource Area	Objective	Methodology	Timing	Reporting	Report Content	Responsible Party	Applicability and Comments
1	Air	Assess adherence to prescribed burn smoke limits.	Spot weather forecast identifying transport wind height and direction, smoke dispersal, 20-foot wind direction and speed, and ventilation index; also monitor data from air quality monitoring stations to ensure standards are being met.	Prior to, during, and after ignition.	Prescribed burn file, Forest Plan, monitoring report	Summary of prescribed burns and their adherence to smoke limits	Prescribed fire burn boss	Not applicable – no prescribed burning.
2	Aspen	Determine status of aspen regeneration in aspen regeneration units.	Fixed plot surveys.	First, third, and fifth years after treatment.	FACTS database	Summary of aspen treatments and regeneration results	Silviculturist	Not applicable – no aspen regeneration.
3	Fire resistance	Determine whether fuels treatment objectives were accomplished.	Review a representative sample of treatment areas after completion of activities.	First and third years after treatment.	FACTS database, fuel treatment effectiveness database	Summary of fuels treatments and whether objectives were met	Fuels specialist and silviculturist	First year review, fall 2023. Third year review, fall 2025.
4a	Timber and silviculture	Determine whether removal and regeneration harvest units are stocked with trees.	Reforestation surveys.	Third and fifth years after treatment.	FACTS database	Summary of regeneration within harvest units	Silviculturist	Not applicable – no harvest units.
4b	Timber and silviculture	Assess progress toward Forest Plan structural stage objectives.	Vegetation structural stage distribution analysis by management area.	Every fifth year	Forest Plan, monitoring report	Summary of vegetation structural stage distribution	Silviculturist	Fifth year review, fall 2027.
4c	Timber and silviculture	Assess survival of planted seedlings.	Fixed plot surveys or transects.	First, third, and fifth years after planting.	FACTS database	Summary of planted seedling survival	Silviculturist	Not applicable – no planting.
5	Vegetation management	Ensure adherence to specifications in contract, agreement, or other implementation process for all treatment types.	Site inspections.	Daily to weekly while operations are active.	Inspection report	Summary of effectiveness of contract, agreement, or other implementation process.	Project manager	Review fall 2022.
6	Soils	Monitor for detrimental soil disturbance.	Review a representative sample of treatment units (both mechanical and prescribed fire units, if available) using national soil disturbance assessment protocols.	First, third, and fifth years after treatment.	Forest Plan, monitoring report	Summary of results of soil disturbance assessment.	Soil scientist, hydrologist, or both	First year review, fall 2023. Third year review, fall 2025. Fifth year review, fall 2027.
7	Project design features	Assess effectiveness of applicable SOPs and design features.	Site inspections after implementation.	Annually - A minimum of one treatment unit per treatment type.	Forest Plan, monitoring report	Summary of effectiveness of SOPs and design features.	Applicable interdisciplinary team members	Review period will vary by resource area.
8a	Transportation system – reconstruction and maintenance	Ensure adherence to contract and road design specifications during road reconstruction and maintenance.	Site inspections.	Daily to weekly while operations are active.	Daily diary or road inspection report	Summary of road design specifications, how effectively they were implemented, and how effective they were at protecting resources.	Engineering representative	Not applicable – no road reconstruction or maintenance.

