Environmental Assessment Checklist

Project Name: Tiger King Timber Permit
Proposed Implementation Date: July 30th 2020
Proponent: Helena Unit, Central Land Office, Montana DNRC & Myrstol Logging
County: Cascade

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 Tiger King Timber Permit. The project is located 16 miles south of Belt Montana (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	**T16N R6E Section 16**	**640**	**~115**
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:

- Generate Revenue for the trust beneficiaries
- Remove trees impacted by western spruce budworm and mountain pine beetle
- Encourage regeneration
- Reduce wildland fire fuel loading near private property

Proposed activities include:

Action	Quantity
Proposed Harvest Activities	# Acres
Clearcut	
Seed Tree	115
Shelterwood	

Action	Quantity
Selection	
Commercial Thinning	
Salvage	
Overstory Removal	
Total Treatment Acres	115
Proposed Forest Improvement Treatment	# Acres
Pre-commercial Thinning	
Planting	
Proposed Road Activities	# Miles
New permanent road construction	
New temporary road construction	Up to .6
Road maintenance	Up to 5
Road reconstruction	
Road abandoned	
Road reclaimed	
Other Activities	
Prescribed fire	Up to 115 acres
Noxious weed control	Up to 400 acres

Duration of Activities:	5 Years
Implementation Period:	5 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),
- The Montana DNRC Forested State Trust Lands Habitat Conservation Plan (HCP) (DNRC 2010)
- and all other applicable state and federal laws.

Project Development

SCOPING:

- DATE:
  - 6/26/2020
- PUBLIC SCOPED:
  - The scoping notice was posted on the DNRC Website: http://dnrc.mt.gov/public-interest/public-notices

    - Adjacent landowners
- COMMENTS RECEIVED:
    - How many: 0
    - Concerns: 0
    - Results (how were concerns addressed):

DNRC specialists were consulted, including: Mike Anderson & Patrick Rennie.

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 2006). The Group determines the delineation of airsheds and impact zones throughout Idaho and Montana. Airsheds describe those geographical areas that have similar atmospheric conditions, while impact zones describe any area in Montana or Idaho that the Group deems smoke sensitive and/or having an existing air quality problem (Montana/Idaho Airshed Group 2006). As a member of the Airshed Group, DNRC agrees to burn only on days approved for good smoke dispersion as determined by the Smoke Management Unit.

ALTERNATIVES CONSIDERED:

No-Action Alternative: Deferred harvest: Logging and related activities would not occur in the near future, however, grazing and outfitting under existing leases would continue.

Action Alternative: DNRC would harvest up to 425 thousand board feet (MBF) of primarily Douglas-fir trees utilizing seed tree harvest systems. Construct up to .6 miles of temporary road. New roads would be closed to public motorized use, and placed into storage condition at the end of harvest activities. Forest fire fuels would be reduced substantially (60-70%) within the harvest units providing contiguous fuel breaks on the portions of state land being treated, thus reducing the potential for catastrophic loss of resources on state and adjacent private and public lands. Grazing under existing lease on section 16 would continue but may work with lessee to limit conflict between cattle and timber harvest. All forest improvement work would be dependent on funding.

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:

The study area is approximately 3,510 acres and follows the rough description listed below: Starting in the northeast corner where Tiger Creek drainage spills into Belt Creek, travel south along the larger Belt Creek waterway for approximately 3.0 miles then turn southwest and head uphill. Going westerly for this point almost 2.75 miles and staying along the mostly open ridge top, Crown Butte summit can be found. Staying on top of the ridge again and moving northwesterly 1.79 miles through forested ground Tiger Butte is reached. Leaving northeast down a finger-ridge approximately 2.03 miles Evans – Riceville Road is reached. Going mostly east along this graveled road near Tiger Creek for 1.35 miles you close in on the starting point.

Open rangelands encompass nearly 412 acres, or 12% of the study area with native grass being utilized by cattle for grazing. Agricultural fields make of nearly 6% of the land base in the analysis area, or about 215 acres. Forested areas have been broken into either “high-density” or “low-density”. High-density forested land is approximately 1,913 acres or 54% of the study area, while low-density forested land would be close to 970 acres or 28% of the land base.

