

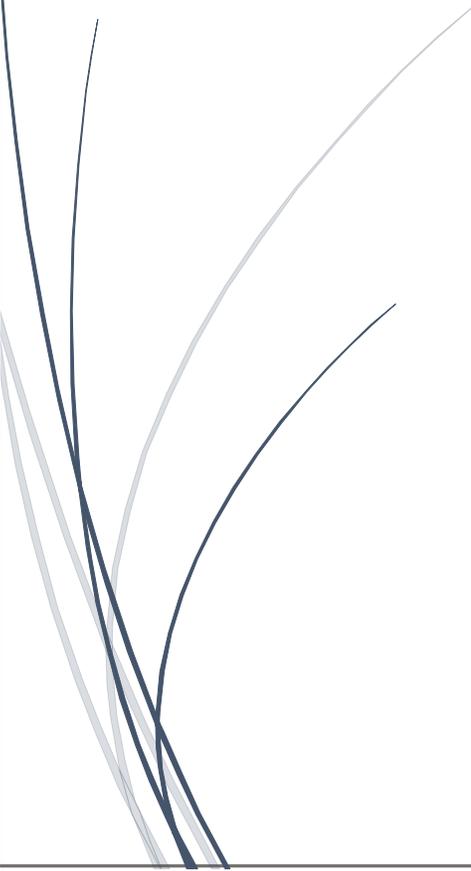


2022

Lewis & Clark County

# Forest Resiliency around the Dalton Mountain Road Community

Targeted Implementation Plan



Lewis & Clark County  
Forest Resiliency around the Dalton Mountain Road Community TIP

**Program:** Environmental Quality Incentives Program (EQIP)

**Land Use(s) Eligible:** Forest

**Resource Concern Category:** “Degraded Plant Condition”

**Primary Resource Concern:** “Excessive plant pest pressure”

**Secondary Resource Concerns:** “Inadequate structure and composition” and “wildfire hazard, excessive biomass accumulation”

**Proposed Project Dates:** NRCS Fiscal Year (September 30<sup>th</sup>) 2022 – 2026

**Project Summary:**

The goal of this Targeted Implementation Plan (TIP) is to restore forests to a healthy and resilient condition around the Dalton Mountain Road community by assisting private landowners in mitigating the impacts of forest pests and reducing the risk of wildfire. Forest Pest activity in the area has resulted in high levels of tree mortality negatively affecting forest health. The resource concern category that will be addressed is “Degraded Plant Condition” with a focus on the primary resource concern “excessive plant pest pressure” and consideration given to the secondary resource concerns “inadequate structure and composition” and “wildfire hazard, excessive biomass accumulation”. Removal of dead, dying, and undesirable trees will increase plant productivity and health, improve forest structure and composition, and increase tree resiliency in the treated stands, while simultaneously mitigating wildfire hazard and pest pressure.

**Targeted Focus Area:**

This TIP boundary was determined by landowners’ interest around the end of Dalton Mountain Road. All interest was to address overstocked stands and tree mortality linked to forest pests. The TIP boundary is Forest Service to the south and section lines to the north, east, and west (see figure 1). This boundary is completely within Lewis and Clark County.

Lewis & Clark County  
Forest Resiliency around the Dalton Mountain Road Community TIP