Table 1 Monitoring Plan

ID	Resource Area	Objective	Methodology	Timing	Reporting	Report Content	Responsible Party	Applicability and Comments
8b	Transportation system – temporary roads system	Ensure temporary roads are decommissioned, temporary drainage structures are removed, sites are effectively rehabilitated, and motorized use has been curtailed.	Site inspections.	Implementation - Before harvest units are accepted. Effectiveness - First and third year (after units have been accepted) after rehabilitation.	Timber sale inspection report, monitoring report	Summary of effectiveness of temporary road rehabilitation techniques	Sale administrator Soil scientist, hydrologist, botanist	Not applicable – no temporary roads.
8c	Transportation system – level 1 roads.	Ensure road closure devices are effectively installed, where required.	Site inspections.	Before (layout), during, and after operations	Timber sale inspection report	Summary of effectiveness of level 1 road closure devices	Sale administrator or district staff	Not applicable – no level 1 roads affected.
9a	Noxious weeds, invasive species	Detect and prioritize treatment of noxious weed infestations in treated areas.	Site visits will be completed following vegetation treatment activities at high probability/priority areas. Presence of noxious or invasive weeds (for example, cheatgrass) will be documented and prioritized for treatment, as funding and personnel allow.	One year following treatment completion; every other year thereafter if determined necessary.	Threatened, endangered, and sensitive plants, and invasive species (TESP-IS) database	Summary of where noxious or invasive plants were found and plans for treatment if not already treated	Range specialist and/or staff from benefitting program area (for example, timber, wildlife, or fuels)	First year review, spring/summer 2023. Third year review (if needed), spring/summer 2025.
9b	Noxious weeds, invasive species	Monitor effectiveness of noxious weed/invasive species treatments.	Site visits following noxious weed/invasive species treatments will determine priority areas of follow-up treatment, as funding and personnel allow.	Within 3 years following initial weed treatments. Out-year monitoring will continue if prioritized for follow-up treatments.	Threatened, endangered, and sensitive plants, and invasive species (TESP-IS) database	Summary of noxious or invasive plant treatments and effectiveness	Range specialist and/or staff from benefitting program area (for example, timber, wildlife, or fuels)	Unknown – pending results of item 9a.
10	Fuels, Wildlife, Rangelands	Monitor effectiveness of treatments for fuels objectives, improved wildlife habitat, and/or shrubland habitat.	Photo points or quantitative measurements to detect the objectives of the treatment. Methods could include cover and frequency, line point intercept, or belt transects.	One year following treatment completion; every 5-10 years thereafter until determined unnecessary, as priorities and funding allow.	Benefitting resource project files	Summary of fuels, wildlife, and range improvement projects and whether treatment objectives were met	Benefitting program area: fuels, wildlife, or range	First year review, fall 2023. Future review to be determined following second mowing in three to five years.
11	Recreation	Measure hunter access and satisfaction.	Using comments and data from hunter satisfaction surveys to determine if access is improving in relation to treatments. Likely addressed for a larger area, but project-specific information will be reported if available.	Coordination with Wyoming Game and Fish Department is required.	Monitoring report	Summary of hunter access and satisfaction based on treatments, to the extent data are available	Wyoming Game and Fish Department	Summarize in report to the extent data are available.
12	Wildlife	Measure available habitat for wildlife use.	Information from Wyoming Game and Fish Department classification and wildlife observation system data, animal collar study data that coincide with treatments, browse, and utilization data. Likely addressed for a larger area, but project-specific information will be reported if available.	Coordination with Wyoming Game and Fish Department is required.	Monitoring report	Summary of wildlife use of treated areas, to the extent data are available	Wyoming Game and Fish Department and wildlife biologist	Project-specific information will be summarized in the report if available.
13	Public Involvement	Assess public involvement, adjust outreach based on participation.	Using comments provided, summarize how comments are received and how many are received. Survey public satisfaction of methods used.	Survey public satisfaction every other year. Summarize information in monitoring report and adjust methods based on results, if necessary.	Monitoring report	Summary of public involvement, including attendance at meetings/field trips, number of people providing feedback at focus area and preliminary treatment stages, and any other participation by the public	NEPA planner, implementation coordinator	Review, fall 2022.

ID	Resource Area	Objective	Methodology	Timing	Reporting	Report Content	Responsible Party	Applicability and Comments
14	Adaptive Implementation and Monitoring	Assess effectiveness of Appendix A.	Survey Forest Service personnel, cooperating agencies, and public of their perception of the effectiveness of Appendix A and seek suggestions for changes. This information in conjunction with the monitoring report will drive changes to Appendix A. This item will be addressed for the LaVA project as a whole, using project-specific examples if applicable.	Every other year, in conjunction with the monitoring report.	Monitoring report	Summary of effectiveness of Appendix A	Resource specialists, cooperators, NEPA planner, implementation coordinator	Review, fall 2022.
16	Cumulative Watershed Effects and Water Quality	Maintain or improve long-term stream health and meet State of Wyoming designated uses for surface waters.	A) Planning phase: ECA (%) will be used as a guide to determine when a stream health field assessment is warranted. B) Implementation phase: Stream health monitoring plan focused on the metrics of concern and the vulnerable or sensitive stream reaches. C) BMP monitoring	A) Planning phase: Focus Area and Individual Treatment phases. B) Implementation phase: Individual stream health monitoring plans, generally before and for up to ten years after implementation. C) As detailed in BMP monitoring protocols, which include monitoring during and after implementation.	A) Treatment Tracking Workbook for summary of ECA by watershed. B) Monitoring report C) National BMP monitoring database.	Summary of efforts and results of efforts to maintain or improve long-term stream health	GIS specialist and hydrologist	First year review, fall 2023. Future review(s) to be determined.