The 100-acre, Tiger King Permit would reduce the polesized and sawtimber high-density forested acres within the Analysis area by approximately 5%. A good portion of the proposed silvicultural methods that are being recommended for the Tiger King Permit are aimed at reducing overstocked stands to more appropriate basal area levels. The proposed project would not adversely impact, or alter greatly the current vegetative cover types within the analysis area.

Noxious weeds (primarily spotted knapweed, Canada thistle, and hound’s tongue) exist in the area. The Lessee and DNRC have an active spraying program in that area to control weeds. With any activity, and with no action, there is the potential for the spread of noxious weeds to new areas. The potential for timber harvest actions to add to this potential are reduced by washing equipment prior to entry to the harvest areas. DNRC would monitor and apply a herbicide treatment if necessary pre harvest and for a period of three years post-harvest.

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														
Noxious Weeds	**x**				**x**				**x**					
Rare Plants	**x**				**x**				**x**					
Vegetative community	**x**				**x**				**x**					
Old Growth	**x**				**x**				**x**					
Action														
Noxious Weeds		**x**				**x**				**x**			**Yes**	**1**
Rare Plants		**x**				**x**				**x**			**Yes**	**3**
Vegetative community		**x**				**x**				**x**			**Yes**	**2**
Old Growth	**x**				**x**				**x**					

Comments:

1. *Disturbed sites from equipment operation, timber removal and pile burning are receptive seed beds for noxious weeds.*
2. The removal of up to 425 MBF of timber and temporarily disturbing grasses and forbs present on site.
3. The age classes of leave trees on would be in the 120-130-year-old age class. Regeneration would take place in the forest openings created would lower the average age of the stand once regeneration is established.
4. PP-DF forest cover types would remain on the site.

Vegetation Mitigations:

- A minimum of one snag and one snag recruit per acre, of the largest diameter class, would be retained. Cull live trees and cull snags would be retained where possible given human safety considerations.
- Retain live, healthy older trees and stand attributes suitable for old growth development where available and applicable. Retain leave trees in a clumped distribution where possible.
- All logging equipment would be power washed and free of soil and organic material prior to being brought on site.
- Pre-harvest and post-harvest herbicide applications would be made to manage noxious weeds in the sale area. All herbicide applications would follow label instructions. Treatments may continue for up to 5 years after pile burning is concluded depending on amount of noxious weed infestation.
- Potential impacts to whitebark pine will be mitigated by reserving all 5 needle pines from harvest and avoiding higher elevation areas.
- Grass seed disturbed sites (landings, slash piles, major skid trails) at the completion of each harvest unit. Seed mix used would be appropriate for site applied.

SOIL DISTURBANCE AND PRODUCTIVITY:

Soil Disturbance and Productivity Existing Conditions:

The project area is within a semi-arid precipitation zone (18-24”) though the probability for high intensity rain events are significant. There are no especially unusual or unique geologic features in the proposed harvest area. No slope instabilities were noted during field review.

The soil forest productivity in the project area is low and limited by low precipitation and very high and low seasonal temperatures. Coarse woody debris volumes were ocularly assessed at 5-10 tons per acre.

The proposed project area is located on mountain footslopes and uplands with gentle to moderately steep stony loams and silty clay loams formed in alluvium and in material weathered from limestone. Most of the proposed harvest area is located on Whitore soils. These soils are silty clay loams that occur on moderate to moderately steep foot slopes and uplands. Erosion hazard on slopes up to 30% is low, and moderate for slopes 30-40%.

Most of the nonforested areas and sites undergoing forest encroachment within the proposed harvest area are located on Hanson-Sheege soils. These soil types consist of deep well-drained soils formed in alluvium and occupying alluvial fans and foot slopes at elevations between 4,500 and 5,500 feet. Erosion hazards are low to moderate for these soils.

The landscape surrounding the proposed harvest area also includes numerous limestone rock outcrops and ledges.

Timber harvest can affect soil productivity through displacement, erosion and compaction of the most productive surface layers of soil. This occurs largely through the use of ground based harvesting and skidding equipment, which can cause low to high levels of soil disturbance. However, existing detrimental soil effects within the proposed project area are limited to localized areas of heavy livestock concentration due to watering or salting. Soils at these sites have been compacted due to livestock trampling. These sites occupy a negligible amount of the project area (estimated at less than 0.1%) and are not resulting in substantial levels of soil impact. No other sites with observable levels of soil erosion, displacement or compaction were noted during the field review. Detrimental soil effects from historic timber harvest and/or other land management activities within the project area are either limited in extent or degree, or not apparent due to natural recovery over time. No areas of marginal slope stability or mass wasting were identified within the proposed project area.

