Environmental Assessment Checklist

Project Name: Windy Woods Timber Sale
Proposed Implementation Date: June 2023
Proponent: Helena Unit, Central Land Office, Montana DNRC
County: Meagher

Type and Purpose of Action

Description of Proposed Action:

The Helena Unit of the Montana Department of Natural Resources and Conservation (DNRC) is proposing the Windy Woods Timber Sale. The project is located 11 miles southwest of White Sulphur Springs, MT (refer to Attachments vicinity map A-**1** and project map A-**2**) and includes the following sections:

Beneficiary	Legal Description	Total Acres	Treated Acres
Common Schools	**Section 16 T8N R5E**	**639.5**	**268**
Public Buildings			
MSU 2nd Grant			
MSU Morrill			
Eastern College-MSU/Western College-U of M			
Montana Tech			
University of Montana			
School for the Deaf and Blind			
Pine Hills School			
Veterans Home			
Public Land Trust			
Acquired Land			

Objectives of the project include:

- Limited Access opportunity to access and perform forest management on a State section with no legal access.
- Generating revenue for the Common Schools Trust.
- Capture value from dead and green timber while improving the health, vigor and productivity of the forest stands.
- Help reduce susceptibility to insects, pathogens and fire in the project area.

- Maintain the desired future condition of the forest stands in Lodgepole Pine and Douglas-fir cover types and encourage natural regeneration.

Proposed activities include:

Action	Quantity
Proposed Harvest Activities	# Acres
Clearcut	172.5
Seed Tree	95.7
Shelterwood	
Selection	
Old Growth Maintenance/Restoration	
Commercial Thinning	
Salvage	
Total Treatment Acres	
Proposed Forest Improvement Treatment	# Acres
Pre-commercial Thinning	
Site preparation/scarification	
Planting	
Proposed Road Activities	# Miles
New permanent road construction	0.4
New temporary road construction	1.9
Road maintenance	20.2
Road reconstruction	0.6
Road abandoned	2.5
Road reclaimed	
Other Activities	

Duration of Activities:	3 years
Implementation Period:	2 years

The lands involved in this proposed project are held in trust by the State of Montana. (Enabling Act of February 22, 1889; 1972 Montana Constitution, Article X, Section 11). The Board of Land Commissioners and the DNRC are required by law to administer these trust lands to produce the largest measure of reasonable and legitimate return over the long run for the beneficiary institutions (Section 77-1-202, MCA).

The DNRC would manage lands involved in this project in accordance with:

- The State Forest Land Management Plan (DNRC 1996),
- Administrative Rules for Forest Management (ARM 36.11.401 through 471),
- and all other applicable state and federal laws.

Project Development

SCOPING:

- DATE:
  - 1/11/22
- PUBLIC SCOPED:
  - The scoping notice was posted on the DNRC Website: http://dnrc.mt.gov/public-interest/public-notices and local newspaper.
  - Adjacent landowners, State lessee and statewide scoping list.
- AGENCIES SCOPED:
  - FWP.
- COMMENTS RECEIVED:
  - How many: 1
  - Concerns: 1, The Northern Cheyenne requested a Class I and/or Class III report.
  - Results: A Class I level review was conducted by the DNRC staff archaeologist for the area of potential effect.

DNRC specialists were consulted, including:
Chuck Barone (ID Team Lead/Bozeman Unit Forester)
Jeff Schmalenberg (Resource Management Program Supervisor/Soils & Hydrology)
Chris Forristal (Wildlife Biologist)
Patrick Rennie (Archeologist)

Internal and external issues and concerns were incorporated into project planning and design and will be implemented in associated contracts.

OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION, LIST OF PERMITS NEEDED: *(Conservation Easements, Army Corps of Engineers, road use permits, etc.)*

- **United States Fish & Wildlife Service-** DNRC is managing the habitats of threatened and endangered species on this project by implementing the Montana DNRC Forested Trust Lands HCP and the associated Incidental Take Permit that was issued by the United States Fish & Wildlife Service (USFWS) in February of 2012 under Section 10 of the Endangered Species Act. The HCP identifies specific conservation strategies for managing the habitats of grizzly bear, Canada lynx, and three fish species: bull trout, westslope cutthroat trout, and Columbia redband trout. This project complies with the HCP. The HCP can be found at http://dnrc.mt.gov/divisions/trust/forest-management/hcp.

- **Montana Department of Environmental Quality (DEQ) -** DNRC is classified as a major open burner by DEQ and is issued a permit from DEQ to conduct burning activities on state lands managed by DNRC. As a major open-burning permit holder, DNRC agrees to comply with the limitations and conditions of the permit.

- **Montana/Idaho Airshed Group-** The DNRC is a member of the Montana/Idaho Airshed Group which was formed to minimize or prevent smoke impacts while using fire to accomplish land management objectives and/or fuel hazard reduction (Montana/Idaho

Airshed Group 2010). As a member, DNRC must submit a list of planned burns to the Airshed Group's Smoke Monitoring Unit describing the type of burn to be conducted, the size of the burn in acres, the estimated fuel loading in tons/acre, and the location and elevation of each burn site. The Smoke Monitoring Unit provides timely restriction messages by airshed. DNRC is required to abide by those restrictions and burn only when granted approval by the Smoke Monitoring Unit when forecasted conditions are conducive to good smoke dispersion.

ALTERNATIVES CONSIDERED:

No-Action Alternative: Opportunity to access and perform forest management activities on a State section with no legal access would be abandoned. Timber would still be in the solution for DNRC's sustained yield and annual harvest requirements.

Action Alternative: Harvest up to 655 MBF of green and dead Lodgepole pine and Douglas-fir sawlogs utilizing seed tree harvests retaining 4-8 trees per acre and clearcut harvests. Harvest up to ~3500 tons of post & rail material and salvage ~2800 tons of unmerchantable dead wood for firewood. Other activities to include prescribed burning, noxious weed management, skid trail construction, road construction, road reconstruction, road maintenance and road reclamation.

Impacts on the Physical Environment

Evaluation of the impacts on the No-Action and Action Alternatives including **direct, secondary, and cumulative** impacts on the Physical Environment.