Appendix 2 Monitoring Checklist

Note: The Draft Monitoring Checklist for the Troublesome Shrub Mowing project is attached. This checklist is incomplete and unsigned pending additional monitoring during the 2023 field season. Preliminary results are provided but are subject to substantial change. An updated monitoring checklist will be provided in a future monitoring report.

Monitoring Checklist

Project: Troublesome Shrub Mowing		District: Brush Creek-Hayden Ranger District	
Partnership Project: Yes		Primary Partner(s): Wyoming Game and Fish Department, Mule Deer Foundation, Saratoga-Encampment-Rawlins Conservation District	
Accounting Unit: Cedar Brush		Accounting Unit: Choose an item.	
Objective(s): #1 Mitigate hazardous fuels; #3 Enhance forest and rangeland resiliency to future insect and disease infestations; #5 Restore wildlife habitat			
Project Description: The Troublesome Shrub Mowing project included mowing 77 acres of older, mixed mountain shrublands in a mosaic pattern. This project was accomplished in partnership with the Wyoming Game and Fish Department (WGFD), Mule Deer Foundation (MDF), and Saratoga-Encampment-Rawlins Conservation District (SERCD) and with input and oversight by the USDA Forest Service (USFS).			
Location Description: The Troublesome Shrub Mowing project is located about 15 miles east of Saratoga on the northwest edge of the Snowy Range; in Forest Plan Management Area 3.58 (Crucial Big Game Winter Range); in the Wildlife Emphasis Treatment Opportunity Area (TOA), and in the Fuels Treatment and Safety Emphasis TOA.			
Legal Location: Township 17 North, Range 82 West, Sections 13 and 14; 6 th PM Carbon County, Wyoming.			
Management Areas: 3.58 (Crucial Big Game Winter Range).			
Treatment Opportunity Areas: Wildlife Emphasis Treatment Opportunity Area (TOA) and in the Fuels Treatment and Safety Emphasis TOA.			
Pinyon Data Location(s): https://usfs.box.com/s/ontxh65mz5sz44aarbaxymxequpsngo3			
GIS Data Location(s): T:\FS\NFS\MBRTB\Project\LaVA_Implementation\GIS\Troublesome\Data			

Treatments Completed					
Stand Initiation:	0	Intermediate:	0	Other Treatment(s):	77
Treatment Type	Acres	Treatment Type	Acres	Treatment Type	Acres
				<i>Shrub mowing</i>	77

Temporary Roads			
Planned (miles)	Constructed (miles)	Obliterated (miles)	Remaining (miles)
0	0	0	600

Post-Treatment Standard Operating Procedures and Monitoring

A set of post-treatment Standard Operating Procedures (SOPs) (Appendix A, Attachment 5) and a monitoring plan (Appendix A, Attachment 6) will be applied following implementation of each treatment.

The post-treatment SOPs consist of two types of post-treatment procedures. Many of the items are verifications that are made during contract compliance or as work is being implemented. Other items include monitoring that is required by other direction (for example the Southern Rockies Lynx Amendment [SRLA]), but that is independent of the LaVA monitoring plan. In addition to the SOPs, each item from the monitoring plan is incorporated in the appropriate resource section.

The sections below list the SOPs and monitoring requirements by resource area. A checked box (✓) indicates that an SOP or monitoring requirement is applicable to the project. Those identified with an asterisk (*) are

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Monitoring Checklist: Troublesome Shrub Mowing

required for all treatments per law, regulation, policy, or for consistency with the LaVA FEIS, design features, decision triggers, and monitoring plan.