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**	**1**
Erosion		x				x				x			**Yes**	**2**
Nutrient Cycling		x				x				x			**Yes**	**3**
Slope Stability	x				x				x				**N/A**	
Soil Productivity		x				x				x			**Yes**	**1**

Comments:

1) Monitoring of DNRC timber harvest shows the level of total detrimental soil impacts averages 6.2% of a harvest area using cable harvest systems and 13.2% for traditional ground-based operations (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.
2) Standard implementation of forest management BMP's to control erosion concurrent with harvest activities would mitigate any erosion concerns in the project area. Primary or highly impacted skid trails would be reclaimed as needed, covered with slash and debris using water bars only as needed to provide adequate drainage so to not expose infertile subsoils.
3) Slash greater than 3" in diameter would be left at a rate of 10-15 tons an acre within the harvest units where feasible. Retain 1-2 large diameter logs per acre to facilitate moisture retention and creation of micro growing sites.

Soil Mitigations:

- Ground based equipment operations limited to slopes less than 45%.
- Limiting season of use to periods when soils are relatively dry (less than 20% soil moisture, oven dried weight), frozen or snow covered to minimize soil compaction and maintain drainage features.
- Minimizing ground scarification to the extent needed to meet silvicultural objectives.
- Forest Officer and Purchaser would agree to a general skidding plan prior to equipment operations and designate skid trails within complex areas.

- Road drainage would be improved on existing and reconstructed roads with new construction complying with Forest Management BMP's.

WATER QUALITY AND QUANTITY:

Water Quality and Quantity Existing Conditions:

The proposed timber sale involves a single parcel of State ownership (Section 16, T16N, R6E) located within the Dick's Gulch watershed and the watershed of an unnamed tributary to Belt Creek. These watersheds drain a combined area of approximately 2093 acres. The proposed harvest units are actually drained by several ephemeral draws that are tributary to both Dick's Gulch and the unnamed tributary of Belt Creek. All drainage features within the proposed harvest area are ephemeral draws with no defined stream channels. Belt Creek is located approximately 0.75 miles down slope of the proposed project area. Several other unnamed drainages. No SMZ's are identified in the project area.

The road access to the proposed sale area will utilize an existing State highway, private ranch roads, and existing Cascade County roads.

The Belt Creek Drainage, which includes Dick's Gulch and the unnamed tributary, is classified B-1 in the Montana Surface Water Quality Standards. The B-1 classification is for multiple use waters suitable for domestic use after conventional treatment, growth and propagation of cold-water fisheries, associated aquatic life and wildlife, and agricultural and industrial uses. Among other criteria for B-1 waters, no increases are allowed above naturally occurring concentration of sediment, which will harm or prove detrimental to fish or wildlife. Naturally occurring includes conditions or materials present from runoff on developed land where all reasonable land, soil and water conservation practices have been applied. Reasonable practices include methods, measures or practices that protect present and reasonably anticipated beneficial uses. The State has adopted Forestry Best Management Practices through its Nonpoint Source Management Plan as the principle means of controlling nonpoint source pollution from silvicultural activities.

Existing beneficial uses in Dick's Gulch immediately downstream of proposed harvest area include water rights for recreation, agriculture and industrial uses. Other sensitive downstream beneficial uses in Belt Creek include aquatic life support, cold-water fisheries and drinking water supply.

Neither Dick's Gulch nor the unnamed tributary to Belt Creek are listed as a water quality limited waterbodies on the 1996 or 2004 versions of Montana's 303(d) list (MTDEQ 1996, 2004). However, Belt Creek, directly downstream of the project area, is listed as a water quality limited waterbody in the 1996 and 2004 versions of Montana's 303(d) list. The 303(d) list are compiled by the Montana Department of Environmental Quality (MTDEQ) as required by the Montana Water Quality Act (MCA 75-5-701 through 705) and Section 303(d) of the Federal Clean Water Act, and the Environment Protection Agency (EPA) Water Quality Planning and Management Regulations (40 CFR, Part 130). Under these laws, the State is required to identify water bodies that do not fully meet water quality standards; or where beneficial uses are threatened or impaired.