VEGETATION:

Vegetation Existing Conditions:

Harvest Unit	Habitat Group	Fire Regime	Current Cover Type	Age Class (years)	DFC	RX	Acres
1	Cool and dry to moist (eastside)	Mixed-to-Stand Replacing	Mixed Conifer	100-149	Douglas Fir	Seed Tree	52.7
2	Cool and dry to moist (eastside)	Mixed-to-Stand Replacing	Lodgepole Pine	100-149	Lodgepole Pine	Clear Cutting	116.9
3	Cool and dry to moist (eastside)	Mixed-to-Stand Replacing	Mixed Conifer	100-149	Douglas Fir	Seed Tree	17.8
4	Cool and dry to moist (eastside)	Mixed-to-Stand Replacing	Lodgepole Pine	100-149	Lodgepole Pine	Clear Cutting	58.2

5	Cool and dry to moist (eastside)	Mixed-to-Stand Replacing	Lodgepole Pine	100-149	Lodgepole Pine	Clear Cutting	17.4
6	Cool and dry to moist (eastside)	Mixed-to-Stand Replacing	Douglas Fir	100-149	Douglas Fir	Seed Tree	9.4
7	Cool and dry to moist (eastside)	Mixed-to-Stand Replacing	Mixed Conifer	100-149	Douglas Fir	Seed Tree	6.4
8	Cool and dry to moist (eastside)	Mixed-to-Stand Replacing	Mixed Conifer	100-149	Douglas Fir	Seed Tree	9.4

Fire Hazard/Fuels: The proposed project area contains seedling, sapling, and mature lodgepole pine and Douglas-fir mixed among heavy accumulations of standing and down dead insect killed trees. The grasslands areas have conifer encroachment. Fuel model 8 and 10 are common in the timbered portions of the project area, while the grass lands are dominated by 1 and 2. The State parcel is isolated, bordered on all sides by private lands, primarily used as range and is miles away from any residential areas. In 2021 a high severity wildfire burned through the lands to the north and west of the State parcel but was contained one-half mile before entering the State.

Insects and Diseases: Mountain Pine Beetle and Douglas-fir Beetle infestations began in 2008-2009 affecting ~75-80% of the lodgepole pine (including post and rail size class) and ~30% of the mature Douglas-fir.

Sensitive/Rare Plants: A query of The Montana Natural Heritage Program did not return any sensitive or rare plants in the project area.

Noxious Weeds: Observed noxious weeds include houndstongue and Canada thistle.

Harvest: ~80 acres of the State parcel were harvested in 1990.

Vegetation	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
No-Action														
Current Cover/DFCs		X				X				X				
Age Class		X				X				X				V1
Old Growth		X				X				X				V1
Fire/Fuels			X				X			X				V1
Insects/Disease		X				X				X				V1
Rare Plants	X				X				X					

Vegetation	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
Noxious Weeds		X				X				X				
Action														
Current Cover/DFCs		X				X				X			Yes	V6
Age Class			X				X			X			Yes	V2
Old Growth		X				X				X			Yes	V3
Fire/Fuels			X				X				X		Yes	V4
Insects/Disease		X				X				X			Yes	V6
Rare Plants	X													
Noxious Weeds		X				X				X			Yes	V5

Comments:

V1. Under the no action alternative live timber would continue to grow and dead timber would continue to fall and accumulate on the forest floor. Due to the current stocking levels, density, age and site conditions it is likely that some of the live timber targeted for treatment would likely be impacted by additional insects and disease. Treating the merchantable dead and green timber would recover value and utilize sawlogs, posts & rails and firewood while reducing the heavy fuel loadings and help favorably change the behavior of future fires.

V2. Age Class would be reduced. These acres would have 4-8 mature Douglas-fir trees (where available) per acre left within preferred Douglas-fir cover types while lodgepole pine cover types would be clear cut (including merchantable post and rail where applicable). Residual stands would be predominately sapling and 100–149-year-old age class trees. It is expected within 5-7 years of treatment to have more than 200 trees per acre in the 0–5-year-old age class within lodgepole pine cover types and within 10-15 years of treatment to have more than 100 trees per acre in the 0–5-year-old age class within Douglas-fir cover types. Regeneration surveys would be conducted to verify stocking levels.

V3. No areas in the proposed treatment stands have been identified as old growth. Harvesting of live mature timber would delay recruitment of old growth diameter and age trees.

V4. There are currently heavy fuel loadings from past insect infestations found in the stands proposed for treatment. Treating the merchantable standing and down dead timber, in addition to the green timber, would significantly reduce fuel loadings and help change the character of potential fire outbreaks. Fewer ladder fuels would be available for the interim. The area would however receive more sun and wind due to the reduction in canopy cover. 5-20 tons of coarse woody debris would be left on the ground (greater than 3”) which is not a primary contributor to fire spread. Whole tree skidding would limit the amount of logging slash left in the harvest units while helping to reduce the depth of residual unmerchantable large coarse woody debris.

V5. Mechanical treatment would increase ground disturbance and increase the potential spread of noxious weeds. In time, native species would be expected to out compete the invasive species and return the area to a more pre-harvest condition.

V6. The Desired Future Condition is either Lodgepole pine or Douglas-fir depending on site conditions. Seed tree treatments would be applied to preferred Douglas-fir sites and would remove 75% to 90% of the sawtimber basal area. Clear cut treatments would be applied to lodgepole pine sites and would remove up to 100% of the sawtimber (and post and rail where applicable) basal area. Due to the current stocking levels, density, age and site conditions it is likely that some of the live timber targeted for treatment would likely be impacted by additional insects and disease. Treatments would salvage merchantable dead and green timber, improving the health, vigor, and productivity of the stands. The removal of dead timber products (sawlogs, post and rail and firewood) would open additional canopy, encourage regeneration and help to reduce fuels. Douglas-fir leave trees, residual lodgepole pine islands and adjacent trees outside of the harvest area would provide a seed source for regeneration and new timber stands in the long-term. Aspen stand treatments would remove all merchantable conifers within 100' of aspen colonies to reduce conifer encroachment and promote restoration of the aspen stands.