It is the responsibility of the IDT resource specialists to indicate completion of SOPs and monitoring items based on the following items:

- Confirm the treatments met the requirements of the Forest Plan, MFEIS, and ROD.
- Confirm post-treatment SOPs and monitoring items have been completed.
- Recommend improvements or modifications to the Appendix A process, including design features, SOPs, and monitoring items.

Amphibians, Fish, and Wildlife

Monitoring Plan

- ✓ 7: Assess effectiveness of project-specific design features
- ✓ 10: Monitor effectiveness of treatments for fuels objectives and/or improved wildlife habitat and/or shrubland habitat
- ✓ 12: Measure available habitat for wildlife use
- ✓ 14: Assess effectiveness of Appendix A

SOPs

- ✓ Assess habitat improvement areas for effectiveness of treatments at improving wildlife habitat. Assess wildlife use of treated areas. (MON-FWR-10, MON-WILD-12)
- ✓ Assess if treatments met Forest Plan standards and guidelines, design features, and decision triggers for threatened/endangered species, Rocky Mountain Sensitive Species, and species' habitat.

Southern Rockies Lynx Amendment (SRLA) Monitoring

- ☐ Maps of the location and intensity of snow compacting activities and designated and groomed routes that occurred inside LAUs during the period of 1998 to 2000 constitute baseline snow compaction. Changes in activities and routes are to be monitored every five years after the SRLA decision.
- ☐ When fuels treatment and vegetation management project decisions are signed, report the following:
 - Acres of fuel treatment in lynx habitat by Forest and LAU, and whether the treatment is within or outside the WUI as defined by HFRA.
 - Whether or not the fuel treatment met the vegetation standards or guidelines. If standard(s) were not met, report which standard(s) was not met, why it could not be met, and how many acres were affected.

Application of exceptions in Standard VEG S5:

- ☐ For areas where any of the exceptions 1 through 5 listed in Standard VEG S5 were applied, report the type of activity, acres, and location (by unit and LAU) and whether Standard VEG S1 was within the allowance.

Application of exceptions in Standard VEG S6:

- ☐ For areas where any of the exceptions 1 through 4 listed in Standard VEG S6 were applied, report the type of activity, acres, and location (by unit and LAU) and whether Standard VEG S1 was within the allowance.

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Monitoring Checklist: Troublesome Shrub Mowing

- ☐ Total acres of lynx habitat treated under exemptions and exceptions to vegetation standards, to assure the 4.5 percent limit is not exceeded on any Forest over the life of the amendment (15 years).
- ☐ Application of guidelines:
- Summarize what guideline(s) was not followed and why.
 - Document the rationale for deviations to guidelines.

Results

Comments	Signature / Date
<u>Monitoring Item 7:</u> Pending field review, summer 2023 <u>Monitoring Item 10:</u> Quantitative monitoring in progress. An initial field review of the completed project indicated objectives are likely to be met. <u>Monitoring Item 12:</u> Quantitative monitoring in progress. An initial field review of the completed project indicated objectives are likely to be met. <u>Monitoring Item 14:</u> The Appendix A process was effective in identifying issues and concerns related to amphibians, fish, and wildlife in the project area. <u>SOPs:</u> Quantitative monitoring in progress. An initial field review of the completed project indicated objectives are likely to be met. SRLA monitoring requirements are not applicable because the treatments are not located in a Lynx Analysis Unit.	

Botany (Rare Plants)

Monitoring Plan

- ✓ 7: Assess effectiveness of project-specific design features
- ✓ 14: Assess effectiveness of Appendix A

SOPs

- ✓ If rare plant populations were protected, conduct post-treatment spot checks to ensure protections were implemented correctly and that the protections were adequate. If protections were found to not be adequate, increase the buffer distance on future treatments and/or modify the project design features.

Results

Comments	Signature / Date
<u>Monitoring Item 7:</u> Pending field review, summer 2023 <u>Monitoring Item 14:</u> The Appendix A process was effective in identifying issues and concerns related to botany (rare plants) in the project area. <u>SOPs:</u> Revisit to ensure protection of rare plant populations was adequate and successful. Summer 2023.	