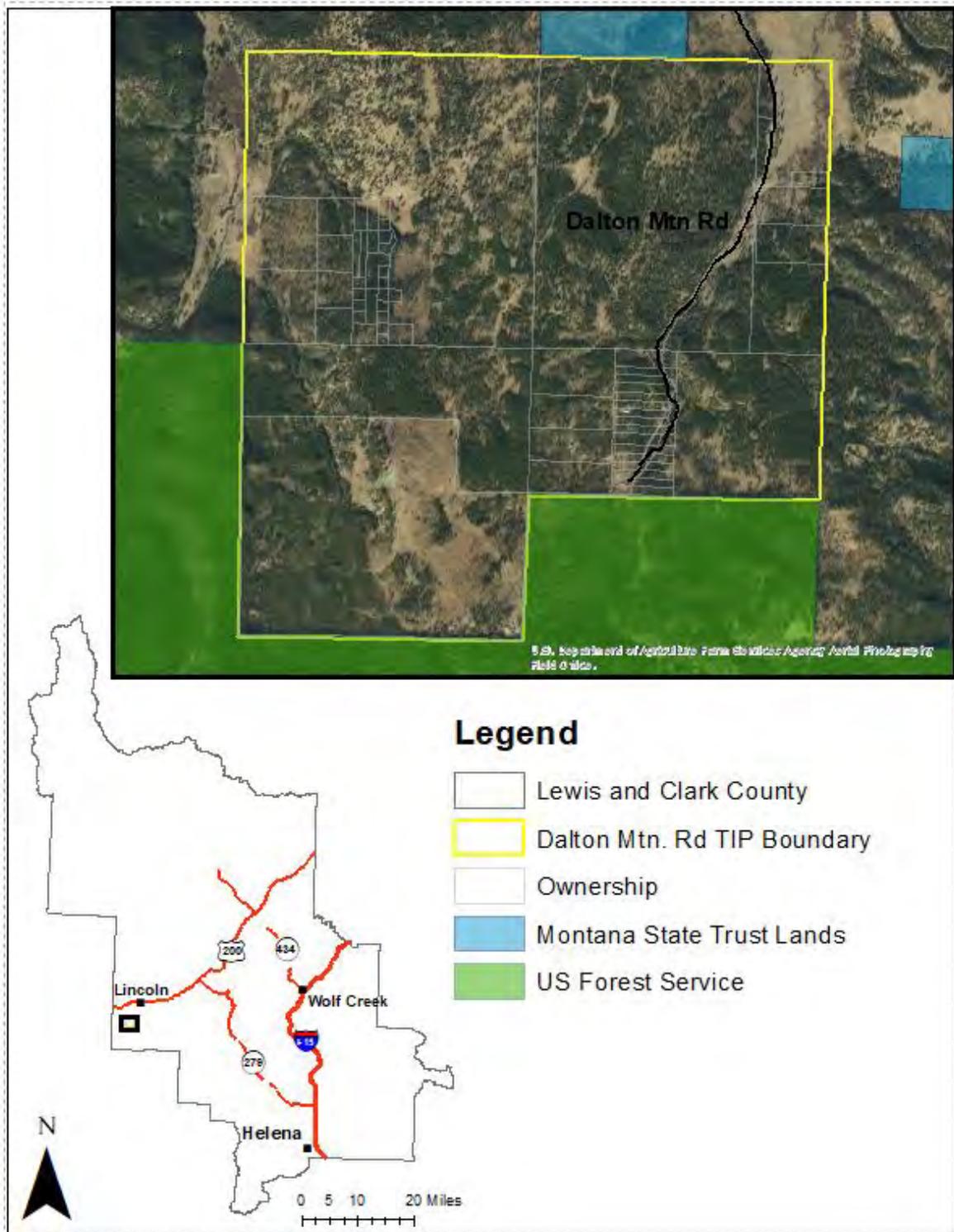
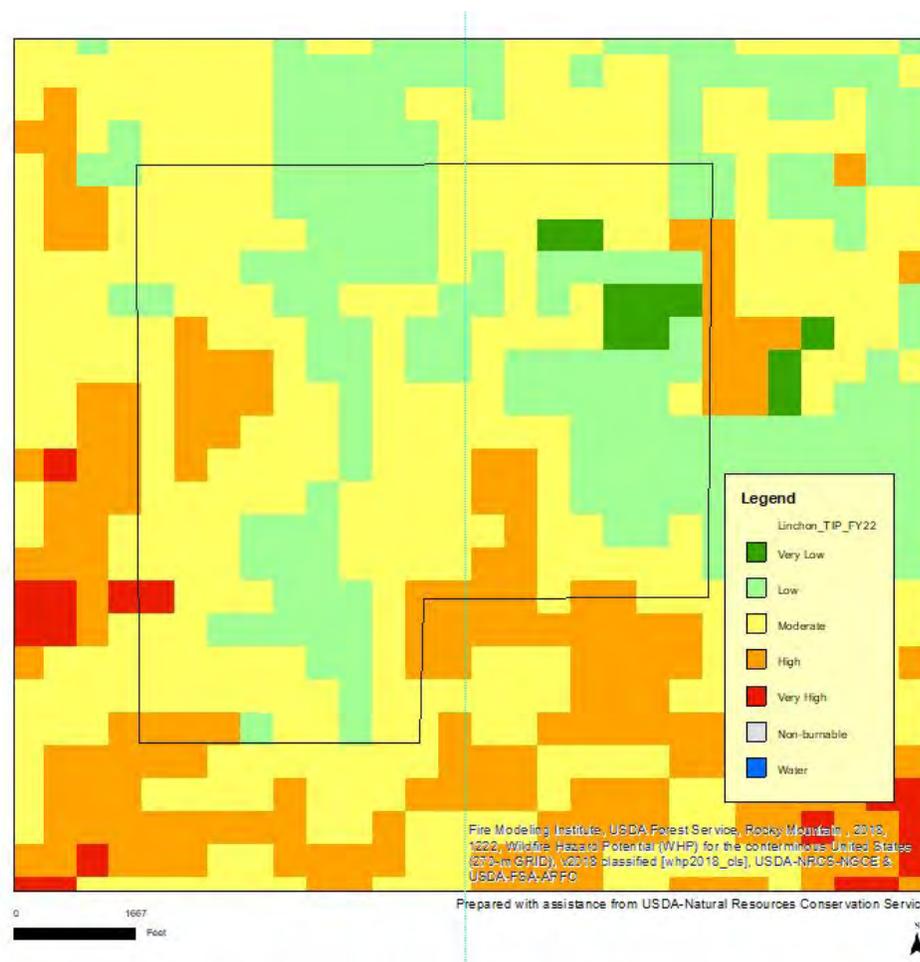