Vegetation Mitigations:

- All road and logging equipment would be power washed and inspected prior to being brought on site.
- Project area would be monitored for noxious weeds during and following harvest and weed treatments would be developed and implemented should significant weed infestations arise.
- All roads, major skid trails, landings and burned slash piles would be reseeded with native grass to reduce the threat of noxious weed spread.
- Two large snags and two snag recruits (≥21" dbh or next dbh class) per acre would be left where available. Cull live trees and cull snags would be retained where applicable. Conduct regeneration survey post-harvest to ensure stand is regenerating according to SFLMP Guidelines. Sub-merchantable/non-merchantable trees and shrubs would be protected and retained where available. Retain visual screening cover in harvest units and in stream/riparian management zones where available. Emphasize the retention of one downed log per acre ≥15-inch diameter or larger, greater than 20 feet long where available. Retain live, healthy older trees and stand attributes suitable for old growth development where available and applicable.
- Utilizing whole tree skidding or other on the ground approved harvest method will limit slash build up during harvest operations to acceptable levels. Retain 5-20 tons of coarse woody debris across the proposed harvest units. Slash piles would be burned after the completion of the project.
- All activities would be conducted on dry or frozen and/or snow-covered ground conditions.
- Implementation of Forestry Best Management Practices (BMP's), Streamside Management Zone (SMZ) laws, Montana DNRC Forested Trust Lands HCP and DNRC Forest Management Administrative Rules.

SOIL DISTURBANCE AND PRODUCTIVITY:

Soil Disturbance and Productivity Existing Conditions:

The sale area is located on gentle to moderate slopes with underlying geologic structure forming the terrain and abrupt draws. There are no especially unusual or unique geologic features in the proposed harvest area. Slopes are stable. Soils are derived from igneous and sedimentary rock.

The project area is within a semi-arid precipitation zone (19-30”). Soils have a silt loam texture with significant rock content. As a result, soil compaction, displacement and erosion hazard are moderate.

Moderate precipitation, short growing season, extreme seasonal temperatures, and shallow soils result in moderate soil and site productivity in the project area. Nutrient pools in the organic soil layer provide and support nutrient cycling functions and microbial habitat but can be affected by surface soil displacement, compaction, and erosion.

Soil Disturbance and Productivity	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
No-Action														
Physical Disturbance (Compaction and Displacement)	**X**				**X**				**X**					
Erosion	**X**				**X**				**X**					
Nutrient Cycling	**X**				**X**				**X**					
Slope Stability	**X**				**X**				**X**					
Soil Productivity	**X**				**X**				**X**					
Action														
Physical Disturbance (Compaction and Displacement)		**X**				**X**				**X**			**Yes**	**S1&4**
Erosion		**X**				**X**				**X**			**Yes**	**S2&4**
Nutrient Cycling		**X**				**X**				**X**			**Yes**	**S3 & 5**
Slope Stability	**X**				**X**				**X**					
Soil Productivity		**X**				**X**				**X**			**Yes**	**S1, 3 & 5**

Comments:

S1. Monitoring of DNRC timber harvest shows the level of total detrimental soil impacts in a harvest area averages 13.2% for traditional ground-based operations, localized to primary skid trails and log landing sites (DNRC 2011). Detrimental soil impacts are considered substantive when they exceed 20 percent of a harvest area (DNRC 1996). Soil productivity is expected to be maintained when soil function is maintained within 80% of a harvest unit.

S2. Standard implementation of forest management BMPs to control erosion concurrent with harvest activities would mitigate any erosion concerns in the project area. Primary or highly impacted skid trails would be covered with slash and debris, using water bars only as needed to provide adequate drainage.

S3. Project area nutrient pools are not expected to be affected if 5-20 tons of fine and coarse woody material is retained, dependent on site characteristics, for long-term soil organic matter supply and nutrient cycling. Woody material retention and managing operating periods in conjunction with limiting disturbance is expected to maintain long-term productivity.

S4. Approximately 1.6 miles of existing low-standard state road (closed to the public) currently on the State parcel. Approximately 0.4 miles of new permanent restricted road construction, 1.9 miles of new temporary road and 0.6 miles of temporary restricted road reconstruction are proposed on State land to access the harvest areas. Some skid trails could be up to 1500 feet in length. Major skid trails and new temporary road and reconstruction on State lands would be closed with slash and debris and seeded at the end of project activities.

S5. Retain one large diameter (≥15") log per acre to facilitate moisture retention, soil surface protection and creation of micro-climatic growing sites as available and practicable.

Soil Mitigations:

- Limit equipment operations to periods when soils are dry (less than 20% soil moisture), frozen or snow covered (8 inches packed or 12 inches unconsolidated) to minimize soil compaction, rutting, vegetative disturbance and maintain drainage features. Control erosion by installing adequate drainage on roads and skid trails.
- Retain all fine litter as feasible and 5-20 tons/acre of large woody debris >3" diameter including 1 large log (≥15 inch dbh) per acre greater than 20 feet long as available and practicable.
- Minimize soil disturbance by general skid trail planning and limit sustained tractor skidding to slopes ≤50% throughout entire project. Limit scarification to 30-40% of the harvest area. Slash would be left in the harvest units where feasible, and distributed on skid trails upon completion of use, for nutrient cycling, to control erosion and to provide shade and moisture retention.
- The locations and spacing of skid trails and landings shall be designated and approved prior to operations and skid trails would not be spaced less than 50 feet apart.
- Install adequate road drainage to control erosion concurrent with harvest activities on existing road, reconstruction and new construction. Provide effective sediment filtration along drainage features near crossing sites. Existing road would have BMP's upgraded, temporary road reconstruction, new temporary road construction and major skid trails on State lands would be closed with slash and debris, and have adequate drainage provided. At sale closure, grass seed roads, skid trails (where needed) and landings with an appropriate seed mixture.
- Forest Officer and Purchaser would agree to a general skidding plan prior to equipment operations and designate skid trails within complex areas.
- Compliance with Forestry Best Management Practices (BMP's), Streamside Management Zone (SMZ) laws, Montana DNRC Forested Trust Lands HCP and applicable DNRC Forest Management Administrative Rules.

WATER QUALITY AND QUANTITY:

Water Quality and Quantity Existing Conditions:

The project area located in the southeast foothills of the Big Belt Mountains at the very upper reach of the North Fork of Woods Gulch Creek. The drainage begins as a Class 3 stream transitioning to a Class 1 stream, with associated wetlands, prior to leaving the State parcel. The stream flows from the State parcel to the north ~5.7 miles before reaching the junction of the South Fork of Woods Gulch Creek and the beginning of Woods Gulch Creek. Within the State parcel there is another intermittent Class 3 draw and several ephemeral draws located in the harvest areas.

There are ~1.6 miles of existing low-standard road (closed to the public) currently on the State parcel. Additionally, ~0.6 miles of road reconstruction and ~2.3 miles of new road construction would be needed to access the harvest areas.