Fire, Fuels, and Air Quality

Monitoring Plan

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Monitoring Checklist: Troublesome Shrub Mowing

- ☐ 1: Assess adherence to prescribed burn smoke limits
- ✓ 3: Determine whether fuels treatment objectives were accomplished
- ✓ 7: Assess effectiveness of project-specific design features
- ✓ 10: Monitor effectiveness of treatments for fuels objectives and/or improved wildlife habitat and/or shrubland habitat
- ✓ 14: Assess effectiveness of Appendix A

SOPs

- ✓ Develop post-treatment desired conditions
- ✓ Collect field data to develop maximum fuel loading targets associated with treatments and to develop the burn plan. Field data may consist of one or a combination of the following:
 - Browns transects
 - Photo points
 - Stand exams
 - Visual estimation of fuel loading
- ✓ Collect post-treatment field data to see if desired conditions (fuel loading targets) were met and re-treat if necessary. (MON-3-FIRE, MON-10-FWR).

Results

Comments	Signature / Date
Monitoring Item 3: Pending field review, summer 2023. An initial field review of the completed project indicated that objectives are likely to be met. Monitoring Item 7: Pending field review, summer 2023. A set of additional design features was developed to reduce the risk of a wildfire being started by mowing. These were accepted by the project partners. No fires were started during implementation. Monitoring Item 10: Pending field review, summer 2023. An initial field review of the completed project indicated that objectives are likely to be met. Monitoring Item 14: The Appendix A process was effective in identifying issues and concerns related to fire, fuels, and air quality in the project area. SOPs: Pending field review, summer 2023. Prescribed burn smoke limits (monitoring item 1) are not applicable because prescribed fire was not used for this project.	

Heritage Resources

Monitoring Plan

- ✓ 7: Assess effectiveness of project-specific design features
- ✓ 14: Assess effectiveness of Appendix A

LaVA Project MFEIS – Appendix A: Adaptive Implementation and Monitoring Framework
Monitoring Checklist: Troublesome Shrub Mowing

Results

Comments	Signature / Date
<u>Monitoring Item 7:</u> No historic properties were identified; therefore, no project-specific design features were implemented. SOPs and standard design features were included in the project in the event of inadvertent discoveries.	
<u>Monitoring Item 14:</u> The Appendix A process was effective in identifying issues and concerns related to heritage resources in the project area.	

Infrastructure

Monitoring Plan

✓ 7: Assess effectiveness of project-specific design features

✓ 14: Assess effectiveness of Appendix A

Results

Comments	Signature / Date
<u>Monitoring Item 7:</u> SOPs and standard design features were effective in protecting identified infrastructure (limited to an existing Forest Boundary / range fence).	
<u>Monitoring Item 14:</u> The Appendix A process was effective in identifying infrastructure in the project area.	

Land Survey

Monitoring Plan

✓ 7: Assess effectiveness of project-specific design features

✓ 14: Assess effectiveness of Appendix A

Results

Comments	Signature / Date
<u>Monitoring Item 7:</u> SOPs and standard design features were effective in protecting identified land survey monuments.	
<u>Monitoring Item 14:</u> The Appendix A process was effective in identifying boundaries and land survey monuments in the project area.	

Lands and Special Uses (Rec and Non-Rec)

Monitoring Plan

✓ 7: Assess effectiveness of project-specific design features

✓ 14: Assess effectiveness of Appendix A

LaVA Project MFEIS – Appendix A: Adaptive Implementation and Monitoring Framework
Monitoring Checklist: Troublesome Shrub Mowing

Results

Comments	Signature / Date
<u>Monitoring Item 7:</u> No special uses were identified in the project area; therefore, no project-specific design features were implemented.	
<u>Monitoring Item 14:</u> The Appendix A process was effective in identifying issues and concerns related to lands and special uses in the project area.	

Law Enforcement and Investigation

Monitoring Plan

- ✓ 7: Assess effectiveness of project-specific design features
- ✓ 14: Assess effectiveness of Appendix A

Results

Comments	Signature / Date
<u>Monitoring Item 7:</u> No LE&I issues or concerns were identified in the project area; therefore, no project-specific design features were implemented.	
<u>Monitoring Item 14:</u> The Appendix A process was effective in identifying potential LE&I issues and concerns in the project area.	