Figure 1. Dalton Mtn. Rd TIP Project Location

Lewis & Clark County  
Forest Resiliency around the Dalton Mountain Road Community TIP



*Figure 2. Wildfire Hazard Potential. This map is a raster geospatial product produced by the USDA Forest Service. Areas with higher Wildfire Hazard Potential values represent fuels with a higher probability of experiencing torching, crowning, and other forms of extreme fire behavior under conducive weather conditions, based primarily on landscape conditions.*

<https://www.firelab.org/project/wildfire-hazard-potential>

Based on preliminary inventory data collected by the Field Office the number of trees per acre (TPA) within the TIP's targeted focus area tend to correlate with the wildfire hazard potential categories. Trees per acre for each category are listed below, these are intended to show trends, not to be used as a diagnostic tool to determine current conditions.

- *Very low: 0-800 TPA*
- *Low: 801-1,200 TPA*
- *Moderate: 1,201-1,600 TPA*
- *High: 1,601-2,000 TPA*
- *Very High: 2,001+ TPA*

**Project Description / Objectives:**

Forest pest activity in the targeted focus area has resulted in high rates of mortality across the landscape culminating in large sections of forest with excessive and continuous fuel loading. Preliminary inventory data shows lodgepole seedling, sapling, and pole sized trees regenerating at densities up to 1,400 trees per acre. If left unaddressed fuel conditions will continue to worsen, putting the community at greater risk of high intensity, high severity wildfire.

Enacting this Targeted Implementation Plan (TIP) would enable landowners to address forest conditions on their properties by providing technical and financial assistance. There are some landowners currently working to reduce fuels and improve their forest stands but many lack the financial resources to adequately address these issues on their own. Proactive management helps to improve forest health while reducing biomass accumulation, both serve to accomplish the community's goals as outlined in the Lewis and Clark Long Range Plan (page 20 of Long-Range Plan).

The primary objective of this TIP is to address the Montana NRCS resource concern category "Degraded Plant Condition" with focus on the primary resource concern "excessive plant pest pressure". Secondary resource concerns "inadequate structure and composition" and "wildfire hazard, excessive biomass accumulation" will also be addressed.