Water Quality & Quantity	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
No-Action														
Water Quality	**X**				**X**				**X**					**H1**
Water Quantity	**X**				**X**				**X**					**H1**
Action														
Water Quality		**X**				**X**				**X**			**Yes**	**H1, 2 & 3**
Water Quantity		**X**				**X**				**X**			**Yes**	**H1, 2 & 3**

Comments:

H1. The primary concerns regarding water quality is the potential for increased levels of erosion and subsequent sediment delivery to streams from roads. A high level of BMP effectiveness can be expected during and after implementation of the proposed actions on roads. Any potential change in water quality due to this project would be immeasurable.

Forest stands within the project area are not a major influence on the hydrology and flow regimes of the streams draining the proposed harvest area. The proposed harvest is not expected to substantially decrease the levels of canopy interception or evapotranspiration potential over that likely to occur in these watersheds under no action. The levels of harvest proposed are also below those cumulative levels associated with detrimental increases in water yield.

H2. Timber harvest would occur within Class 1 and Class 3 streams. Whole tree log skidding would occur across designated crossing sites of the Class 3 and ephemeral draws on the State parcel.

H3. Install adequate road drainage to control erosion concurrent with harvest activities on existing road, road reconstruction and new road construction.

Due to the size, nature and timing of harvest, and recommended mitigations, minor direct, secondary, or cumulative effects to water quality and water quantity would be anticipated as a result of this project.

Water Quality & Quantity Mitigations:

- Restrict harvest activities from March 1 to June 1.
- Limit equipment operations to periods when soils are dry (less than 20% soil moisture), frozen or snow covered (8 inches packed or 12 inches unconsolidated).
- Install adequate road drainage to control erosion concurrent with harvest activities on existing road, reconstruction and new construction. Provide effective sediment filtration along drainage features near crossing sites. Existing road would have BMP's upgraded, road reconstruction, new temporary road construction and major skid trails on State lands would be closed with slash and debris, and have adequate drainage provided. At sale closure, grass seed roads, skid trails (where needed) and landings with an appropriate seed mixture.
- Harvest within the Class 1 stream would be restricted to the outer 25 feet of the Streamside Management Zone.
- Compliance with Forestry Best Management Practices (BMP's), Streamside Management Zone (SMZ) laws, and applicable DNRC Forest Management Administrative Rules.

FISHERIES:

Fisheries Existing Conditions:
There are no fisheries in the project area. The project area is at the very upper reach of the North Fork of Woods Gulch Creek which flows as a Class 1 stream for ~0.3 miles within the State parcel. ~5.7 miles to the north the stream flows into the main Woods Gulch Creek at the junction of the South Fork of Woods Gulch Creek. Woods Gulch Creek and the South Fork of Woods Gulch Creek have a brook trout fishery.

No-Action: No direct, indirect or cumulative impacts would occur as there are no fisheries within the proposed project area.

Action Alternative (see Fisheries table below):

Fisheries	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
No-Action														
Sediment	X				X				X					
Flow Regimes	X				X				X					
Woody Debris	X				X				X					
Stream Shading	X				X				X					
Stream Temperature	X				X				X					
Connectivity	X				X				X					
Populations	X				X				X					
Action														
Sediment	X				X				X					
Flow Regimes	X				X				X					

Fisheries	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
Woody Debris	X				X				X					F1
Stream Shading	X				X				X					F1
Stream Temperature	X				X				X					F1
Connectivity	X				X				X					F1
Populations	X				X				X					F1

Comments:

F1. No direct, secondary or cumulative effects to fisheries resources are expected to occur due to the implementation of this project.

Fisheries Mitigations:

• Compliance with Forestry Best Management Practices (BMP's), Streamside Management Zone (SMZ) laws, Montana DNRC Forested Trust Lands HCP and applicable DNRC Forest Management Administrative Rules.

WILDLIFE:

Cool, moist, patchy forested to forested foothill habitats comprise the majority of the project area located in the southeast edge of the Big Belt Mountains. Topography and aspect in this area are variable and forested patches in the project area are predominately Lodgepole pine with a mix of Douglas-fir along stand edges at the lower elevations with south and east aspects. These patches are naturally fragmented due to past disturbances including logging, wildfires and recent insect and disease. The stands are composed of single story mature and immature Lodgepole pine and mature Douglas-fir predominately from encroachment. Timber stands have been stagnated in the harvest area due to over stocking, drought and insect and disease.

The project area is bounded by private lands and there is no public access to the State parcel. Moderate logging, road construction, road use, outfitting and livestock grazing have occurred over the last several decades. ~80 ac of the State parcel was harvested in 1990 and is predominately lodgepole pine saplings with some residual trees. Mountain Pine Beetle and Douglas-fir Beetle infestations began in 2008-2009 eventually affecting ~75-80% of the lodgepole pine (including post and rail size class) and ~30% of the mature Douglas-fir. In 2021 a wildfire burned through the lands to the north and west of the State parcel but was contained before entering the State.

Upland forest and grassland habitats provide habitat for elk and deer, particularly during the months that span May through November. Grasslands also provide habitat for upland game birds and passerine ground-nesting species, whereas forested patches provide habitat for forest dwelling birds and mammals including those that use downed logs and snags to meet life requisites.

Following harvest, species that prefer more open forest conditions and/or young forest conditions would benefit, whereas those preferring more dense and structurally diverse forest conditions would not benefit. Under the proposed action, some habitat patches would become more fragmented, which would cause little added impact given the conditions already present in this naturally fragmented landscape. Lands within the project area are not within any documented known area of importance for wildlife habitat linkage. Due to the size, habitat conditions, location, and relatively short duration of the majority of the predominant disturbance associated with the project (approximately 1 to 2 years), direct, indirect, and cumulative effects to affected wildlife resources in this area are expected to be minor. See more detailed assessments in the table and "Comments" section below.

No-Action: No potential for disturbance to wildlife would be anticipated. No timber management activities would be conducted, thus no appreciable changes to existing habitats would occur. No changes in snag or large live tree availability would be anticipated. Continued maturation within existing stands could improve hiding cover and thermal cover for elk and mule deer, and other wildlife species that use forest cover to meet their life requisites. No direct effects would occur and negligible indirect, or cumulative effects would occur.