State and Federal laws also require that these listed water bodies be targeted for Total Maximum Daily Load (TMDL) development. The TMDL process is used to determine the total

allowable amount of pollutants in a water body. Each contributing source is allocated a portion of the allowable limit. These allocations are designed to achieve water quality standards or to fully support all beneficial uses. A TMDL has been scheduled but still remains to be completed. Under Montana Law (MCA 75-5-703(10)(c)), new or expanded nonpoint source activities affecting a listed water body may commence and continue provided they are conducted in accordance with reasonable land, soil and water conservation practices.

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**					
Water Quantity	**x**				**x**				**x**					
Action														
Water Quality		**x**				**x**				**x**			**Yes**	**1**
Water Quantity	**x**				**x**				**x**					**2**

Comments:

1. Due to the harvest system utilized, location of harvest units relative to stream channels, magnitude of new road construction, no new road stream crossings, no RMZ harvest, implementation of Forest Management BMP's and the low precipitation within the project area there is a low risk of direct, secondary or cumulative water quality impacts.
2. Forest stands are not likely to be a major influence on the hydrology and flow regimes of the streams draining the proposed timber sale area. Many of the trees in the proposed harvest units have been affected by spruce budworm or mountain pine beetle. 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 well below those cumulative levels associated with detrimental increases in water yield. Due to these factors, no direct, secondary or cumulative impacts to water quantity are anticipated under the proposed action.

Water Quality & Quantity Mitigations:

- All new road construction would be managed as restricted with ephemeral draw crossing culverts removed and stabilized. All existing roads would continue to be managed as restricted.
- Best Management Practices for Forestry would be implemented and monitored for effectiveness concurrent with all forest management activities.
- Ephemeral draw crossings would be kept to a minimum and skidding down topographic convergences (draw bottoms) would be prohibited.
- Major skid trails would be grass seeded, closed with slash and debris and/or barriers, reclaimed where necessary and adequate drainage provided.
- Implementation of Montana Administrative Rules for Forest Management, conservation strategies contained in Streamside Management Zone laws.

WILDLIFE:

The project area is dominated by mature Douglas-fir and ponderosa pine stands. Douglas-fir has been stagnated in the harvest area due to western spruce budworm and drought conditions. The mountain pine beetle has caused significant mortality both ponderosa pine and lodgepole pine in the harvest area. Understory vegetation is relatively sparse, and habitats are cool and dry. Numerous small to moderate-sized snags are found in forested portions of the project area. Coarse woody debris amounts are patchy and high in some locations due to recent high mortality. The project area provides habitat for native song birds, raptors, big game species, and predators.

No-Action: Under the no action alternative, none of the proposed vegetation treatments would occur. Thus, no direct, indirect or cumulative effects to habitat and associated wildlife species would be expected as a result of the proposed activities.

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**	**1**
Canada lynx (*Felix lynx)* Habitat: Subalpine fir habitat types, dense sapling, old forest, deep snow zone		X				X				X			**Yes**	**2**
Wolverine *(Gulo gulo)*		X				X				X			**Yes**	**3**
Sensitive Species														
Bald eagle *(Haliaeetus leucocephalus)* Habitat: Late-successional forest within 1 mile of open water		x				x				x			**Yes**	**4**
Black-backed woodpecker *(Picoides arcticus)*	X				X				X				**NA**	**5**

Wildlife	Impact												Can Impact be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
Habitat: Mature to old burned or beetle-infested forest														
Black-tailed prairie dog (*Cynomys ludoviscianus*) Habitat: grasslands, short-grass prairie, sagebrush semi-desert	**X**				**X**				**X**				**NA**	**5**
Flammulated owl *(Otus flammeolus)* Habitat: Late-successional ponderosa pine and Douglas-fir forest	**x**				**x**				**x**				**NA**	**5**
Harlequin duck *(Histrionicus histrionicus)* Habitat: White-water streams, boulder and cobble substrates	**X**				**X**				**X**				**NA**	**5**
Northern bog lemming *(Synaptomys borealis)* Habitat: Sphagnum meadows, bogs, fens with thick moss mats	**X**				**X**				**X**				**NA**	**5**
Mountain plover (*Charadrius montanus*) Habitat: short-grass prairie & prairie dog towns	**X**				**X**				**X**				**NA**	**5**
Peregrine falcon *(Falco peregrinus)* Habitat: Cliff features near open foraging areas and/or wetlands	**x**				**x**				**x**				**NA**	**6**
Pileated woodpecker	**x**				**x**				**x**				**NA**	**5**