Plant productivity will be improved in treated areas through forest thinning to reduce stand density and improve structure and composition. Lowering the stand density reduces competition for available sunlight, nutrients and moisture allowing the remaining trees to devote more energy and resources to growth and defense mechanisms. Stand structure will be modified by reducing ladder fuels, breaking up fuel continuity, and lowering fuel loads. Trees selected for leave will be free of insect and disease infestation; have vigorous crowns and little physical defect such as crooked stems or broken tops. Where available, seral species such as western larch will be favored over shade tolerant Douglas-fir and subalpine fir. The increased vigor and modified structure of treated stands will result in increased resilience to western spruce budworm defoliation and bark beetle attack. Additionally, risk of high severity, high intensity wildfire will be reduced from lower fuel loads and fuel continuity.

Several other Montana NRCS resource concern categories will be addressed through this project as a bonus return on investment. These include the following "Air Quality Impacts, Inadequate Habitat for Fish and Wildlife, and Livestock Production Limitation." Reductions in fuel has the potential to reduce the emissions of particulate matter, greenhouse gasses, and ozone precursors by reducing the likelihood of severe wildfires. Habitat will be improved by creating a greater diversity in stand composition and structure. Livestock Production Limitation of inadequate forage will be remedied as the canopy is opened allowing more light to the understory for grass and shrub development.



*Figure 3. Photo shows highly stocked stand typical of the project area. Note high fuel loading and fuel continuity throughout canopy.*

**Lewis & Clark County Long Range Plan:**

Through a series of Local Work Group Meetings, a long-range plan for Lewis & Clark County was developed by Field Office staff and the local Conservation District. During the planning process a list of nine natural resource problems and desired outcomes was developed. Among these, “Forestry Concerns” is the most pertinent to this proposed TIP (page 20 of Long-Range Plan).

The plan describes the various issues specific to beetle killed forests including fire hazard, danger of falling timber during high wind events, and the exclusion of livestock and wildlife. The plan proposes two methods of addressing the issue, controlled burning and collaborative treatment. This TIP will lay the groundwork to begin collaborative management amongst landowners.

**Montana State Forest Action Plan:**

Notably, the project aligns with the recently released State of Montana Forest Action Plan. Of the seven priority concerns detailed in the Plan, this project addresses six. These include Forest

Lewis & Clark County  
Forest Resiliency around the Dalton Mountain Road Community TIP

Health, Wildfire Risk, Working Forests and communities, Biodiversity and Habitat Conservation, Human and Community Health, and Sustainable Cross-Boundary work in Montana. Many of these have been addressed above through the overlap with NRCS objectives so only novel ideas will be discussed.

The concept of Working Forests and Communities is directly linked to the amount of management taking place on a landscape. By providing incentives and technical assistance NRCS will contribute to the local community by helping develop projects and the employment opportunities associated. This concept is further explored in the next section of this document “Public Investment”.

There are two notable outcomes of the project with significant impact on Human and Community Health. First, by reducing the risk of wildfire the chance of harm occurring to individuals during a blaze is reduced; in particular, the worst negative health impact, loss of life. Second, the overall health of local communities may be improved through wildfire reduction as the impacts of smoke may be managed.

### **Public Investment**

Investment of public funds into this project will yield a variety of benefits to the average taxpayer.

The project addresses climate change by implementing practices that may result in less carbon emissions into the atmosphere. When a forest undergoes a high intensity wildfire some of the carbon stored above ground in organic material is volatilized and released into the atmosphere as the fuels burn. If wildfire intensity can be minimized through forest management such as the thinning proposed in this plan, there should be more organic matter and fuels remaining in a forest after a fire. Those carbon pools remain on site and are not released into the atmosphere where they contribute to climate change. In addition to above ground carbon pools, forest soils contain significant amounts of carbon. Similar to those carbon pools above ground these carbon sources may become volatilized by wildfire events. The good news is that the proportion of the total soil carbon released to the atmosphere during a burn correlates with the heat of the blaze as described in Fire and Fire-Suppression Impacts on Forest-Soil Carbon (Page-Dumrose, Jurgensen, and Harvey 2003). In summary, the more intense the heat the higher the rate of carbon released. Thus, limiting the severity of wildfire and correlating heat will limit the contributions of soil carbon to the atmosphere.

Allocation of funding to this project is expected to generate an increase in forest management work and related jobs in the area. These include positions for loggers, equipment operators, hand crews, and others such as payroll and logistics managers. These positions contribute to the local, state, and national economies by providing a cash flow in those communities and through the expected tax revenues associated. These tax revenues provide a return on investment for the funding of the project.