Action Alternative (see Wildlife table below):

Wildlife	Impact												Can Impact be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
Threatened and Endangered Species														
Grizzly bear *(Ursus arctos)* Habitat: Recovery areas, security from human activity		**X**				**X**				**X**			**Yes**	**W-1**
Lynx (*Felis lynx*) Habitat: mosaics--dense sapling and old forest >5,000 ft. elev.		**X**				**X**				**X**			**Yes**	**W-2**
Sensitive Species														
Bald eagle *(Haliaeetus leucocephalus)* Habitat: Late-successional forest within 1 mile of open water	**X**				**X**				**X**				**NA**	**W-4**
Wolverine (*Gulo gulo*) Habitat: high elevation areas that retain high snow levels in late spring		**X**				**X**				**X**			**Yes**	**W-3**

Wildlife	Impact												Can Impact be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
Black-backed woodpecker *(Picoides arcticus)* Habitat: Mature to old burned or beetle-infested forest	**X**				**X**				**X**				**Yes**	**W-7**
Black-tailed prairie dog (*Cynomys ludoviscianus*) Habitat: grasslands, short-grass prairie, sagebrush semi-desert	**X**				**X**				**X**				**N/A**	**W-4**
Flammulated owl *(Otus flammeolus)* Habitat: Late-successional ponderosa pine and Douglas-fir forest	**X**				**X**				**X**				**N/A**	**W-4**
Greater sage grouse (*Centrocercus urophasianus*) Habitat: sagebrush semi-desert	**X**				**X**				**X**				**Yes**	**W-5**
Peregrine falcon *(Falco peregrinus)* Habitat: Cliff features near open foraging areas and/or wetlands	**X**				**X**				**X**				**N/A**	**W-4**
Pileated woodpecker *(Dryocopus pileatus)* Habitat: Late-successional ponderosa pine and larch-fir forest		**X**				**X**				**X**			**Yes**	**W-6**
Fringed myotis (*Myotis thysanodes*) Habitat: low elevation ponderosa pine, Douglas-fir and	**X**				**X**				**X**				**N/A**	**W-2**

Wildlife	Impact												Can Impact be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
riparian forest with diverse roost sites including outcrops, caves, mines														
Hoary bat (*Lasiurus cinereus*) Habitat: coniferous and deciduous forests and roost on foliage in trees, under bark, in snags, bridges	**X**				**X**				**X**				**N/A**	**W-2**
Townsend's big-eared bat *(Plecotus townsendii)* Habitat: Caves, caverns, old mines	**X**				**X**				**X**				**N/A**	**W-2**
Big Game Species														
Elk		**X**				**X**				**X**			**Yes**	**W-8**
Mule Deer		**X**				**X**				**X**			**Yes**	**W-8**
Black Bear		**X**				**X**				**X**			**Yes**	**W-8**
Other Issues														
Snags		**X**				**X**				**X**			**Yes**	**W-9**
Large Live Trees		**X**				**X**				**X**			**Yes**	**W-9**
Habitat Connectivity, Wildlife Linkage and Movement Corridors		**X**				**X**				**X**			**Yes**	**W-10**

Comments:

W-1 Grizzly Bear – The proposed project area lies ~80 miles north of the Yellowstone Grizzly Bear Recovery Area and ~58 miles north of the defined Non-Recovery Occupied Habitat (Wittinger 2002). The project area has associated riparian areas and habitat for grizzly bears which is generally of moderate quality and periodic or transient use of the proposed project area could occur by grizzly bears. Approximately 1.6 miles of existing low-standard state road (closed to the public) currently exist on the State parcel. Approximately 0.4 miles of new, permanent restricted road construction, 1.9 miles of new, temporary road construction and 0.6 miles of temporary road reconstruction is proposed on State land to access the harvest areas. Cover would be removed on up to ~268 acres reducing security cover from existing levels for one to two decades until affected conifer stands could regenerate. There is no public access to the State parcel. Mechanized activities that would occur during harvest operations and weed control activities could displace bears, should they be present in the area. Given the low potential for grizzly bear occurrence, limited habitat quality, short duration of proposed activities,

and relatively small area of potential habitat affected, minor adverse direct, indirect, and cumulative impacts to grizzly bears as a result of this project would be expected.

W-2 Canada Lynx - Within the 640-acre project area there are currently approximately 317 acres of suitable lynx habitat. Of these 317 acres, an estimated 215 would be treated and converted to temporary non-suitable habitat. Thus, approximately 102 acres of suitable habitat (32% of existing) would remain following harvest on the project area. It is estimated that the stands being converted to temporary non-suitable condition would take approximately 15-20 years to regenerate to sufficient canopy heights to return these acres to a "suitable" habitat class. Given that the project area lies along the edge of a grassland/forest ecotone, that the acreage treated is relatively small, and that cover, and habitat would be retained for habitat connectivity, minimal adverse direct, indirect, and cumulative effects to Canada lynx would be anticipated.

W-3 Wolverine - The proposed project area falls within the range of wolverines and periodic or transient use of the proposed project area could occur. High elevation areas greater than 7200 feet that maintain persistent snow late into the spring do occur in the southwest half of the project area. Due to the size, nature, duration and location of the proposed project, activities associated with this proposal are expected to have minimal effect on wolverines.

W-4 Various Applicable Species - This project area is either out of the range of the normal distribution for these species, suitable habitat is not present, or minimal potential for adverse effects would be anticipated. Thus, no direct, secondary, or cumulative effects would be anticipated.

W- 5 Greater Sage Grouse - The project area does not occur within "core" or "general habitat" areas identified by the Montana Sage Grouse Habitat Conservation Program (2022). Extensive stands of sagebrush community types do not occur within the State parcel. Occurrence records for greater sage grouse do exist within the private lands where the haul routes are located (MNHP 2022) but no known leks occur along or within 1.5 miles of the proposed existing private haul routes. No direct, indirect or cumulative effects to greater sage grouse would be anticipated.

W-6 Piliated Woodpecker - The project area does not contain any habitat rated as suitable for pileated woodpeckers. Pileated woodpeckers have been observed in the Big Belt Mountain Range and suitable habitats are potentially present in the project area. However, the project area is situated on the eastern edge of the distribution of this species, likely a reflection of the more marginal habitat conditions there. Some potential feeding use could occur in large leave trees for years following logging. Mechanized activities that would occur during harvest operations and weed control activities could also displace pileated woodpeckers, should they be present in the area. Given the relatively marginal habitat affected and short project duration, minor adverse direct, indirect, and cumulative impacts to pileated woodpeckers as a result of this project would be expected.