Wildlife	Impact												Can Impact be Mitigated?	Comment Number
	Direct				Secondary				Cumulative					
	No	Low	Mod	High	No	Low	Mod	High	No	Low	Mod	High		
(Dryocopus pileatus) Habitat: Late-successional ponderosa pine and larch-fir forest														
Greater Sage grouse (*Centrocercus urophasianus*) Habitat: sagebrush semi-desert	**X**				**X**				**X**				**NA**	**4**
Townsend's big-eared bat *(Plecotus townsendii)* Habitat: Caves, caverns, old mines		**x**								**x**			**Yes**	**7**
Big Game Species														
Elk		**X**				**X**				**X**			**NA**	**7**
Whitetail		**X**				**X**				**X**			**NA**	**7**
Mule Deer		**X**				**X**				**X**			**NA**	**7**
Other														

Comments:

1. The proposed project area lies approximately 60 miles east of the grizzly bear Northern Continental Divide Ecosystem and 58 of the Non-Recovery Occupied Habitat boundary line as defined by Wittinger et al. (2002). Grizzly bears could potentially travel through the project area. The project area overall possesses relatively dry habitats with relatively low greenness values. Human access levels in this general area are fairly high due to the presence of many private lands, developed sites and privately controlled access. Cover and habitat connectivity associated with riparian areas would not be appreciably altered as minimal riparian timber harvesting would occur in the project area. Given the size and location of cover patches affected and removed, cover would be diminished on up to 100 acres (16%) of the 640-acre project area. Many submerchantable patches of trees and inaccessible patches would be retained in portions of harvest units and outside of harvest units. Following completion of the proposed activities 0.6 miles of temporary roads would be made impassible to minimize loss of security. Access into much of the project area is controlled through private access. During periods of active logging, grizzly bears 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 grizzly bears could occur given the reduction in cover and the .6 miles of additional road prism on the landscape. Given the scope and scale of the proposed activities, and relatively marginal inherent habitat quality for grizzly bears present in the project area, adverse direct, indirect and cumulative impacts to grizzly bears as a result of this project are expected to be low.

2. Within the 640-acre project area there are currently approximately 640 acres of suitable lynx habitat. All habitat stands on the project area are relatively dry with relatively little browse or horizontal cover and are of low quality for habitat. Of these 640 suitable acres, up to 100 (16%) would be treated and converted to temporary non-suitable habitat. Thus, approximately 540 acres of suitable habitat (84% of existing) would remain following harvest on the project area. It is estimated that the stands being reduced to temporary nonsuitable condition would take approximately 15-30 years to regenerate to sufficient canopy heights to return these acres to a "suitable" habitat class. Patches of advanced regeneration comprised of shade-tolerant tree species would be retained to provide habitat structure and maintain these tree species in harvested stands. Given that affected forest patches provide relatively poor habitat for snowshoe hares and lynx, that the acreage treated is relatively small, and that patchy submerchantable trees and habitat would be retained for habitat connectivity, minor adverse direct, indirect, and cumulative effects to Canada lynx would be anticipated.

3. Suitable denning habitat for wolverines generally found at high elevations in alpine habitat types capable of holding heavy snow in late spring is not present on the project area or within a mile of the project area. However, wolverines could occasionally use portions of the project area during daily movements and foraging activities during any season of the year and could be temporarily displaced by proposed logging activities. Thus, minor adverse direct, indirect or cumulative effects to wolverines would be expected to occur, as a result of this project.

4. Low suitability bald eagle transient habitat occurs in the project area. may occur but is not anticipated. No evidence of nest sites have been identified within 1 mile of the project area. Due to the temporary nature of the proposed action and the type of habitat present minor adverse direct, indirect or cumulative effects to bald eagle would be expected to occur, as a result of this project.

5. This project area is either out of the range of the normal distribution for this species or suitable habitat is not present. Thus, no direct, secondary, or cumulative effects would be anticipated.