Lewis & Clark County  
Forest Resiliency around the Dalton Mountain Road Community TIP

Completion of the project will also protect public investment in other programs including fire response and public lands. The increase in fire resiliency on the landscape may reduce the need to spend future tax revenues on fire response as the spread of fire across the landscape may be reduced. The cost of fire response is typically greater than the cost of fire preparedness as response cannot be planned prior to the fire event due to the inherent nature of emergency response. Similarly, the protection of existing investments including structures and infrastructure including homes and roads insulates taxpayers from future spending to recuperate those losses. This is particularly true for public lands in or adjacent to the project area.

A final consideration for the average taxpayer is the protection of life. Wildfire is innately dangerous for communities, and the individuals who lay their lives on the line to protect those communities. Specifically, emergency responders are at risk every time they respond to an event in the field. Taking preventative action to limit the potential for emergency situations can save lives, a value that cannot be quantified, but should be upheld as the ultimate benefit to the public wellbeing.

**Reportable Progress:**

1. Amount of forest area with improved structure and composition resulting in improved pest resiliency, plant health, and wildfire resistance. Measured as the number of acres reduced to the suggested stocking densities outlined in MT NRCS Practice Specification Forest Stand Improvement 666. The specifications are copied here for reference:

Stocking Guidelines by Species

Use the D+X spacing in even-aged stands. Use Basal Area in uneven-aged stand. Refer to the National Forestry Handbook, Part 636.2 for proper inventory methods.”

D+X is defined as: Average stand diameter (D) after treatment plus a constant (X). EXAMPLE: If D = 9” and X = 6, then average spacing is 9+6, or 15 feet. Stocking at 15’x15’ = 194 trees/acre.	
Ponderosa pine	Even-aged: D+ 6 to 10*
	Uneven-aged: 63-84 FEET <sup>2</sup> /ACRE*
Douglas-fir, Spruce, Fir, Cedar, Hemlock	Even-aged: D+ 7 to 9*
	Uneven-aged: 65-88 FEET <sup>2</sup> /ACRE*
Western larch	Even-aged: D+ 8 to 10*
	Uneven-aged: 56-75 FEET <sup>2</sup> /ACRE*
Lodgepole pine	Even-aged: D+ 5 to 7*
	Uneven-aged: 78-110 FEET <sup>2</sup> /ACRE*
* Use the upper stocking levels in healthy stands on more productive sites where understory production (grass, shrub, and tree seedlings) is not a concern. Use the lower stocking levels on less productive sites, to encourage growth of established tree seedlings, to improve	

Lewis & Clark County  
Forest Resiliency around the Dalton Mountain Road Community TIP

forage production on grazable forests, to reduce fire hazards, or where lower levels are necessary when removing undesirable species or infected trees.

2. Number of existing dwellings, permanent or seasonal that have been made more fire resistant. Measured as the number of dwellings with fuel breaks implemented on all adjacent forest land.
3. Proportion of forest made more resilient to forest pests. Measured as the difference in the number of acres with forest stand improvement and woody residue treatment practices implemented before and after TIP completion.
4. Documentation of before and after photographs of various practice implementation.

**Eligible Practices and Cost-Share Rates:**

*Table 1. Eligible Practices and Payment Rates*

Practice Code	Practice Description	Cost-Share Rates Per Acre*
315	Herbaceous Weed Treatment	\$28.35 - \$110.85
383	Fuel Break	\$783.81 - \$1,367.51
384	Woody Residue Treatment	\$352.58 - \$483.02
660	Tree / Shrub Pruning	\$293.69 - \$352.43
666	Forest Stand Improvement	\$276.10 – \$660.25

\*Cost share is based on FY2021 cost list and is subject to change

Herbaceous Weed Treatment (315) will be implemented to control weeds that are currently present on site. Weed control is critical to the project to ensure disturbance from management does not result in the proliferation of existing noxious weeds further degrading plant condition.

Fuel Break (383) will be used to remove or reduce trees and shrubs density or debris to diminish the risk of wildfire spreading across the landscape. Fuel Breaks will be emphasized around infrastructure such as dwellings, structures, and roadways that provide egress.