W-7 Black Backed Woodpecker – A large burn occurred within one mile of the project area in 2021. Severe infestations of Mountain Pine Beetle and infestations of Douglas-fir Beetle

occurred over 10 years ago in the State parcel and surrounding private lands but currently insect activity is low. No direct, indirect or cumulative effects to black-backed woodpeckers would be anticipated.

W-8 Big Game – Elk, mule deer and black bear commonly use the project area. Under the proposed action, approximately 268 acres of dead and mature forest would have tree density considerably reduced by logging (up to 100% reduction in some of the lodgepole pine stands) and approximately 0.4 miles of new, permanent restricted road construction, 1.9 miles of new, temporary road construction and 0.6 miles of temporary road reconstruction would be needed to access the harvest areas. Access into all of the project area is controlled through private lands and is not open to the general public. During periods of active logging, elk, mule deer and black bear could be temporarily displaced by the disturbance if they happen to be in the local area. Thus, some short-term risk associated with disturbance, and some long-term, albeit minor risk, to elk, mule deer and black bear could occur given the reduction in cover and the 0.4 miles of additional permanent road prism on the landscape. Given the location, small size of the affected area, type of the proposed activity, and cover attributes found on the project area and surrounding lands, low adverse direct, indirect and cumulative effects to elk, mule deer and black bear associated with cover removal on these habitats would be anticipated. Proposed activities would reduce cover and security that would be cumulative to that caused by logging on adjacent and nearby private lands.

W-9 Large Live Trees/Snags – Some large live trees and snags are present in the project area. While the action alternative would represent a reduction in the availability of large trees and snags on ~268 acres in the project area, the proposed activities would retain approximately 4-6 trees per acre within the harvest units greater than 12” in diameter where they are present; the continued presence of these resources in the project area could facilitate continued use by those wildlife species that use large trees and snags. The surrounding landscape would still continue to provide equivalent habitat.

W-10 Connectivity, Linkage and Corridors – Encompassing the project area, patches of forest cover would remain and connected, which would provide a suitable network of cover capable of facilitating movements of terrestrial species across the local landscape. Following logging, forest patches in the State parcel would have variable tree density but would maintain some connectivity of forest cover patches across ridges, drainages and saddle areas. Tree density would be reduced from existing levels within the previously untreated areas of the harvest units. Vegetation proposed for treatment would continue to possess some stocked forest conditions post disturbance due to the harvest treatment prescription being proposed. Within treated stands individual trees and some patchy tree retention would remain, which would continue to provide for some escape cover and visual screening (albeit at reduced levels). The adjacent forests would continue to possess some stocked forest conditions post disturbance. Disturbance could increase the potential for temporary displacement of wildlife species that may be sensitive to the increased presence of humans and motorized activities. Forest management activities associated with the proposed action would have a minor adverse cumulative impact on species that prefer interior forest conditions and well-connected mature

forest cover, and minor, temporary impacts associated with logging disturbance and displacement of wildlife.

The ability for habitats in the project area to serve as a functional stepping-stone or unique identifiable corridor across the larger, broader landscape are limited. Following timber harvest, large species such as elk, deer and bears may alter the way they move through and use habitat and individual forested stands in the project area, but continued year-round use would be expected at the landscape scale. Given: 1) the amount of forest stands that would remain on the landscape following harvest, 2) the mosaic of habitat conditions that would remain following harvest, 3) that there would be no long-term increases in motorized or non-motorized human access routes associated with the project, and 4) that there would be no permanent human development associated with the project, there would be minor risk of adverse direct, indirect or cumulative affects to wildlife linkage or future linkage potential in association with this project.

The surrounding landscape would provide quality hiding and security cover for elk and other ungulates in the spring season when calves and fawns are most vulnerable. Following logging, forest patches in the project area would continue to have variable tree density and would continue to provide a mosaic of habitat conditions. Mature forest stands in the project area would generally remain connected and provide a network of cover suitable for providing calving sites. Within harvested stands, individual trees and some patchy tree retention would remain, which would continue to provide some escape cover and visual screening. Immediately following project completion the 1.9 miles of new, temporary road and 0.6 miles of temporary road reconstruction would be closed with slash and debris. Disturbance risk associated with the project activities would be relatively low as logging activity would be restricted from March 1 to June 1. There would be minor short-term added risk of disturbance and displacement of animals in late spring that could result in minor adverse effects associated with logging operations, short term road construction, and road use that would occur after the June 1 activity restriction date.

Wildlife Mitigations:

- 2 snags and 2 snag recruitment trees per acre, of the largest diameter class, would be retained where available. Retain 5 to 20 tons per acre of coarse woody debris greater than 3 inches in diameter. Retain at least one large down log ≥15 inches dbh and >20 feet long per acre where available. Sub-merchantable and non-merchantable trees and shrubs would be protected and retained for visual screening where practical.
- Harvest units would be designed in a manner that requires any point within a unit to be within 600 feet of visual screening cover in at least one direction.
- Consult a DNRC biologist if a threatened or endangered species is encountered to determine if additional mitigations are needed.
- Restrict commercial motorized activities from March 1 to June 1 for wildlife security. Intensive motorized activities associated with the project would be completed within two operating seasons.
- Temporary new roads, reconstructed roads and major skid trails would be physically closed on the State parcel at the completion of proposed activities and there is no public access to the parcel.

- Provide visual screening where available in riparian and wetland management zones.
- Food, garbage, and other attractants would be stored in a bear-resistant manner.
- Prohibit contractors and purchasers conducting contract operations from carrying firearms while on duty.
- Implementation of Forestry Best Management Practices (BMP's), Streamside Management Zone (SMZ) laws, Montana DNRC Forested Trust Lands HCP and DNRC Forest Management Administrative Rules.

AIR QUALITY:

Air Quality	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
No-Action														
Smoke	**X**				**X**				**X**					
Dust	**X**				**X**				**X**					
Action														
Smoke		**X**				**X**				**X**			**Yes**	**1**
Dust		**X**				**X**				**X**			**Yes**	**2**

Comments:

1. Slash consisting of tree limbs and tops and other vegetative debris would be placed in piles at landing areas and piled within harvest units as necessary throughout the project area during harvesting. Slash would ultimately be burned after harvesting operations have been completed. Burning would introduce particulate matter into the local airshed, temporarily affecting local air quality. Over 70% of emissions emitted from prescribed burning is less than 2.5 microns (National Ambient Air Quality PM 2.5). High, short-term levels of PM 2.5 may be hazardous. Within the typical column of biomass burning, the chemical toxics are: Formaldehyde, Acrolein, Acetaldehyde, 1,4 Butadiene, and Polycyclic Organic Matter.