6. Potential for peregrine falcon habitat exists in the project area. Some suitable habitats exist in the cumulative effects analysis area, including limestone cliffs. However, there are no known peregrine falcon nesting sites in the harvest area. The proposed activities would have negligible effects on peregrine falcons. The timing of the harvest to late summer further reduces any possible conflict with fledglings. The proposed activities would have negligible effects on peregrine falcons.

7. It is unknown if Townsend's big-eared bats occur in the vicinity of the project area. However, several large limestone outcrop features occur in the project area that could provide suitable roosting sites for a number of native bat species. Observations of little Townsends big-eared bats were made over a mile away from the project area over a decade ago (MNHP July 2020). Logging activity could disturb roosting bats on the project area during project activities, however, the features would not be altered in any way. Numerous large trees would also be retained as leave trees and on inoperable sites on the project area that could offer usable roost sites for forest-dwelling bat species. Given the small scope and limited duration of the project, any adverse direct, indirect or cumulative effects to native bats would be expected to be minor.

8. Under the proposed action, approximately 100 acres of mature forest would have tree density and associated crown cover reduced by logging, which could influence local use of the area by big game for 4 to 5 decades. Relatively well or moderately stocked stands would remain on approximately 226 acres (35%o of the 640 acre section) following the proposed harvest. Many submerchantable patches of trees and inaccessible patches would be retained in portions of harvest units and outside of harvest units. . Following completion of the proposed activities this .6 miles of temporary road would be made impassible to minimize loss of security for deer and elk. Access into much of the project area is controlled through private access and is not easily accessible by the general public. During periods of active logging, elk and deer 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 and deer could occur given the reduction in cover and the .6 miles of additional road prism on the landscape. Given the location, size and type of the proposed activity, and cover attributes found on the project area, low adverse direct, indirect and cumulative effects to deer and elk associated with cover removal on these habitats would be anticipated.

Wildlife Mitigations:

- A DNRC biologist would be consulted if a threatened or endangered species is encountered to determine if additional mitigations that are consistent with the administrative rules for managing threatened and endangered species (ARM 36.11.428 through 36.11.435) are needed.
- Restrict commercial motorized activities from April 1 to June 15 for grizzly bear and big game security.
- Contractors and purchasers conducting contract operations would be prohibited from carrying firearms while on duty.
- Food, garbage, and other attractants would be stored in a bear-resistant manner.

- A minimum of one snag and one snag recruitment tree per acre, of the largest diameter class, would be retained. Cull live trees and cull snags would be retained where possible given human safety considerations.
- Retain at least one large log >15-inch diameter and >20 feet long (or of the largest diameter available) per acre.
- Retain patches of advanced regeneration comprised of shade-tolerant tree species to provide habitat structure and maintain these tree species as a part of the stand species mix.
- Following project work, existing and new restricted roads would remain closed to motorized public access.

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) Tree limbs and tops and other vegetative debris in the harvest areas would be piled throughout the project area during harvesting. Harvest areas may have prescribed fire applied to encourage regeneration. Slash would ultimately be burned after harvesting operations have been completed. Prescribed burning and slash 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					
Aesthetics	x				x				x					
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					
Demands on Environmental Resources of Land, Water, or Energy	x				x				x					

Comments:

1. A Class III cultural and paleontological resources inventory was conducted of the area of potential effect on state land. Despite a detailed examination, no cultural or fossil resources were identified and no additional archaeological or paleontological investigative work is recommended. The proposed project will have *No Effec*t to *Antiquities* as defined under the Montana State Antiquities Act. A formal report of findings has been prepared and is on file with the DNRC and the Montana State Historic Preservation Officer. 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.

Mitigations: If an unanticipated cultural resource is discovered, all project related activities would cease until the resource can be adequately evaluated.

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.*

- SFLMP and the HCP

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					
Social Structures and Mores	x				x				x					
Cultural Uniqueness and Diversity	x				x				x					
Action														

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		
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					
Social Structures and Mores	x				x				x					
Cultural Uniqueness and Diversity	x				x				x					

Comments: N/A

Mitigations: N/A

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.*

- Forest Grazing License

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 School and. The estimated return to the trust for the proposed harvest is $18758 based on an estimated harvest 425 MBF and an overall stumpage value of $6.50 per ton. 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. An additional $3873 would be generated for forest improvement activities.