Woody Residue Treatment (384) is intended to treat the woody materials created during project implementation in addition to any residual woody materials present due to pest activity. Treatment of woody materials will reduce hazardous fuels, reduce habitat, and forage for forest pests, and improve access to forage for livestock and wildlife. This practice is commonly used in tandem with Forest Stand improvement code 666.

Tree/Shrub Pruning (660) has been included to offer a management tool to deal with low hanging branches that may act as ladder fuels during a fire event. The intent is to prevent fire from moving into tree canopies at which point fire intensity greatly increases.

Lewis & Clark County  
Forest Resiliency around the Dalton Mountain Road Community TIP

Forest Stand Improvement (666) will be used to manipulate the species composition, stand structure, and stocking densities by cutting and removing trees. These techniques will reduce wildfire risk and improve stand vigor in defense against forest pests.

**Alternatives:**

Alternative #1 No action will result in a failure to address degraded plant condition and buildup of fuels with correlating risk of wildfire. Risk of fire jeopardizes the health and safety of the communities in the targeted implementation zone. Resource concerns will continue to be addressed by individuals in a piece meal approach providing some improvement over existing conditions but will do little to address the issues at a landscape scale.

Alternative #2 (Preferred) Implementing a Targeted Implementation Plan with stakeholders would bolster the ability of individuals to take the actions outlined in the Practice Code table (Herbaceous Weed Treatment, Fuel Break, Woody Residue Treatment, Tree/Shrub Pruning, and Forest Stand Improvement) to address the “Degraded Plant Condition” resource concern on their properties. More importantly, the project would unite individual efforts and address forest health concerns at a landscape scale.

Alternative #3 Technical assistance and outreach to the community from NRCS and Partners will continue without financial assistance from NRCS. NRCS provides technical assistance to individuals which improves planning and management recommendations resulting in better prioritization of work completed by landowners, management will not necessarily meet NRCS practice standards. Landscape conditions will improve; however, the lack of cost share will limit the amount of management taking place on the ground reducing the overall efficacy of management. NRCS will recommend programs including cost share available through other agencies such as LCCD, MT Department of Natural Resource Conservation (DNRC), Tri-County Fire, etc.

**Outreach/Number of Producers:**

At the time of TIP proposal, two landowners have come forward with interest in participating in the program. Further outreach would be performed by Lewis and Clark Conservation District and the Helena NRCS staff, once the TIP is approved. Word of mouth has proven to be a valuable resource in past projects in the area.

**Estimated Number of Acres:**

There are 2,246 acres within the TIP boundary. All 2,246 acres are privately owned and partitioned amongst 48 landowners. Of the total private holdings 1,260 acres (56%) are owned by one landowner. Of the total 2,246 acres about 1,800 acres (80%) are forested. This TIP will be considered successful if 50% of the landowners complete a contract or 800 acres are addressed.

Lewis & Clark County  
Forest Resiliency around the Dalton Mountain Road Community TIP

Table 2. Wildfire Hazard Rating Distribution

Wildfire Hazard Potential Rating	Acres within TIP Boundary
Very Low	39 ac
Low	604.4 ac
Moderate	1,383.6 ac
High	214 ac
Very High	5 ac

**NRCS Workload Information:**

Workload will be handled by the existing NRCS field office staff, with assistance from the Conservation Planner at Lewis & Clark Conservation District. DNRC Foresters will assist with writing of forest management plans.

Table 3. NRCS Workload Estimates

Expected NRCS Technical Assistance Hours per 50 contracted acres			
Task	Hours Traveled	Hours Work	Hours Total
I&E	2	3	5
Plan Development		4	4
Contract Development		4	4
Implementation	2	4	6
Certification	5	8	13
Contract Maintenance		12	12
<b>Total</b>	<b>9</b>	<b>35</b>	<b>44</b>

**Project Fund Request:**

Table 4. Obligation Schedule

TIP Obligation Request		
Year	Acres Contracted	Obligation Requested*
2022	200	\$210,000
2023	200	\$210,000
2024	150	\$175,000
2025	150	\$175,000
2026	100	\$105,000

\*Yearly obligation amount based on estimated contract acres per year being \$1,000 - \$1,100/ac.