2. Harvesting and hauling logs could create dust, which may affect local air quality. However, because dust would be localized to skid trails and haul roads and operating seasons would be short in duration, effects to air quality as a result of dust generated during harvest activities are expected to be low.

Air Quality Mitigations:

- Burning within the project area would be short in duration and would be conducted when conditions favor good to excellent ventilation and smoke dispersion as determined by the Montana Department of Environmental Quality and the Montana/Idaho Airshed Group. DNRC, as a member of the Montana/Idaho Airshed Group, would burn only on approved days.

ARCHAEOLOGICAL SITES / AESTHETICS / DEMANDS ON ENVIRONMENTAL RESOURCES:

Will Alternative result in potential impacts to:	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
No-Action														
Historical or Archaeological Sites	**X**				**X**				**X**					**1**
Aesthetics	**X**				**X**				**X**					**2**
Demands on Environmental Resources of Land, Water, or Energy	**X**				**X**				**X**					
Action														
Historical or Archaeological Sites	**X**				**X**				**X**					**1**
Aesthetics	**X**				**X**				**X**					**2**
Demands on Environmental Resources of Land, Water, or Energy	**X**				**X**				**X**					

Comments:

1. Scoping letters were sent to those Tribes that requested to be notified of DNRC timber sales. A Class I (literature review) level review was conducted by the DNRC staff archaeologist for the area of potential effect (APE). This entailed inspection of project maps, DNRC's sites/site leads database, land use records, General Land Office Survey Plats, and control cards. The Class I search results revealed that no cultural or paleontological resources have been identified in the APE, but it should be noted that Class III level inventory work has not been conducted there to date.

   Because the topographic setting and geology suggest a low to moderate likelihood of the presence of cultural or paleontologic resources, proposed timber harvest activities are expected to have *No Effect* to *Antiquities*. No additional archaeological investigative work will be conducted in response to this proposed development. However, if previously unknown cultural or paleontological materials are identified during project related activities, all work will cease until a professional assessment of such resources can be made.

2. Some areas of the proposed timber sale are visible from Hwy 89 (~10 air miles east of the project area) but there are no residences in or near the project area. Up to 72% of the landscape of the State parcel would change from its current condition. The harvest units would be much more open post-harvest due to the harvest prescriptions. The level of change to the overall landscape is expected to be moderate but not dominate the view to the casual observer.

Mitigations:

- If an unanticipated cultural resource is discovered, all project related activities would cease until the resource can be adequately evaluated.
- The timber harvest would utilize some selective harvesting methods, unharvested areas and existing sub-merchantable trees to help soften visual impacts. When possible, healthy non-merchantable trees and other residual vegetation would be retained. Regeneration would be expected in the open areas of the harvest units and the existing leave trees would continue to grow, reducing the openness of the stands over time.

OTHER ENVIRONMENTAL DOCUMENTS PERTINENT TO THE AREA: *List other studies, plans or projects on this tract. Determine cumulative impacts likely to occur as a result of current private, state or federal actions in the analysis area, and from future proposed state actions in the analysis area that are under MEPA review (scoped) or permitting review by any state agency.*

Windy Ridge Timber Sale EAC, 1990.

Impacts on the Human Population

Evaluation of the impacts on the proposed action including **direct, secondary, and cumulative** impacts on the Human Population.

Will Alternative result in potential impacts to:	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
No-Action														
Health and Human Safety	**X**				**X**				**X**					
Industrial, Commercial and Agricultural Activities and Production	**X**				**X**				**X**					
Quantity and Distribution of Employment	**X**				**X**				**X**					
Local Tax Base and Tax Revenues	**X**				**X**				**X**					
Demand for Government Services	**X**				**X**				**X**					
Access To and Quality of Recreational and Wilderness Activities	**X**				**X**				**X**					
Density and Distribution of population and housing	**X**				**X**				**X**					

Will Alternative result in potential impacts to:	Impact												Can Impact Be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
Social Structures and Mores	X				X				X					
Cultural Uniqueness and Diversity	X				X				X					
Action														
Health and Human Safety		X			X				X				Yes	1
Industrial, Commercial and Agricultural Activities and Production	X				X				X					
Quantity and Distribution of Employment	X				X				X					
Local Tax Base and Tax Revenues	X				X				X					
Demand for Government Services	X				X				X					
Access To and Quality of Recreational and Wilderness Activities	X				X				X					
Density and Distribution of population and housing	X				X				X					
Social Structures and Mores	X				X				X					
Cultural Uniqueness and Diversity	X				X				X					

Comments:

1. Normal risks would be involved with the operation of vehicular and log truck traffic on DNRC, Private, County and State roads.

Mitigations:

- Haul routes would have warning signs posted indicating that vehicular and log truck traffic is present in the area and safe speeds would be observed.

Locally Adopted Environmental Plans and Goals: *List State, County, City, USFS, BLM, Tribal, and other zoning or management plans, and identify how they would affect this project.*

None.

Other Appropriate Social and Economic Circumstances:

Costs, revenues and estimates of return are estimates intended for relative comparison of alternatives. They are not intended to be used as absolute estimates of return. The estimated stumpage is based on comparable sales analysis. This method compares recent sales to find a market value for stumpage. These sales have similar species, quality, average diameter, product mix, terrain, date of sale, distance from mills, road building and logging systems, terms of sale, or anything that could affect a buyer's willingness to pay.

No Action: The No Action alternative would not generate any return to the trust at this time.

Action: The timber harvest would generate additional revenue for the Common Schools Trust. The estimated return to the trust for the proposed sawlog harvest is $28,699 based on an estimated harvest of 655 thousand board feet (4258 tons) and an overall stumpage value of $6.74 per ton with an estimated additional $5,365 generated in forest improvement fees. Additional product estimated revenue of $28,000 for post & rail and $22,400 for firewood products. Costs, revenues, and estimates of return are estimates intended for relative comparison of alternatives, they are not intended to be used as absolute estimates of return.

References

Pfister, Robert D., Kovalchic, Bernard L., Arno, Stephen F., Presby, Richard C. 1977. Forest Habitat Types of Montana, USDA Forest Service General Technical Report INT-34, Ogden, Utah.