Public Engagement and Planning

Monitoring Plan

- ✓ 7: Assess effectiveness of project-specific design features
- ✓ 13: Assess public involvement, adjust outreach based on participation
- ✓ 14: Assess effectiveness of Appendix A

Results

Comments	Signature / Date
<u>Monitoring Item 7:</u> No project-specific design features were used for public engagement and planning. No indication of the need for project-specific design features was identified.	
<u>Monitoring Item 13:</u> The Troublesome Shrub Mowing project was presented at the June 9, 2021 LaVA public meeting at the Focus Area phase (see LaVA Appendix A for implementation phase descriptions). The project was discussed at the May 4, 2022 LaVA public meeting at the Preliminary Treatment phase. The project was also shown as a “Future Treatment” and available for comment on the LaVA StoryMap from June 2021 through July 2022. No public feedback was provided during or after the public meetings or through StoryMap. In September 2022, the first LaVA monitoring field trip took place in the Troublesome Shrub Mowing project area. The public was notified of the field trip through a news release, project web page, and email via the project’s GovDelivery mailing list. Three members of the public, as well as numerous USFS and partner representatives, attended the field trip. Considering the mid-week timing of the field trip, weather, and long driving and hiking distance to the site, attendance was good. The USFS	

LaVA Project MFEIS – Appendix A: Adaptive Implementation and Monitoring Framework
Monitoring Checklist: Troublesome Shrub Mowing

Comments	Signature / Date
should consider if a weekend trip would have better attendance. Future monitoring field trips should also be announced in the summer version of the quarterly newsletter. No other adjustments to outreach were identified. <u>Monitoring Item 14:</u> Appendix A was effective in promoting public engagement during the planning and implementation phases of the project.	

Public Safety

Monitoring Plan

- ✓ 7: Assess effectiveness of project-specific design features
- ✓ 14: Assess effectiveness of Appendix A

Results

Comments	Signature / Date
<u>Monitoring Item 7:</u> No public safety issues or concerns were identified in the project area; therefore, no project-specific design features were implemented. <u>Monitoring Item 14:</u> The Appendix A process was effective in identifying public safety issues and concerns in the project area.	

Range and Invasive Species

Monitoring Plan

- ✓ 7: Assess effectiveness of project-specific design features
- ✓ 9a: Detect and prioritize treatment of noxious weed infestations in treated areas
- ✓ 9b: Monitor effectiveness of noxious weed/invasive species treatments
- ✓ 10: Monitor effectiveness of treatments for fuels objectives and/or improved wildlife habitat and/or shrubland habitat
- ✓ 14: Assess effectiveness of Appendix A

SOPs

- ✓ *In areas likely to have invasive species, conduct post-treatment surveys of invasive weeds in the treatment area. (DF INV-2, BIO-DIST-INVAS-S.1., MON-INV-9a)
- ✓ Control weeds as necessary during and after implementation. Modify future treatments as needed to reduce expansion of invasive weeds.

Results

Comments	Signature / Date
<u>Monitoring Item 7:</u> Pending field review, summer 2023	

LaVA Project MFEIS – Appendix A: Adaptive Implementation and Monitoring Framework
Monitoring Checklist: Troublesome Shrub Mowing

Comments	Signature / Date
<u>Monitoring Item 9a:</u> Pending field review, summer 2023. An initial field review of the completed project indicated that no substantial infestations of noxious weeds or invasive plants were present. <u>Monitoring Item 9b:</u> Pending completion of item 9a. <u>Monitoring Item 10:</u> Project was designed primarily to benefit wildlife habitat, with secondary fuels benefits. Incidental, limited improvement of rangelands likely. <u>Monitoring Item 14:</u> The Appendix A process was effective in identifying issues and concerns related to range and invasive species in the project area. <u>SOPs:</u> Pending field review, summer 2023	

Recreation

Monitoring Plan

- ✓ 7: Assess effectiveness of project-specific design features
- ✓ 11: Measure hunter access and satisfaction
- ✓ 14: Assess effectiveness of Appendix A

Results

Comments	Signature / Date
<u>Monitoring Item 7:</u> No recreation issues or concerns were identified in the project area; therefore, no project-specific design features were implemented. <u>Monitoring Item 11:</u> No change to access, no measurable change expected for hunter satisfaction. <u>Monitoring Item 14:</u> The Appendix A process was effective in identifying recreation issues and concerns in the project area.	