**Prioritization:** Will be using the MT prioritization tool.

Lewis & Clark County  
Forest Resiliency around the Dalton Mountain Road Community TIP

**Local TIP Ranking Questions:**

1. What are the existing average trees per acre on the planned acreage?
  - a. 1,601 tpa or more
  - b. 801 – 1,600 tpa
  - c. 800 tpa or less
2. Does the application include stands that have identified disease or insect problems in more than 1 tree species?
  - a. Yes
  - b. No
3. What is the majority of the planned acreage according to the 2018 USFS Wildfire Hazard Potential map?
  - a. Very high
  - b. High
  - c. Moderate
  - d. Low
  - e. Very Low
4. Does the landowner have an existing Forest Management / Stewardship Plan?
  - a. Yes
  - b. No

**Partner Contributions:**

*Table 5. Partner Financial Contributions*

Partner Contributions - Financial					
Partner	2022	2023	2024	2025	2026
L&CCD	\$1,637.30	\$1,637.30	\$1,169.50	\$1,169.50	\$467.80

\*L&CCD are based on hourly rate (\$23.39) of Conservation Planner

*Table 6. Partner Time Contributions*

Partner Contributions - Time (in hours)					
Partner	2022	2023	2024	2025	2026
L&CCD	50	50	20	20	15
DNRC	50	50	20	20	15
<b>TOTAL</b>	100	100	40	40	30

These partners will be assisting with outreach, inventory, writing Forest Management Plans, and certification.

*Table 7. Partner Financial Contributions*

Lewis & Clark County  
Forest Resiliency around the Dalton Mountain Road Community TIP

Partner Contributions – Completed Projects			
Partner	Completed Projects in TIP Boundary	Completed Projects around TIP Boundary	Cost of Completed Projects
<b>Blackfoot Challenge</b>	90 ac		\$108,000
<b>DNRC</b>		697 ac	\$69,169*
<b>TOTAL</b>	<b>90 ac</b>	<b>697 ac</b>	<b>\$177,169</b>

\*Most cost to DNRC is absorbed into timber sales

**Lewis & Clark Conservation District (L&CCD)** - The Lewis & Clark Conservation District has entered into a cooperative agreement with NRCS Helena Service Center. Per the agreement, L&CCD will continue to assist NRCS in the form of Technical Assistance. Assistance will include help with outreach, contract development, and implementation.

**U.S. Forest Service** – fuel reduction projects, completed and underway, along roads and trails on Forest Service grounds adjacent to the southern TIP boundary. Fuels reduction along the wildland urban interface is a priority for the Forest Service.

**Blackfoot Challenge** – fuel reduction projects, completed and underway, within the TIP boundary. The organization has also laid significant outreach groundwork which will be leveraged to promote this TIP.

**Montana Department of Natural Resources & Conservation** – fuel reduction projects completed around the Lincoln area. Aid NRCS with inventory and writing Forest Management Plans as needed. Specific projects completed in the area include the following timber sales and permits: 2015 Cornerstone TP, 2015 Black Willow LP, 2016 Cool Country TS, 2017 Spring Bear TS, 2017 North Willow LP, and 2020 Bull Moose TS.

**Lewis and Clark County Weed District** – Provide landowners with weed management technical assistance and help developing noxious weed management plans. These management plans work synergistically with the forest management activities in this project by improving the results of management and reducing NRCS workload. The Weed District also offers a herbicide cost share program eligible to those landowners within the TIP.

**Supporting Partners:**

These partners are not contributing directly to the project but are either supportive of the goals and objectives of the project or benefit directly from the outcomes of the project.

**Lincoln Fire Department** – The Lincoln Fire Department is in support of reducing large scale fire hazards. Their knowledge on fire behavior is a benefit to the community, more importantly the outcomes of the project will benefit the group.

Lewis & Clark County  
Forest Resiliency around the Dalton Mountain Road Community TIP

**Tri-County Firesafe Working Group** – Has done many projects throughout Lewis and Clark county and are in support of this TIP. Their knowledge of wildfire management and contacts will be utilized.

## Lewis & Clark County Forest Resiliency around the Dalton Mountain Road Community TIP

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