Fischer, William C., Clayton, Bruce D. 1983. Fire Ecology of Montana Forest Habitat Types East of the Continental Divide, USDA Forest Service General Technical Report INT-141, Ogden, Utah.

DNRC. 1996. State forest land management plan: final environmental impact statement (and appendixes). Montana Department of Natural Resources and Conservation, Forest Management Bureau, Missoula, Montana.

DNRC. 2010. Montana Department of Natural Resources and Conservation Forested State Trust Lands Habitat Conservation Plan: Final EIS, Volume II, Forest Management Bureau, Missoula, Montana.

DNRC. 2011. DNRC compiled soils monitoring report on timber harvest projects, 2006-2010, 1st Edition. Department of Natural Resources and Conservation, Forest Management Bureau, Missoula, MT.

DNRC. 2022. Montana DNRC Trust Lands Forest Management Old Growth Handbook. Department of Natural Resources and Conservation, Forest Management Bureau, Missoula, MT.

Does the proposed action involve potential risks or adverse effects that are uncertain but extremely harmful if they were to occur?

No.

Does the proposed action have impacts that are individually minor, but cumulatively significant or potentially significant?

No.

Environmental Assessment Checklist Prepared By:

Name: Chuck Barone
Title: Bozeman Unit Forester
Date: March 28, 2023

Finding

Alternative Selected

Action Alternative: Harvest up to 655 MBF of green and dead Lodgepole pine and Douglas-fir sawlogs utilizing seed tree harvests retaining 4-8 trees per acre and clearcut harvests. Harvest up to ~3500 tons of post & rail material and salvage ~2800 tons of unmerchantable dead wood for firewood. Other activities to include prescribed burning, noxious weed management, skid trail construction, road construction, road reconstruction, road maintenance and road reclamation.

Significance of Potential Impacts

No substantial or unacceptable, detrimental impacts to water, soil, fisheries or T & E or Sensitive Species are anticipated as a result of the proposed action.
The proposed timber sale complies with the following:

The State Forest Land Management Plan (DNRC)
Administrative Rules for Forest Management
All other applicable state and federal laws

This compliance combined with the utilization of standard BMP's, compliance with the SMZ Law, and the specific mitigations outlined in this document provide assuring protections against potential impact.

Need for Further Environmental Analysis

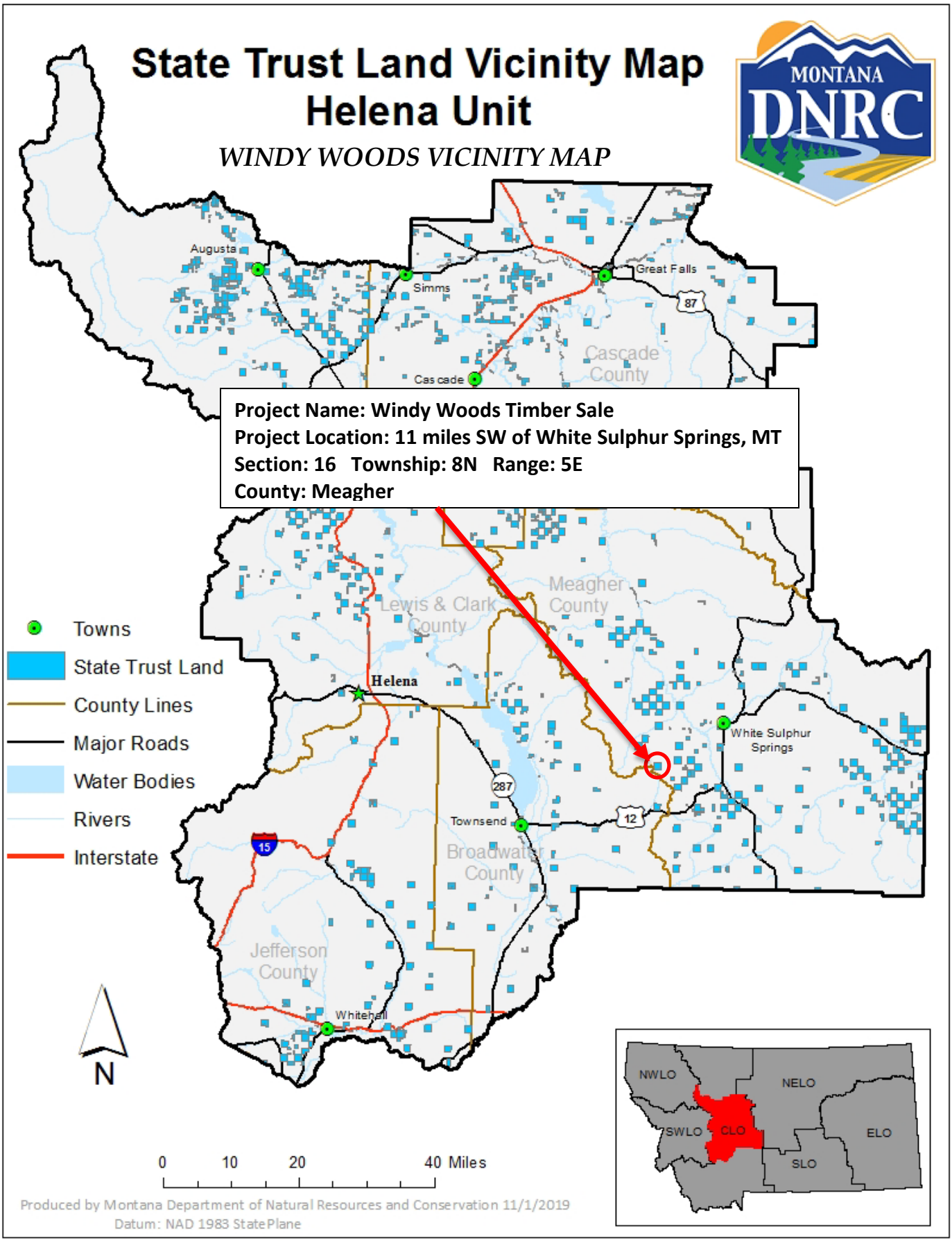
[ ]	EIS	[ ]	More Detailed EA	[X]	No Further Analysis

Environmental Assessment Checklist Approved By:

Name: Heidi Crum
Title: Helena Unit Manager
Date: April 18, 2023
Signature: /s/ Heidi Crum

Attachment A - Maps

A-1: Timber Sale Vicinity Map



A-2: Timber Sale Harvest Units