Soils, Hydrology, and Wet Areas

Monitoring Plan

- ✓ 6: Monitor for detrimental soil disturbance
- ✓ 7: Assess effectiveness of project-specific design features
- ☐ 8b: Ensure temporary roads are decommissioned, temporary drainage structures are removed, sites are effectively rehabilitated, and motorized use has been curtailed
- ✓ 14: Assess effectiveness of Appendix A
- ✓ 16: Maintain or improve long-term stream health and meet State of Wyoming designated uses for surface waters

SOPs

- ☐ Ensure temporary roads, landings, slash piles are reclaimed appropriately and adequately. (PHY-SOIL-S.4, DF-Rd-EC-1, DF-Rd-EC-2, DF-Rd-EC-3, DF-RdCom-1, DF-RdVA-1, DF-RdT-1, DF-RdT-2)

LaVA Project MFEIS – Appendix A: Adaptive Implementation and Monitoring Framework
Monitoring Checklist: Troublesome Shrub Mowing

- ☐ Monitor effectiveness of temporary road rehabilitation after contract termination (e.g., first and third year after contract acceptance) or last motorized use of road (e.g., after pile burning, site-preparation, planting).
- ✓ Monitor the implementation and effectiveness of best management practices (BMPs) outlined in the Watershed Conservation Practices (WCP) Handbook (FSH 2509.25) (USDA Forest Service 2006), Forest Plan standards and guidelines and design features to ensure compliance with State of Wyoming Water Quality Standards, the Wyoming Nonpoint Source Management Plan (WDEQ, 2000), and the Clean Water Act.

Results

Comments	Signature / Date
<u>Monitoring Item 6:</u> Pending field review, summer 2023. An initial field review of the completed project did not identify any detrimental soil disturbance. <u>Monitoring Item 7:</u> Pending field review, summer 2023 <u>Monitoring Item 14:</u> The Appendix A process was effective in identifying issues and concerns related to soils, hydrology, and wet areas in the project area. <u>Monitoring Item 16:</u> Pending field review, summer 2023. An initial field review of the completed project did not identify any effects to stream health. <u>SOPs:</u> Pending field review, summer 2023 Monitoring items and SOPs related to temporary roads are not applicable because temporary roads were not used. No landings or slash piles were created.	

Timber and Silviculture

Monitoring Plan

- ☐ 2: Determine status of aspen regeneration in aspen regeneration units
- ☐ 4a: Determine whether removal and regeneration harvest units are stocked with trees
- ✓ 4b: Assess progress toward forest plan structural stage objectives
- ☐ 4c: Assess survival of planted seedlings
- ✓ 5: Ensure adherence to contract specifications for all treatment types
- ✓ 7: Assess effectiveness of project-specific design features
- ✓ 14: Assess effectiveness of Appendix A

SOPs

- ☐ *Conduct regeneration survey within five years of completion of implementation. Based on cover type, ensure adequate stocking is achieved. If adequate stocking isn't achieved, initiate artificial regeneration. (BIO-SILV- S.3., BIO-SILV-S.4., MON-4a, MON-4c)
- ✓ Assess if treatments have met treatment objectives and if follow-up treatments are needed.
- ✓ Assess if treatments are meeting Forest Plan vegetation structural stage objectives. (MON-4b)
- ☐ Assess if treatments are meeting Forest Plan standards for coarse woody debris, snags, and snag recruits by forest cover type and designations such as WUI.

Results

Comments	Signature / Date
Monitoring Item 4b: Pending field review, fall 2027. An initial field review of the completed project indicated objectives are likely to be met. Monitoring Item 5: Field review showed that partner implementation by agreement was successful. Monitoring Item 7: Pending field review, summer 2023 Monitoring Item 14: The Appendix A process was effective in identifying issues and concerns related to timber and silviculture in the project area. SOPs: Pending field review, summer 2023 Monitoring items related to aspen regeneration (#2), regeneration harvest and stocking (#4a), and seedling survival (#4c), as well as the SOP requiring regeneration surveys, are not applicable because the project did not include regeneration harvest or tree planting. The SOP requiring assessment of coarse woody debris, snags, and snag recruits is not applicable because the project area is not forested.	