References

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. 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: Devin Healy
Title: Helena Unit Forester
Date: 05/7/2020

Finding

Alternative Selected
The action alliterative to harvest up to 500 thousand board feet (MBF) of timber from approximately 200 acres of State Trust Land.

Significance of Potential Impacts
No substantial or unacceptable, detrimental impact so 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 1996)
Administrative Rules for Forest Management (ARM 36.11.401 through 471)
All other applicable state and federal laws

Need for Further Environmental Analysis

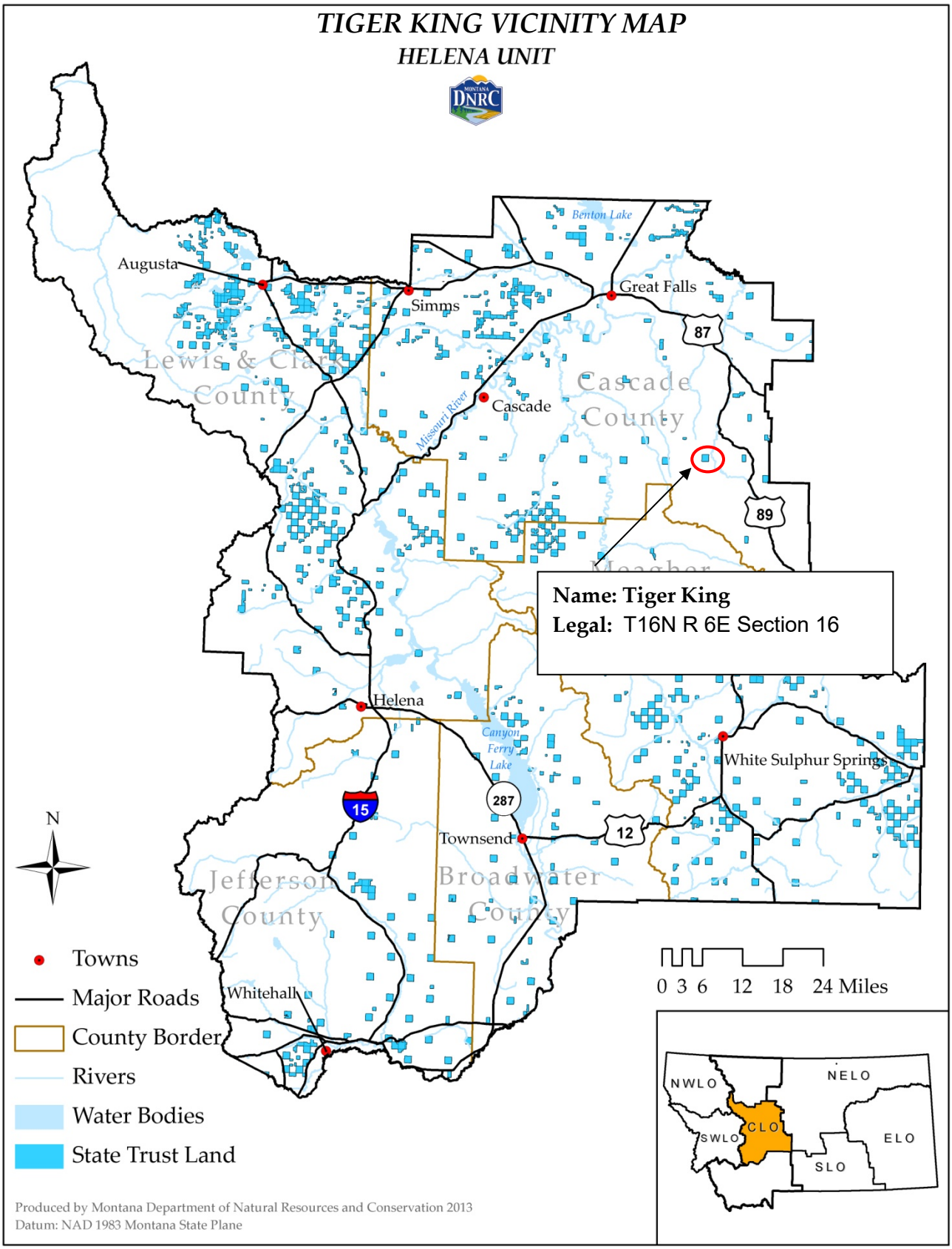
	EIS		More Detailed EA	x	No Further Analysis

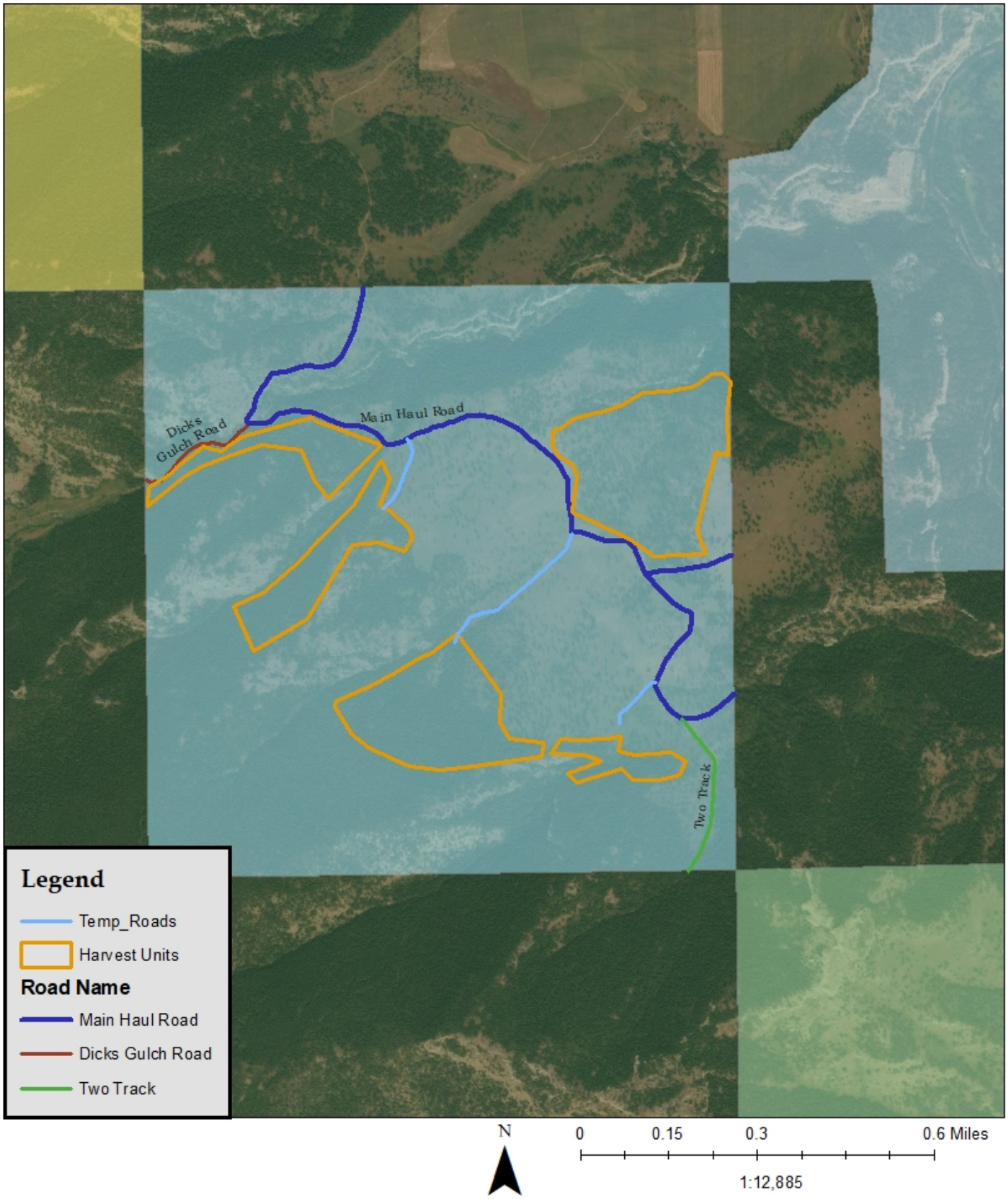
Environmental Assessment Checklist Approved By:

Name: Heidi Crum
Title: Helena Unit Manager
Date: 07/28/2020
Signature:

Attachment A - Maps

A-1: Timber Sale Vicinity Map



A-2: Timber Sale Harvest Units

Sterling Line Tember Permit
Harvest Unit Map