Transportation, Temporary Roads, and Stream Crossings

Monitoring Plan

- ✓ 7: Assess effectiveness of project-specific design features
- ☐ 8a: Ensure adherence to contract and road design specifications during road reconstruction and maintenance
- ☐ 8b: Ensure temporary roads are decommissioned, temporary drainage structures are removed, sites are effectively rehabilitated, and motorized use has been curtailed
- ☐ 8c: Assure road closure devices are effectively installed, where required
- ✓ 14: Assess effectiveness of Appendix A

SOPs

- ☐ *Ensure temporary roads are obliterated appropriately and adequately. Methods for obliterating temporary roads may include the following (DF RdEC-1, DF RdEC-2, DF RdEC-3, DF RdCom-1, DF RdVis-1, DF RdT-1, DF RdT-2, MON-8b):
 - Re-contouring the road
 - Ripping and scarifying the roadbed
 - Removing culverts
 - Installing drainage features
 - Creating physical barriers to preclude motorized travel
 - Scattering wood and rock debris onto the road
 - Applying seed and mulch to the area
 - Posting signs prohibiting travel

LaVA Project MFEIS – Appendix A: Adaptive Implementation and Monitoring Framework
Monitoring Checklist: Troublesome Shrub Mowing

Results

Comments	Signature / Date
<u>Monitoring Item 7:</u> No issues or concerns related to transportation, temporary roads, or stream crossings were identified; therefore, no project-specific design features were implemented. <u>Monitoring Item 14:</u> The Appendix A process was effective in identifying issues and concerns related to transportation, temporary roads, and stream crossings. Monitoring items related to road design (#8a), temporary roads (#8b), and road closure (#8c), and the SOP related to temporary roads are not applicable because road reconstruction and maintenance, temporary roads, and road closures were not part of the project.	

Visual Resources

Monitoring Plan

- ✓ 7: Assess effectiveness of project-specific design features
- ✓ 14: Assess effectiveness of Appendix A

Results

Comments	Signature / Date
<u>Monitoring Item 7:</u> No issues or concerns related to visual resources were identified; therefore, no project-specific design features were implemented. <u>Monitoring Item 14:</u> The Appendix A process was effective in identifying issues and concerns related to visual resources.	

District Ranger Approval/Review

The District Ranger will review the checklist and confirm that the project has been reviewed and monitored as required. In particular, the ranger will review the monitoring plan and SOPs and confirm they apply to this project. By signing the checklist, the District Ranger confirms that this project was completed within the scope of the original analysis in the MFEIS.

Reviewed By (Project Manager): Click or tap here to enter text.

Signature and Date:

Reviewed By (Implementation Coordinator): Click or tap here to enter text.

Signature and Date:

- ☐ Project was completed in compliance with applicable laws, regulations, and policies; the Forest Plan; and the ROD. Project effects are within the scope of the original analysis in the MFEIS. No need for modification of the implementation process was identified. No need for a supplemental information report (SIR) or supplemental NEPA analysis was identified.
- ☐ Project was completed in compliance with applicable laws, regulations, and policies; the Forest Plan; and the ROD. Project effects are within the scope of the original analysis in the MFEIS. Opportunities for modification of the implementation process were identified. These potential changes are described in a SIR, which concluded that the changes are not substantial and supplemental NEPA analysis is not needed. The implementation process will be modified as described in the SIR.
- ☐ Project was not completed in compliance with applicable laws, regulations, and policies; the Forest Plan; or the ROD; and/or Project effects were outside the scope of the original analysis in the MFEIS. The need for modification of the implementation process was identified. These potential changes are described in a SIR, which concluded that the changes are not substantial and supplemental NEPA analysis is not needed. The implementation process will be modified as described in the SIR.
- ☐ Project was not completed in compliance with applicable laws, regulations, and policies; the Forest Plan; or the ROD; and/or Project effects were outside the scope of the original analysis in the MFEIS. The need for modification of the implementation process was identified. These potential changes are described in a SIR, which concluded that the changes may be substantial and supplemental NEPA analysis is needed.

Approved By (District Ranger):

Signature and Date: