CHECKLIST ENVIRONMENTAL ASSESSMENT

Project Name:	Stumptown #3 Permit
Proposed Implementation Date:	June 2007
Proponent:	Montana Department of Natural Resources and Conservation
Location:	T4N, R12W, Section 36 (approximately 4 miles West of Anaconda, MT)
County:	Deer Lodge

I. TYPE AND PURPOSE OF ACTION

Pursuant to the Montana Administrative Rules for Forest Management (36.11.409 and MCA 77-5-207), The Montana Department of Natural Resources and Conservation's Anaconda Unit is proposing to salvage beetle killed timber from 46 acres.

II. PROJECT DEVELOPMENT

1. PUBLIC INVOLVEMENT, AGENCIES, GROUPS OR INDIVIDUALS CONTACTED:

Provide a brief chronology of the scoping and ongoing involvement for this project.

Scoping letters, dated August 17, 2006, were mailed to adjacent landowners and those parties wishing to be notified of State Timber Sales. A timber sale notice was placed in the Anaconda Leader as well. The DNRC met with Ray Vinkey, MTFWP Biologist. No comments were received from the scoping.

2. OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION, LIST OF PERMITS NEEDED:

MTDFWP Montana Stream Preservation Act – 124 Permit.
MTDEQ Open Burning Permit

3. ALTERNATIVES CONSIDERED:

Alternative A: No Action.
Alternative B: Salvage approximately 350 MBF of beetle killed Lodgepole pine from 46 acres. Approximately .25 miles of temporary road would be needed to facilitate the salvage harvesting.

III. IMPACTS ON THE PHYSICAL ENVIRONMENT

- *RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.*
- *Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.*
- *Enter "NONE" If no impacts are identified or the resource is not present.*

4. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE:

Consider the presence of fragile, compactable or unstable soils. Identify unusual geologic features. Specify any special reclamation considerations. Identify any cumulative impacts to soils.

Alternative A: No change over current conditions.

Alternative B: Soils located in the project area are Elve Gravelly Loams, on gentle 4-15% slopes. Mean annual precipitation is 15-30 inches. These soils are excessively drained and have an available water holding capacity of 2-3 inches. Erosion on these soils is low to moderate on these gentle slopes and well-drained soils. Implementation of BMP's and mitigations for harvest operations are anticipated to minimize the risk of erosion, and excessive impacts to soils or productivity. Mitigations include; season of use limitations to dry or frozen conditions, limit soil disturbance to levels needed for silvicultural purposes, and

general skid trail planning. Main trails would be slashed and water barred if necessary. Large woody debris would be maintained on the site at approximately 5-10 tons/acre and return skidded onto adjacent previous harvest areas where woody debris levels are low for nutrient cycling.

If recommended mitigation measures and BMP's are implemented, the risk of detrimental direct, indirect and cumulative impacts to soils is expected to be minimal and operations will promote prompt reforestation.

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5. WATER QUALITY, QUANTITY AND DISTRIBUTION:

Identify important surface or groundwater resources. Consider the potential for violation of ambient water quality standards, drinking water maximum contaminant levels, or degradation of water quality. Identify cumulative effects to water resources.

Alternative A: No Change over existing conditions.

Alternative B: The proposed harvest area in this section lies on a mixed glacial and alluvial deposits with an intermittent stream on the NW edge of the proposed unit. The proposed harvest of 46 acres of dead and dying lodgepole is less than 2% of this intermittent drainage. Two recent salvage permits for dead and dying lodgepole occurred on about 42 acres adjacent to the project area and have not caused detrimental effects to water resources. There is no surface water located in this harvest unit and no potential fishery effects. There would be no harvest proposed near or adjacent to streams and very low risk of off-site runoff or sediment delivery associated with the proposed harvest. There would be equipment and harvest restrictions along an aspen stand on the east edge of the harvest unit boundary. Operating restrictions identified in the State SMZ Law would be complied with.

Any skid trails and temporary roads would be stabilized by slashing and installing drainage where needed to prevent erosion. The only road located within the project area is a low standard access road that involves minimal excavation and does not cross any surface water. There would possibly be a temporary spur road to a landing, which would be a drive across/range type road with minimal if any excavation. All roads and landings would be stabilized and grass seeded. An existing ditch which would be crossed by the existing road would be kept functional.

Based on the implementation of BMP's and mitigation measures, there is low risk of direct, indirect and cumulative impacts to water quality, water resources or fish habitat.

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6. AIR QUALITY:

What pollutants or particulate would be produced? Identify air quality regulations or zones (e.g. Class I air shed) the project would influence. Identify cumulative effects to air quality.

Alternative A: No change over current conditions.

Alternative B: A minor amount of particulate would be produced during slash pile burning. Burning would be done in accordance with the Montana/Idaho Airshed Coordination Group and DEQ regulations.

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7. VEGETATION COVER, QUANTITY AND QUALITY:

What changes would the action cause to vegetative communities? Consider rare plants or cover types that would be affected. Identify cumulative effects to vegetation.

No rare plants have been identified in the project area (Reference Project File, Montana Natural Heritage Program letter). To prevent introduction of new weeds, off-road equipment would be cleaned and inspected prior to entry into harvest areas. Newly disturbed roads and landing would be re-seeded with a certified weed free grass mixture. There is low risk of direct or cumulative impacts to weeds.

Cruise plots estimate the existing tree mortality to be near 70% with additional mortality expected in the next few years. Natural regeneration would be expected with both alternatives but in a shorter time frame with the action alternative due to the ground scarification and mechanical preparation of a seed bed.

A goal of the action alternative would be to promote aspen regeneration as well.

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8. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS:
Consider substantial habitat values and use of the area by wildlife, birds or fish. Identify cumulative effects to fish and wildlife.

Big Game—The area receives use by local deer, elk, moose, and bighorn sheep herds, generally as transitional habitat on their way to better foraging opportunities. The proposed harvest unit is predominately a lodgepole pine stand with an aspen grove in the middle. Thus, the project area functions primarily as hiding cover throughout much of the year, and winter range habitat for mule deer, elk, and moose. However, the project area also receives extensive use by local residents throughout much of the general hunting season. Any new road construction would have motorized vehicle restrictions installed (i.e., locked gates). The proposed harvest would effectively remove 90% to 95% of the hiding and snow-intercept cover within the proposed 46-acre harvest unit. Such action may temporarily (15 to 25 years post-harvest) increase big game susceptibility to hunting mortality. However, should the proposed harvest be followed by prescribed fire, regeneration of lodgepole pine may be accelerated, and aspen regeneration may be stimulated. As a result, the return of hiding cover may be accelerated and there may be an associated increase in forage production (aspen shoots) that is highly desired by elk and moose. To partially mitigate the effects of the proposed harvest, the harvest unit would be designed such that a travel corridor would be retained for big game traveling along the riparian area for Big Gulch and the aspen stand would be left in tact, while allowing machinery to reach in approximately 25 feet and clip lodgepole pine. With the temporary (15 to 25 years post-harvest) reduction in hiding cover and snow-intercept cover within the proposed 46-acre harvest unit, the proposed travel corridor along Big Gulch, and the ample hiding and snow-intercept cover on adjacent Montana Fish, Wildlife & Parks land to the south and west of the project area, there would likely be low risk of direct, indirect, and cumulative effects to these big game species as a result of the proposed action.

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9. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES:
Consider any federally listed threatened or endangered species or habitat identified in the project area. Determine effects to wetlands. Consider Sensitive Species or Species of special concern. Identify cumulative effects to these species and their habitat.

Bald Eagle –N/A

Grizzly Bear - A grizzly bear track was recently confirmed on the nearby Garrity Wildlife Management Area (J. Jonkel, MT FWP, pers. comm., July 2006). As such, minimizing sight distance and open road densities within the project area becomes important. The proposed action would continue to maintain the effective road closure (i.e., a locked gate), and would work to minimize sight distance through maintaining the integrity of an aspen patch in the middle of the proposed harvest unit, only permitting mechanized equipment to reach into the aspen patch from the edge to clip lodgepole pine, and any submerchantable timber and limber pine would be retained. Otherwise, the proposed action would remove approximately 90% of the cover that currently breaks up sight distance within the proposed harvest unit. The aforementioned mitigations should sufficiently break up sight distance within the proposed unit post-harvest so that risk to grizzly bears would be reduced. As a result, with implementation of the proposed mitigations, the proposed action would likely have low risk of direct, indirect, or cumulative effects to grizzly bears.

Gray Wolf – A wolf pack was recently discovered near the Mount Haggin wildlife management area, and may venture into the project area periodically. As such, minimizing sight distance and open road densities within the project area becomes important. The proposed action would continue to maintain the effective road closure (i.e., a locked gate), and would work to minimize sight distance through maintaining the integrity of an aspen patch in the middle of the proposed harvest unit, only permitting mechanized equipment to reach into the aspen patch from the edge to clip lodgepole pine, and any submerchantable timber and limber pine would be retained. Otherwise, the proposed action would remove approximately 90% of the cover that currently breaks up sight distance within the proposed harvest unit. The aforementioned mitigations should sufficiently break up sight

distance within the proposed unit post-harvest so that risk to wolves would be reduced. As a result, with implementation of the proposed mitigations, the proposed action would likely have low risk of direct, indirect, or cumulative effects to wolves.

Lynx – Lynx have been reported in the vicinity (<5 miles) of the project area historically (Montana Natural Heritage Program database). The proposed action would regenerate lodgepole pine within a 46-acre patch, thereby potentially creating future early foraging habitat for this species. With gating any proposed new road construction, there would likely be low risk of direct, indirect, or cumulative effects to this species as a result of the proposed action.

Peregrine Falcon – The nearest known peregrine eyrie is located approximately 3.5 miles north of the project area. Due to the distance involved, there would be minimal risk of direct, indirect, or cumulative effects to this species.

Pileated Woodpecker – Pileated woodpeckers have been known to nest and roost in snags as small as 15 inches dbh in the northern Rockies. However, within the project area, average stand dbh for all stands ranges from 1 to 13 inches dbh (DNRC Stand Level Inventory). Thus, because of the small sized trees within the project area, the proposed action would likely have low risk of direct, indirect, or cumulative effects to this species as a result of the proposed action.

Black-backed woodpecker – The black-backed woodpecker is an irruptive species that's nesting and foraging habitats are thought to be tightly linked to recently burned areas. However, it does nest and forage in unburned forest in response to insect outbreaks (Bull et al. 1986, Hutto 1995). Although the proposed harvest would remove some insect-infested lodgepole pine, the levels of pine beetle infestation are not at the level that would attract black-backed woodpeckers. However, through harvesting the timber, the proposed action may remove potential future black-backed woodpecker habitat. Because the proposed action would not be removing currently suitable black-backed woodpecker habitat, there would be low risk of direct, indirect, or cumulative effects to this species as a result of the proposed action.

Flammulated Owl - The flammulated owl is a tiny forest owl that inhabits warm-dry ponderosa pine and cool-dry Douglas-fir forests in the western United States and is a secondary cavity nester. Nest trees in 2 Oregon studies were 22-28 inches dbh (McCallum 1994). Habitats used have open to moderate canopy closure (30 to 50%) with at least 2 canopy layers, and are often adjacent to small clearings. Because of the size of trees required for nesting by this species, and the lack of trees in this size class within the project area (see Pileated Woodpecker discussion), there would be low risk of direct, indirect, or cumulative effects to this species as a result of the proposed action. However, in compliance with DNRC's forest management rules, at least one snag and one snag recruit per acre, in the largest size class available, would be retained post-harvest in stands immediately adjacent to the harvest unit. In addition, all Douglas-fir would be retained throughout the harvest unit.

Fisher – The fisher is a medium-sized animal belonging to the weasel family. Fishers prefer dense, lowland spruce-fir forests with high canopy closure, and avoid forests with little overhead cover and open areas (Powell 1978, Powell 1977, Kelly 1977, Clem 1977, Coulter 1966). For resting and denning, fishers typically use hollow trees, logs and stumps, brush piles, and holes in the ground (Coulter 1966, Powell 1977). The proposed action would harvest approximately 46 acres of timber that may be usable by fisher. To partially mitigate these effects, the proposed action would retain a corridor along Big Gulch to facilitate travel for fisher among other suitable habitat types. The proposed action may have low risk of direct, indirect, and cumulative effects to fisher because it would reduce the width of a potential travel corridor as well as potentially amplify the effects from human development (i.e., Stumptown) that are located nearby.

Townsend's Big-eared Bat – There are several open pit mines located adjacent to the project area. However, because they are open pit, they are not considered habitat for this species. Therefore, there would be low risk of direct, indirect, or cumulative effects to this species as a result of the proposed action.

Coeur d'Alene Salamander - N/A

Columbian Sharp-tailed Grouse - N/A

Common Loon - N/A

Harlequin Duck - N/A

Northern Bog Lemming - N/A

Mountain Plover - N/A

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10. HISTORICAL AND ARCHAEOLOGICAL SITES:
Identify and determine effects to historical, archaeological or paleontological resources.

DNRC Archaeologist Patrick Rennie was contacted. No known sites have been identified. No impacts are anticipated with either alternative.

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11. AESTHETICS:
Determine if the project is located on a prominent topographic feature, or may be visible from populated or scenic areas. What level of noise, light or visual change would be produced? Identify cumulative effects to aesthetics.

No Action – The dead trees would be visible from State Highway 1, Pintlar Scenic Route. This would not cause a significant impact to the scene area because of the oblique view passing motorist would have, but it would cause some minor reduction in the scenic value.

Action – Harvesting would create an additional 46 acre irregular shaped opening and would emulate a naturally occurring stand replacement fire regime which is consistent with Montana Administrative Rules for Forest Management 36.11.408 and 36.11.409.

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12. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY:
Determine the amount of limited resources the project would require. Identify other activities nearby that the project would affect. Identify cumulative effects to environmental resources.

No impacts anticipated with either alternative.

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13. 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.

The Montana DNRC conducted an Environmental Assessment in 2004 to salvage 43 acres of beetle killed timber within the same section. A copy of the EA can be found in the Project File.

IV. IMPACTS ON THE HUMAN POPULATION

- *RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.*
- *Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.*
- *Enter "NONE" If no impacts are identified or the resource is not present.*

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14. HUMAN HEALTH AND SAFETY:
Identify any health and safety risks posed by the project.

No impacts with either alternative.

15. INDUSTRIAL, COMMERCIAL AND AGRICULTURE ACTIVITIES AND PRODUCTION:
Identify how the project would add to or alter these activities.

No Change under either alternative.

16. QUANTITY AND DISTRIBUTION OF EMPLOYMENT:
Estimate the number of jobs the project would create, move or eliminate. Identify cumulative effects to the employment market.

No Action – No additional jobs would be generated under this alternative.

Action – There would be a slight increase in employment created by the harvesting of approximately 200 MBF of timber and the associated road work.

17. LOCAL AND STATE TAX BASE AND TAX REVENUES:
Estimate tax revenue the project would create or eliminate. Identify cumulative effects to taxes and revenue.

No impacts are anticipated with either alternative.

18. DEMAND FOR GOVERNMENT SERVICES:
Estimate increases in traffic and changes to traffic patterns. What changes would be needed to fire protection, police, schools, etc.? Identify cumulative effects of this and other projects on government services

No Impacts anticipated under either alternative.

19. 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.

Anaconda/Deerlodge County is covered by a countywide master plan. Neither alternative would violate this plan

20. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES:
Identify any wilderness or recreational areas nearby or access routes through this tract. Determine the effects of the project on recreational potential within the tract. Identify cumulative effects to recreational and wilderness activities.

No change is anticipated with either alternative.

21. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING:
Estimate population changes and additional housing the project would require. Identify cumulative effects to population and housing.

No change anticipated with either alternative.

22. SOCIAL STRUCTURES AND MORES:
Identify potential disruption of native or traditional lifestyles or communities.

No change anticipated with either alternative.

23. CULTURAL UNIQUENESS AND DIVERSITY:
How would the action affect any unique quality of the area?

No change anticipated with either alternative.

24. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES:

Estimate the return to the trust. Include appropriate economic analysis. Identify potential future uses for the analysis area other than existing management. Identify cumulative economic and social effects likely to occur as a result of the proposed action.

No change anticipated with either alternative.

EA Checklist Prepared By:	**Name:**	Brian Robbins	**Date:**	10/3/2006
	Title:	Anaconda Unit Management Forester		

V. FINDING

25. ALTERNATIVE SELECTED:

The action alternative which would salvage harvest approximately 350 MBF from 46 acres is the selected alternative.

26. SIGNIFICANCE OF POTENTIAL IMPACTS:

No significant or un-acceptable impacts would occur as a result of the proposed action.

27. NEED FOR FURTHER ENVIRONMENTAL ANALYSIS:

	EIS		More Detailed EA	**XX**	No Further Analysis

EA Checklist Approved By:	**Name:**	Fred Staedler
	Title:	Anaconda Unit Manager
Signature:		**Date**:

CHECKLIST ENVIRONMENTAL ASSESSMENT

Project Name:	Willow Creek Timber Sale
Proposed Implementation Date:	June 2007
Proponent:	Montana Department of Natural Resources and Conservation
Location:	T4N, R111W, Section 36 (approximately 4 miles Southeast of Anaconda, MT)
County:	Deer Lodge

I. TYPE AND PURPOSE OF ACTION

Pursuant to the Montana Administrative Rules for Forest Management (36.11.409 and MCA 77-5-207), The Montana Department of Natural Resources and Conservation's Anaconda Unit is proposing to salvage beetle killed timber from approximately 150 acres. Approximately 2.55 miles of new road construction would be built to access the harvest units. These roads would be closed upon completion of harvest activities.

II. PROJECT DEVELOPMENT

1. PUBLIC INVOLVEMENT, AGENCIES, GROUPS OR INDIVIDUALS CONTACTED:

Provide a brief chronology of the scoping and ongoing involvement for this project.

Scoping letters, dated August 17, 2006, were mailed to adjacent landowners and those parties wishing to be notified of State Timber Sales. A timber sale notice was placed in the Anaconda Leader as well. The DNRC met with Vanna Boccadori, MTFWP Biologist and the Anaconda Sportsman's Club. Comments were received from FWP Biologist Vanna Boccadori.

2. OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION, LIST OF PERMITS NEEDED:

MTDFWP	Montana Stream Preservation Act – 124 Permit.
MTDEQ	Open Burning Permit

3. ALTERNATIVES CONSIDERED:

Alternative A: No Action.

Alternative B: Salvage approximately 1,200 MBF of beetle killed Lodgepole pine from 150 acres. Approximately 2.55 miles of new road would be needed to access the harvest units. New roads would be closed upon completion of timber harvest activities. Approximately 2 miles of existing road would be improved and maintained to provide adequate surface drainage.

III. IMPACTS ON THE PHYSICAL ENVIRONMENT

- *RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.*
- *Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.*
- *Enter "NONE" If no impacts are identified or the resource is not present.*

4. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE:

Consider the presence of fragile, compactable or unstable soils. Identify unusual geologic features. Specify any special reclamation considerations. Identify any cumulative impacts to soils.

Existing Conditions
Geology & Soils
The proposed harvest is located on a gently rolling terrain of alluvium and colluvium derived from volcanic bedrock. Shallow bedrock occurs on ridges and convex slopes, but should be rippable. No unstable or unique geology occurs on the project area.

Primary soils on foot slopes are complexes of Pax-Nivean-Litag gravelly loams forming from volcanic bedrock on mainly moderate slopes of 4-35% with lesser areas of 35 to 60%. Pax and Litag soils occur on sideslopes and concave areas. Pax and Litag soils are deep (28-60") very cobbly, ashy sandy loams with some clays at depth that help retain moisture. These soils support Lodgepole pine, Douglas fir and aspen on north and east aspects and grass and shrubs on south aspects. Erosion potential is moderate and effectively controlled with standard drainage practices. Soil displacement and compaction hazards are moderate for harvest operations and can be mitigated by limiting disturbance and season of use. Unsurfaced roads are prone to rutting if operated on when wet. Nivean soils are shallow (10-20") very gravelly loams on ridges and convex slopes forming in weathered volcanic bedrock. Niven soils support stunted trees, shrubs and grassland. Predominate slopes of 10-45% are well suited to ground based skidding operations. Skidding on slopes over 40% are at higher risk of soil displacement and erosion. Deeper soils in swales, north aspects, riparian areas and sites supporting aspen remain wet later in the spring and are prone to rutting if operated on when wet. Relatively dry or frozen soils are resistant to rutting compaction.

Environmental Effects
Alternative A
No change over current conditions.

Alternative B
Soils
Primary soil concerns are potential for excessive surface disturbance and erosion with harvest operations. Erosion risk on soils in the harvest units is low to moderate. To maintain soil productivity, and promote conifer regeneration, BMP's and the listed mitigation measures would be implemented to minimize the area and degree of soil effects associated with harvest operations. Mitigations include skid trail planning, limiting season of use to dry or frozen conditions, installing drainage where needed and retaining a portion of woody debris for nutrients and to control erosion on disturbed sites (DNRC 2004). Site specific road reconstruction requirements will be implemented that improve road drainage and control erosion. Temporary roads would be stabilized and revegetated.

For nutrient cycling it is desirable to leave woody debris (>3" dia.) at ~5-10 tons/acre on the harvest units. The insect mortality has resulted in most trees shedding their needles, which helps return nutrients to the soil. Portions of the harvest area would be scarified and jackpot burned to promote the regeneration of aspen clones important to wildlife and biodiversity. The machine scarification would be limited to slopes of 35% or less too avoid excessive soil displacement that would affect soil productivity.

Cumulative Effects to soils
Alternative A
No change over current conditions.

Alternative B
Cumulative effects to soils can occur from repeated ground skidding entries into the harvest area and additional road construction, depending on area. There are minimal effects of previous harvest over 80 years ago and the sites have been regenerated. The soil survey identified this area as having some moderate impacts on vegetation and soils from smelter operations at Anaconda. No historic harvest units would be reentered, and there is low risk of cumulative effects based on the mitigation planned (see mitigation measures) that would minimize the area of detrimental soil impacts to less than 20% of harvest units. Large woody debris would be retained for nutrient cycling and long term productivity.

5. WATER QUALITY, QUANTITY AND DISTRIBUTION:

Identify important surface or groundwater resources. Consider the potential for violation of ambient water quality standards, drinking water maximum contaminant levels, or degradation of water quality. Identify cumulative effects to water resources.

Affected Watershed

The proposed Willow-Glenn Timber Sale project is located on state trust land within Section 36, T4N, R11W of Deer Lodge County. The project area is on the foothill slopes in the lower portion of the Willow Creek watershed (HUC 170102010209) about 4 miles southeast of Opportunity, Montana. Willow Creek is a 4th order perennial tributary to Mill Creek and the Upper Clark Fork River. Willow Creek drains a watershed area of approximately 18,343 acres. The main stem stream channel of Willow Creek flows north along the east DNRC property boundary within section 36.

Alternative A

No change over current conditions.

Alternative B

Environmental Effects

Water Quality Effects

The proposed ground based timber harvest and road maintenance is expected to result in low risk of direct or in-direct water quality impacts due to erosion and sediment delivery. Two harvest units are adjacent to tributary streams. All wetlands, seeps and stream segments would be avoided or protected with equipment restriction where needed to prevent soil disturbance and erosion. Protection boundaries (SMZ's and RMZ's) for restriction of equipment operations, would be located to ensure protection of vegetative buffers and prevent erosion or sediment delivery to tributary streams.

As part of salvage treatments, major improvements would be made to control erosion on existing roads and reduce sediment sources. The county access road would be relocated upslope to remove the road from the stream bottom and stabilized. This chronic source of sediment would be eliminated and the road would no longer be at risk of flooding by beaver activities. On new road construction adequate drainage would be installed and revegetated to control erosion on roads which would help reduce erosion and disperse runoff from roads.

DNRC would implement all applicable BMP's, and reasonable mitigation and erosion control practices during timber harvest, road maintenance and road use activities to control erosion and potential for sediment delivery. The potential for increase in water yield resulting from the proposed harvest is expected to be negligible compared to no-action, considering this is mainly a salvage harvest of dead and dying trees on less than 2% of the watershed area. Therefore, this project action has low risk of direct or indirect impacts to water quality or downstream beneficial uses.

Cumulative Watershed Effects of Action Alternative

DNRC completed a coarse filter screening for watershed cumulative effects (ARM 36.11.423) for this project including examining past projects for cumulative effects assessments. Previous harvest on the DNRC section occurred over 100 years ago and was associated with historic Anaconda Mining activities. Trees have regenerated on DNRC and the adjacent lands which were more recently harvested.

There is low risk of cumulative watershed impacts from water and sediment yield increases occurring from this proposal due to the following reasons: The low level of precipitation occurring within the project area (12-14"/yr), The low level of additional canopy removal and patchy nature of the proposed harvest. The proposed action alternative would not noticeably increase water yield compared to the no-action of leaving dead trees with lost canopy interception and evapotranspiration. The existing and proposed levels of harvest are below the levels normally associated with detrimental increases in water yield, peak flow, or duration of peak flows. The proposed ground based timber harvest is expected to result in moderate risk of on-site erosion and low risk of sediment delivery, due to buffer distances and implementation of mitigation measures. Existing water quality problems on the county road would be greatly improved, by relocating and stabilizing the road. This project would make a long term improvement in water quality. For these reasons, no cumulative impacts to water quality or downstream beneficial uses are anticipated to result from the proposed actions

The proposed harvest area is drained by a class 1 stream and discontinuous segments of Class II and Class III streams that are unnamed tributaries to Willow Creek. The area also includes several wetlands and springs. Average precipitation ranges from a high of 24 in/yr in the headwaters near Sugarloaf Mountain (elevation 7766 ft) to a low of 11 in/yr on the valley floor near Opportunity (elevation 5000 ft.). Average precipitation is low at 12-14 in/yr within the state section 36 and elevation range is 5380 to 6400 ft. Precipitation occurs mainly as snow, and spring runoff is not flashy due to low precipitation, moderate stream gradients and slopes. Summer thunderstorms may cause periods of flashy runoff.

Water Quality Regulations and Uses

The Willow Creek drainage is tributary to Mill Creek, and as part of the Upper Clark River, is classified as B-1 in the Montana Surface Water Quality Standards (ARM 17.30.623). Waters classified B-1 are suitable for drinking, culinary and food processing purposes after conventional treatment for removal of naturally present impurities. Water quality must also be suitable for bathing, swimming and recreation; growth and propagation of salmonid fishes, and associated aquatic life, waterfowl and furbearers; and agricultural and industrial water supply (ARM 17.30.623 (1&2)). Among other criteria for B-1 waters, no increases are allowed above naturally occurring concentrations of sediment, (except as permitted in 75-5-318, MCA) which will or are likely to create a nuisance or renders the waters harmful, detrimental or injurious to public health, recreation, safety, welfare, livestock, wild animals, birds, fish or other wildlife (ARM 17.30.623(2)(f)).

Naturally occurring includes resource 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.

Downstream beneficial uses in Willow Creek include: agriculture, industrial, fisheries, irrigation, and livestock watering. Willow Creek is not part of a municipal watershed. Willow Creek has been identified on the State's 303(d) list of impaired bodies of water (MTDEQ 2006). Willow Creek is listed as impaired water for partially supporting aquatic life and cold-water fishery due to other habitat alterations and siltation. Sources of impairment include agriculture and grazing. Water contents of Total P also impair recreation, aquatic life, and fishery beneficial uses. Some metals including arsenic, cadmium, copper and lead have been found to be creating some toxic conditions and exceed drinking water standards. The most likely source of the metals is fallout from the historically operated Anaconda smelter.

Willow creek experiences common low flows and dewatering from water use diversions below the state section.

Existing Conditions- Water Quality

Past management activities in the Willow Creek watershed include, timber harvest, mineral exploration, grazing and road construction. The proposed haul route from Opportunity would utilize an existing county road located across private, Montana Fish Wildlife and Parks (MTFWP) and DNRC land in the Willow Creek drainage. The county road parallels Willow Creek up to the SE corner of the DNRC section 36. FWP closes this road from December 1 to May 1.

Willow Creek has moderate channel stability in the lower reaches of private lands below the state ownership. It appears that the segments of undercut banks are due to a combination of historic and current livestock grazing, past flood damage, and likely from loss of beaver dams. Willow Creek has a relatively stable stream channel on DNRC section 36, although braided from numerous beaver ponds that have diverted flows and widened the sub-irrigated bottom. The mainstem of Willow creek has a series of beaver ponds through the State section and continues about ½ mile downstream of the state boundary. Beaver ponds provide pools for fish and temporary sediment storage. The ponds have raised the water level and are surrounded by dense willow along the Willow creek's riparian bottom. At one site (BV1) in SW section 30, T4N, R11 W, the ponds divert flow onto the existing county road for about 240 feet before flowing back into the natural channel. The combination of water flowing down the native road surface and periodic road traffic contributes sediment to Willow Creek and degrades water quality. This is the largest contributing source of sediment identified in the project area. Other smaller sediment sources are an undercut stream bank on a stream meander on FWP ownership and an unimproved crossing on an unnamed tributary to Willow creek and inadequate road drainage on the county road. A large proportion of sediments are trapped in the beaver ponds.

There are two segments of existing road (approximately 1.8 miles) on the state section. There is one unimproved small stream crossing in the NE corner of the section on the county access road that is a seasonal sediment source when runoff flows in this tributary. An upper road in the SW corner of the section was constructed in the 1970's to provide access from Cabbage Gulch to the headwaters of the watershed. This closed road requires some road drainage to meet BMP's, but is stable, revegetated and does not cross a stream or impact water quality on the State section.

Cumulative Watershed Effects
A cumulative watershed effects assessment included the combined past and current effects across all ownerships in the watershed analysis area. Timber harvest and associated activities can affect the timing, distribution and amount of water yield in a watershed. DNRC completed a course filter evaluation of watershed conditions, road drainage and cumulative effects as outlined in Forest Management Rules (ARM 36.11.423) concerning watershed management. The coarse filter approach consisted of on-site evaluation, of harvest areas and roads, and assessing the extent of past harvest activities, through the use of maps and aerial photographs.

The watershed analysis area for this project includes the headwaters of Willow Creek to approximately 2 miles below section 36. The watershed analysis area is 9055 acres of which approximately 70% is a mixed forest of lodgepole pine, Douglas-fir, spruce and extensive aspen. Approximately 10% of the watershed analysis area was previously harvested, on FWP lands, in the early 1970's. These previous harvest areas have regenerated to mixed conifer species and aspen which have largely recovered the initial water yield increases to less than 8 %. Water yield was determined using the Equivalent Clearcut Acres (ECA) method as outlined in Forest Hydrology part 2 (Haupt et al. 1976). ECA is a function of total area roaded and harvested, % crown cover removal in harvest areas and the amount of vegetative recovery that has occurred in the harvest area. Water yield increases are predicted to be well below the 15% threshold where detrimental effects may occur.

There are point sources of road impacts as identified in the water quality discussion, but minimal cumulative effects of roads. Based on analysis of aerial photos the density of existing roads is low at less than 0.5 miles of road per square mile of the watershed analysis area.

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6. AIR QUALITY:
What pollutants or particulate would be produced? Identify air quality regulations or zones (e.g. Class I air shed) the project would influence. Identify cumulative effects to air quality.

Alternative A: No change over current conditions.

Alternative B: A minor amount of particulate would be produced during slash pile burning. Burning would be done in accordance with the Montana/Idaho Airshed Coordination Group and DEQ regulations.

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7. VEGETATION COVER, QUANTITY AND QUALITY:
What changes would the action cause to vegetative communities? Consider rare plants or cover types that would be affected. Identify cumulative effects to vegetation.

Alternative A
The dead trees would remain on site and many would be expected to fall over within the next 15 years creating an above average fuel loading which could lead to a fire of greater intensity than what would be expected to occur historically, should a fire start. Natural regeneration would be expected over time.

Alternative B
The proposed action, in addition to salvaging bug-killed lodgepole pine, would regenerate aspen within the project area. Through ground-based harvesting, mechanical scarification of aspen root networks would promote clonal regeneration throughout the proposed harvest area. However, within the southwestern-most proposed harvest unit, in addition to mechanical scarification, existing aspen trees would be harvested or trampled to reduce competition for sunlight among the resulting aspen seedlings and saplings. With the proposed harvesting occurring between June 1 and October 15th, and jackpot and broadcast burning occurring the

following Spring, aspen roots should be sufficiently stimulated to produce abundant root suckers. The harvest units would focus on salvage of lodgepole pine and broadcast burned, which would likely kill most of the remaining standing aspen. As a result, the proposed action would diversify the aspen age structure within the affected parcel, while also creating aspen snags that benefit numerous wildlife species, thereby promoting biodiversity within the parcel. As a result, there would likely be short-term (5 to 15 years) direct and indirect effects, and long-term beneficial cumulative effects from the proposed action.

No rare plants have been identified in the project area (Reference Project File, Montana Natural Heritage Program letter). To prevent introduction of new weeds, off-road equipment would be cleaned and inspected prior to entry into harvest areas. Newly disturbed roads and landing would be re-seeded with a certified weed free grass mixture. There is low risk of direct or cumulative impacts to weeds.

Cruise plots estimate the existing tree mortality to be near 90% with additional mortality expected in the next few years. Natural regeneration would be expected with both alternatives but in a shorter time frame with the action alternative due to the ground scarification and mechanical preparation of a seed bed.

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8. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS:
Consider substantial habitat values and use of the area by wildlife, birds or fish. Identify cumulative effects to fish and wildlife.

Alternative A
No change over current conditions.

Alternative B
Effects of the proposed action
Peregrine Falcon—There is concern that the proposed harvest activities would alter peregrine falcon habitat or provide unnecessary disturbance. The project area is approximately 10 miles south of the nearest known peregrine falcon nest. Thus, due to the distance between the nest and project area, there would be low risk of direct, indirect, or cumulative effects to peregrine falcons as a result of the proposed action.

Black-backed Woodpecker—There is concern that the proposed harvest activities would alter black-backed woodpecker habitat or provide unnecessary disturbance. The black-backed woodpecker is an irruptive species that forages opportunistically on outbreaks of wood boring beetles primarily in recently burned habitats, and to a lesser degree in unburned habitats. It is also considered to be a sensitive species in Montana. Although the black-backed woodpecker's nesting and foraging requirements are thought to be tightly linked with burned areas, it does nest and forage in unburned forest in response to insect outbreaks (Bull et al. 1986, Hutto 1995). The affected parcel is located >20 miles from any of the large (i.e., >5,000 acres) burns in the last 5 years. As a result, diffuse populations of black-backed woodpeckers may inhabit this area, subsisting on insect outbreaks.

The proposed action may salvage harvest *Dendrocthonous* beetle-infested lodgepole pine on approximately 150 acres within the affected parcel. As a result, the proposed action would remove a potential food source for black-backed woodpeckers within the project area. However, there appear to be several hundred acres of similarly affected habitat on the adjacent Mt. Haggin Wildlife Management Area that could provide similar resources for this species. As a result, the proposed action would likely have low risk of direct and indirect effects, and minimal risk of cumulative effects to this species.

Harlequin Duck—There is concern that the proposed harvest activities would alter harlequin duck habitat or provide unnecessary disturbance. The project area is approximately 5 miles south (i.e., downstream) of the nearest known pair of harlequins, and separated by the town of Anaconda. Thus, due to the distance between the pair and project area, there would be low risk of direct, indirect, or cumulative effects to harlequin ducks as a result of the proposed action.

Common Loon—There is concern that the proposed harvest activities would alter loon habitat or provide unnecessary disturbance. There are no known loons, or loon nests located within 10 miles of the project area. Thus, there would be low risk of direct, indirect, or cumulative effects to loons as a result of the proposed action.

Townsend's Big-eared Bat—There is concern that the proposed harvest activities would alter Townsend big-eared bat habitat or provide unnecessary disturbance. Within a 2-mile radius there are several mineral operations, none of which utilize addits. Thus, due to the distance between potential habitat and project area, there would be low risk of direct, indirect, or cumulative effects to this species as a result of the proposed action.

Coeur d'Alene Salamander—There is concern that the proposed harvest activities could affect this species. This species requires waterfall spray zones, talus, or cascading streams. Such features do not occur within the project area. Thus, the proposed action would have low risk of direct, indirect, or cumulative effects to this species.

Northern Bog Lemming—There is concern that the proposed harvest activities could affect this species. The sphagnum meadows, bogs or fens with thick moss mats required by this species are not present within the project area. Thus, the proposed action would have low risk of direct, indirect, or cumulative effects to this species.

Mountain Plover—There is concern that the proposed harvest activities could affect this species. The short-grass prairie habitats required by this species are not present within the project area. Thus, the proposed action would have low risk of direct, indirect, or cumulative effects to this species.

Columbian Sharp-tailed Grouse—There is concern that the proposed harvest activities could affect this species. One of two known populations of Columbian sharp-tailed grouse is known to reside in the vicinity south and west of Kleinschmidt and Browns Lakes, which are located approximately 60 miles north of the project area (Deeble 1996). Thus, the proposed action would have minimal risk of direct, indirect, or cumulative effects to this species.

Big Game—White-tailed deer, mule deer, elk, and moose utilize the area in and around the project area. However, the project area does not contain winter range for any of these species (V. Boccadori, MT FWP, pers. comm., September 2006). The proposed action would harvest lodgepole pine on approximately 123 acres, regenerate aspen through clearcutting on approximately 40 acres, and may use prescribed fire on approximately 150 acres. The resulting aspen regeneration would likely provide ample hiding cover within 10 years, and abundant forage for these big game species. The units along Willow Creek would be managed to promote conifer regeneration for subsequent thermal and hiding cover, while the southwestern-most unit would be managed for aspen regeneration. Due to the likely vegetative response from the proposed treatment, big game would likely benefit from the proposed action. As a result, there would likely be low risk of direct, indirect, and cumulative effects to big game as a result of the proposed action.

Pileated Woodpecker—This species feeds primarily on carpenter ants and woodboring beetle larvae (Bull and Jackson 1995). The pileated woodpecker nests and roosts in larger diameter snags, typically in mature to old-growth forest stands (Bull et al. 1992, McClelland et al. 1979). Due primarily to its large size, pileated woodpeckers require nest snags averaging 29 inches dbh, but have been known to nest in snags as small as 15 inches dbh in Montana (McClelland 1979). Pairs of pileated woodpeckers excavate 2-3 snags for potential nesting sites each year (Bull and Jackson 1995). The primary prey of pileated woodpeckers, carpenter ants, tend to prefer western larch logs with a large end diameter greater than 20 inches (Torgersen and Bull 1995). Thus, pileated woodpeckers generally prefer western larch and ponderosa pine snags > 15 inches dbh for nesting and roosting, and would likely feed on downed larch logs with a large end diameter greater than 20 inches. However, they are also known to nest in aspen. There are approximately 18 acres of potential pileated woodpecker habitat (average stand dbh $\geq$ 15 inches, moderate or well-stocked sawtimber; SLI database) within the project area. The proposed action would remove lodgepole pine within approximately 5 of those 18 acres. Through removal of the lodgepole pine, it is estimated that the 5 acres of affected pileated woodpecker habitat would be reduced from approximately 70% canopy closure to approximately 0%. Such conditions would marginalize this patch of habitat for this species due to the pileated woodpecker's affinity for higher than available canopy closure (Bull and Jackson 1995). Because of the few affected acres, there would likely be low risk of direct and indirect effects to a few individuals of this species through potential increases in predation risk or displacement.

Within a 1-mile radius of the project area, much of the timber has been infested with pine beetle. As a result, there will likely be an abundance of foraging habitat in the cumulative effects analysis area, but possibly very

little potential nesting habitat due to the loss in canopy closure associated with trees killed by pine beetles. Thus, there may be low risk of cumulative effects to pileated woodpeckers as a result of the proposed action.

Fisher— Fishers normally occur in landscapes with abundant mature forest, and they concentrate their activities in low elevation riparian areas with high canopy closure (Powell and Zielinski 1994). Based on habitat type, there are approximately 156 acres of potential fisher habitat within the project area, of which, approximately 105 acres are proposed for harvest. The proposed action would harvest all merchantable lodgepole pine within the proposed harvest units, and reduce the associated canopy closure in the affected habitat. Additionally, there would likely be broadcast and/or jackpot burning of slash, which would reduce available coarse woody debris. There would likely be low risk of direct, indirect, and cumulative effects to fisher because much of the affected habitat would not be considered prime fisher habitat due to stand age and close proximity to non-forested areas.

Flammulated Owl— Within a 1-mile radius of the project area, there are approximately 402 acres of flammulated owl preferred habitat types on School Trust lands, and approximately 1,100 acres on the adjacent Mt. Haggin Wildlife Management Area. Of the approximately 402 acres of potential flammulated owl habitat within the project area, the proposed action would harvest only lodgepole pine on approximately 110 acres, and lodgepole pine and aspen on approximately 40 acres. Such action would open the stand, promote growth of understory shrubs, and regenerate aspen. As a result, insect production (i.e., prey for flammulated owls) may be enhanced post-harvest. Thus, there would be low risk of direct, indirect, or cumulative effects to flammulated owls as a result of the proposed action because it may enhance habitat suitability while increasing foraging opportunities.

Existing Conditions- Fisheries
Willow Creek supports a known fishery. Species present include brown trout, brook trout, slimy sculpin and westslope cutthroat trout (WCT), based on fish data of relative abundance without population estimates. A complete fishery survey has not been completed for Willow Creek, but WCT are known to occur in the stream from fishermen accounts and are extrapolated based on surveys in adjacent drainages (MFISH 2006). The genetic nature of the WCT are not known but potentially may include hybridized fish, due to presence of brook trout. Fish were observed in the beaver ponds along Willow Creek. The source of road sediment on the county road is expected to degrade fish habitat in Willow Creek, but the degree of impact is unknown based on the buffer capacity of beaver ponds and lack of survey fish information.

Fisheries Effects
Alternative A
With no action, some natural shading loss from dying trees will occur along the unnamed tributary stream in the SW corner of the section. However this reduction in shading is not expected to alter water temperatures or fish habitat, due to continued shading of topography and extensive willow shrubs. Sediment from the road problem at site BV-1 would continue to affect fish habitat.

Alternative B
With the action alternative, dead and dying lodgepole pine would be removed from sites above the unnamed tributary to Willow Creek. The tributary would be protected with Streamside management zones (SMZ) and the combination of topography and extensive willow shrubs provide stream shading that will reduce solar input to the stream. There is low risk of direct, indirect or cumulative impacts to fisheries in Willow Creek and its tributary with the proposed timber harvest and road construction, due to the following reasons: 1) SMZ and RMZ boundaries would be established to limit disturbance near water resources and protect vegetation to trap sediment 2) combined mitigation measures for harvest operations and season of use are all directed at minimizing soil disturbance to prevent erosion and sedimentation, 3) road relocation and streamside stabilization would greatly reduce and improve an existing chronic sedimentation problem. For these reasons; sediment delivery would be reduced and no increase in stream water temperatures or impacts to potential fish habitat are expected to occur as a result of the proposed action alternative.

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9. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES:
Consider any federally listed threatened or endangered species or habitat identified in the project area. Determine effects to wetlands. Consider Sensitive Species or Species of special concern. Identify cumulative effects to these species and their habitat.

Bald Eagle (Federally Threatened)—There is concern that recreational activities would alter bald eagle habitat or provide unnecessary disturbance. The project area and haul route are approximately 18 miles southeast of the nearest known bald eagle nest. Thus, due to the distance between the nest and project area, there would be low risk of direct, indirect, or cumulative effects to bald eagles as a result of the proposed action.

Gray Wolf (Federally Endangered)—There is concern that recreational activities would provide unnecessary disturbance to gray wolves. The project area is located near the newly documented Mt. Haggin pack. Not much is known about the pack, however, should a den or rendezvous site be located within a mile of the project, a DNRC wildlife biologist would be consulted to determine appropriate mitigations for implementation. Additionally, post-harvest all newly constructed roads would be closed using effective road closure devices (e.g., locked gates, Kelly humps, etc.). Thus, there would likely be low risk of direct, indirect, or cumulative effects to gray wolves as a result of the proposed action.

Grizzly Bear (Federally Threatened)—The project area is located approximately 62 miles south of the Northern Continental Divide Ecosystem, and approximately 39 miles south of mapped occupied grizzly bear habitat (Wittinger et al. 2002). However, grizzly bear tracks have been documented on the nearby Garrity Wildlife Management Area (J. Jonkel, MTFWP, personal comm., 2006), approximately 7 miles NW of the project area. Within the approximately 675 sq. mile (431,828 acres) cumulative effects analysis area, there are approximately 1,190 miles of open road, yielding an open road density of 1.76 miles of open road per square mile. Total road density within this area is approximately 1.77 miles of road per square mile. Within the project area, there are currently 2.49 miles of total road, for a total road density of approximately 2.51 miles of road per square mile.

The proposed action would harvest approximately 150 acres of timber, largely bug-killed lodgepole pine, and construct approximately 2.55 miles of new road that would be closed to motorized vehicles post-harvest. As a result, total road density within the project area would increase from approximately 2.51 to 5.08 miles of road per square mile, and open road density would remain unchanged. Due to the nature of how lodgepole pine grows, the proposed harvest would likely result in large group selection harvests, and a clearcut that may be 40 acres in area. As a result, sight distance would temporarily be increased within the harvest units, for approximately 5 to 10 years until seedling and sapling lodgepole pine and aspen have become established on site. Once harvested and burned, the site should produce numerous aspen, willow and lodgepole pine sprouts, with the former two species providing ample forage for big game species, which would serve as prey. Because of the likely limited duration in estimated loss of cover (5 to 10 years), there would likely be low risk of direct, indirect, or cumulative effects to grizzly bears as a result of the proposed action.

Canada Lynx (Federally Threatened)—There is no lynx habitat within the affected parcel. The proposed action would regenerate lodgepole pine and aspen, which would provide cover and forage for potential prey species, such as snowshoe hares and grouse. As a result, there would likely be low risk of direct, indirect and cumulative effects to lynx as a result of the proposed action.

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10. HISTORICAL AND ARCHAEOLOGICAL SITES:

Identify and determine effects to historical, archaeological or paleontological resources.

DNRC Archaeologist Patrick Rennie was contacted. No known sites have been identified and no impacts are anticipated with either alternative.

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11. AESTHETICS:

Determine if the project is located on a prominent topographic feature, or may be visible from populated or scenic areas. What level of noise, light or visual change would be produced? Identify cumulative effects to aesthetics.

No Action – The dead trees would be visible from State Highway 1, Pintlar Scenic Route. This would not cause a significant impact to the scene area because of the oblique view passing motorist would have, but it would cause some minor reduction in the scenic value.

Action – Harvesting would create an additional 46 acre irregular shaped opening and would emulate a naturally occurring stand replacement fire regime which is consistent with Montana Administrative Rules for Forest Management 36.11.408 and 36.11.409.

12. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY:
Determine the amount of limited resources the project would require. Identify other activities nearby that the project would affect. Identify cumulative effects to environmental resources.

No impacts anticipated with either alternative.

13. 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.

None

IV. IMPACTS ON THE HUMAN POPULATION

- *RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.*
- *Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.*
- *Enter "NONE" If no impacts are identified or the resource is not present.*

14. HUMAN HEALTH AND SAFETY:
Identify any health and safety risks posed by the project.

No impacts with either alternative.

15. INDUSTRIAL, COMMERCIAL AND AGRICULTURE ACTIVITIES AND PRODUCTION:
Identify how the project would add to or alter these activities.

No Change under either alternative.

16. QUANTITY AND DISTRIBUTION OF EMPLOYMENT:
Estimate the number of jobs the project would create, move or eliminate. Identify cumulative effects to the employment market.

No Action – No additional jobs would be generated under this alternative.

Action – There would be a minor temporary increase in employment created by the action alternative.

17. LOCAL AND STATE TAX BASE AND TAX REVENUES:
Estimate tax revenue the project would create or eliminate. Identify cumulative effects to taxes and revenue.

No impacts are anticipated with either alternative.

18. DEMAND FOR GOVERNMENT SERVICES:
Estimate increases in traffic and changes to traffic patterns. What changes would be needed to fire protection, police, schools, etc.? Identify cumulative effects of this and other projects on government services

No Impacts anticipated under either alternative.

19. 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.

Anaconda/Deerlodge County is covered by a countywide master plan. Neither alternative would violate this plan

20. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES:
Identify any wilderness or recreational areas nearby or access routes through this tract. Determine the effects of the project on recreational potential within the tract. Identify cumulative effects to recreational and wilderness activities.

No change is anticipated with either alternative.

21. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING:
Estimate population changes and additional housing the project would require. Identify cumulative effects to population and housing.

No change anticipated with either alternative.

22. SOCIAL STRUCTURES AND MORES:
Identify potential disruption of native or traditional lifestyles or communities.

No change anticipated with either alternative.

23. CULTURAL UNIQUENESS AND DIVERSITY:
How would the action affect any unique quality of the area?

No change anticipated with either alternative.

24. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES:
Estimate the return to the trust. Include appropriate economic analysis. Identify potential future uses for the analysis area other than existing management. Identify cumulative economic and social effects likely to occur as a result of the proposed action.

Alternative A – No value from the dead trees would be captured.

Alternative B – The proposed action alternative would capture the value of the dead trees and generate approximately $220,000 for the Common School Trust Fund.

EA Checklist Prepared By:	**Name:**	Brian Robbins	**Date:**	12/11/2006
	Title:	Anaconda Unit Management Forester		

V. FINDING

25. ALTERNATIVE SELECTED:

The action alternative which would salvage harvest approximately 1,200 MBF from 150 acres is the selected alternative.

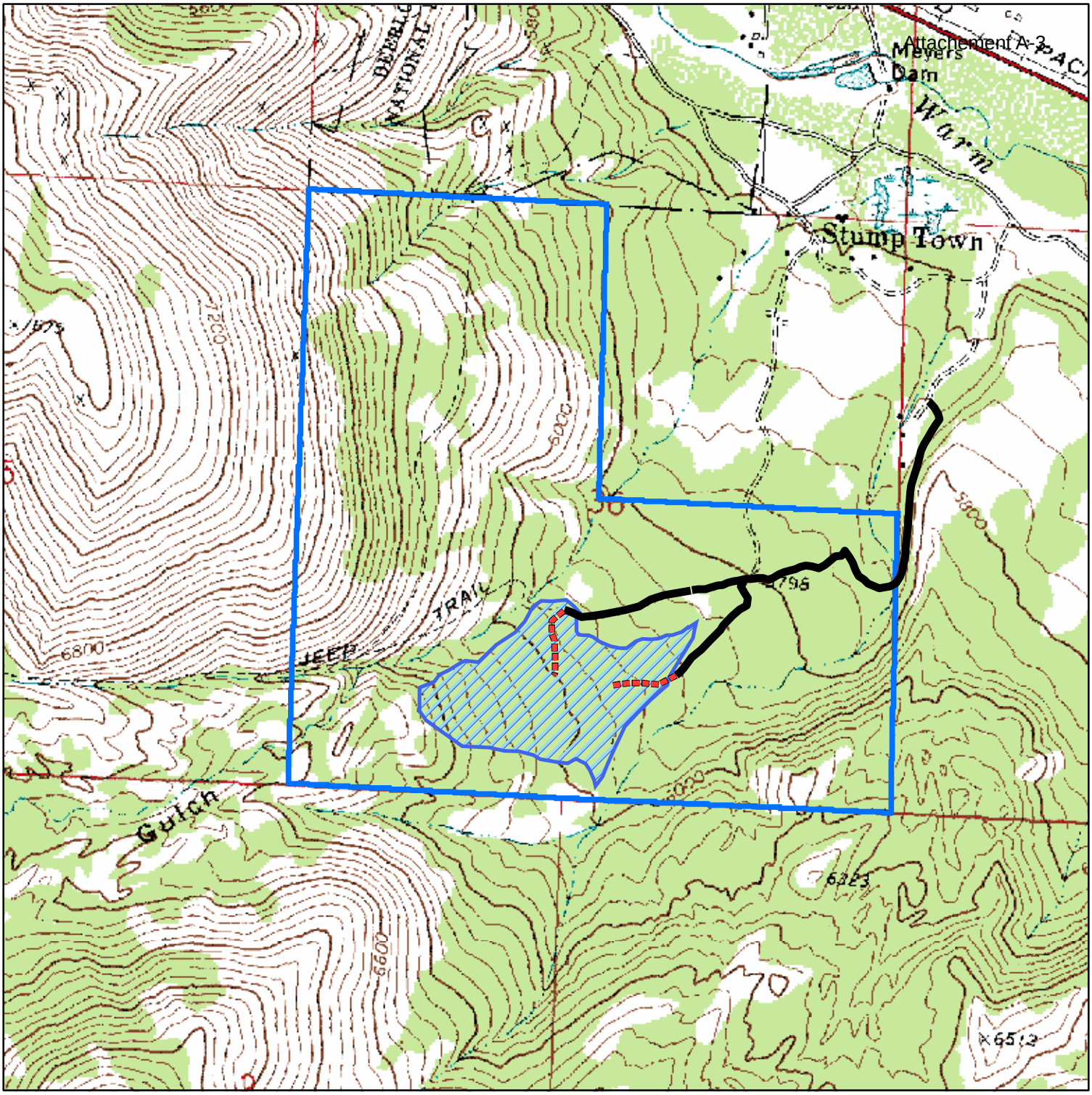
26. SIGNIFICANCE OF POTENTIAL IMPACTS:

No significant or un-acceptable impacts would occur as a result of the proposed action.

27. NEED FOR FURTHER ENVIRONMENTAL ANALYSIS:

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

EA Checklist Approved By:	**Name:**	Fred Staedler
	Title:	Anaconda Unit Manager
Signature:		**Date**:

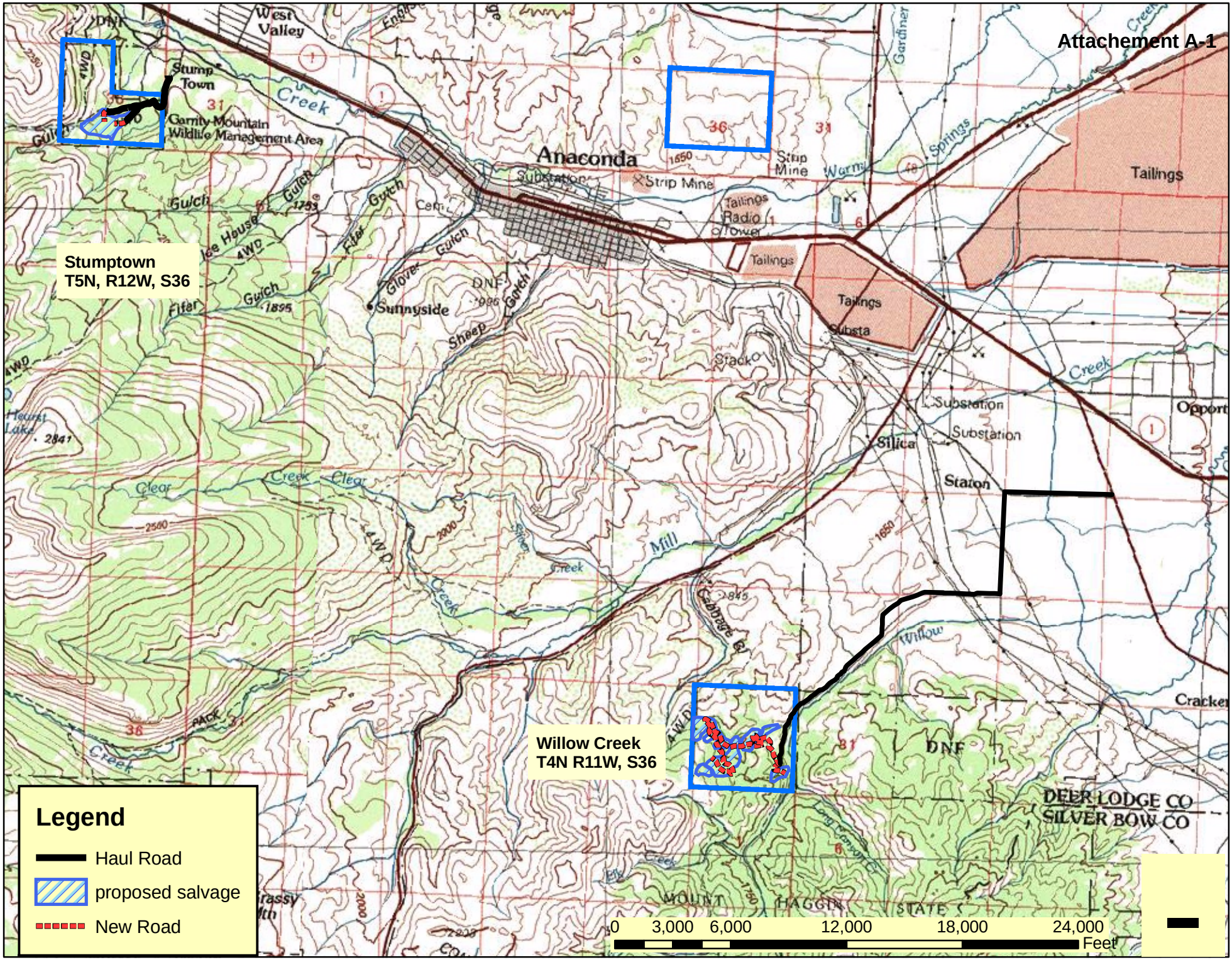


Willow Creek Timber Sale
Stumptown Section
T5N, R12W, Section 36

Legend

- New Road
- Haul Road
- Harvest Unit

0 420 840 1,680 2,520 3,360 Feet


Attachement A-1
Stumptown
T5N, R12W, S36
Willow Creek
T4N R11W, S36
Legend
Haul Road
proposed salvage
New Road
0 3,000 6,000 12,000 18,000 24,000
Feet
Anaconda
West Valley
Stump Town
Garrity Mountain Wildlife Management Area
Sunnyside
Strip Mine
Tailings
Radio Tower
Substation
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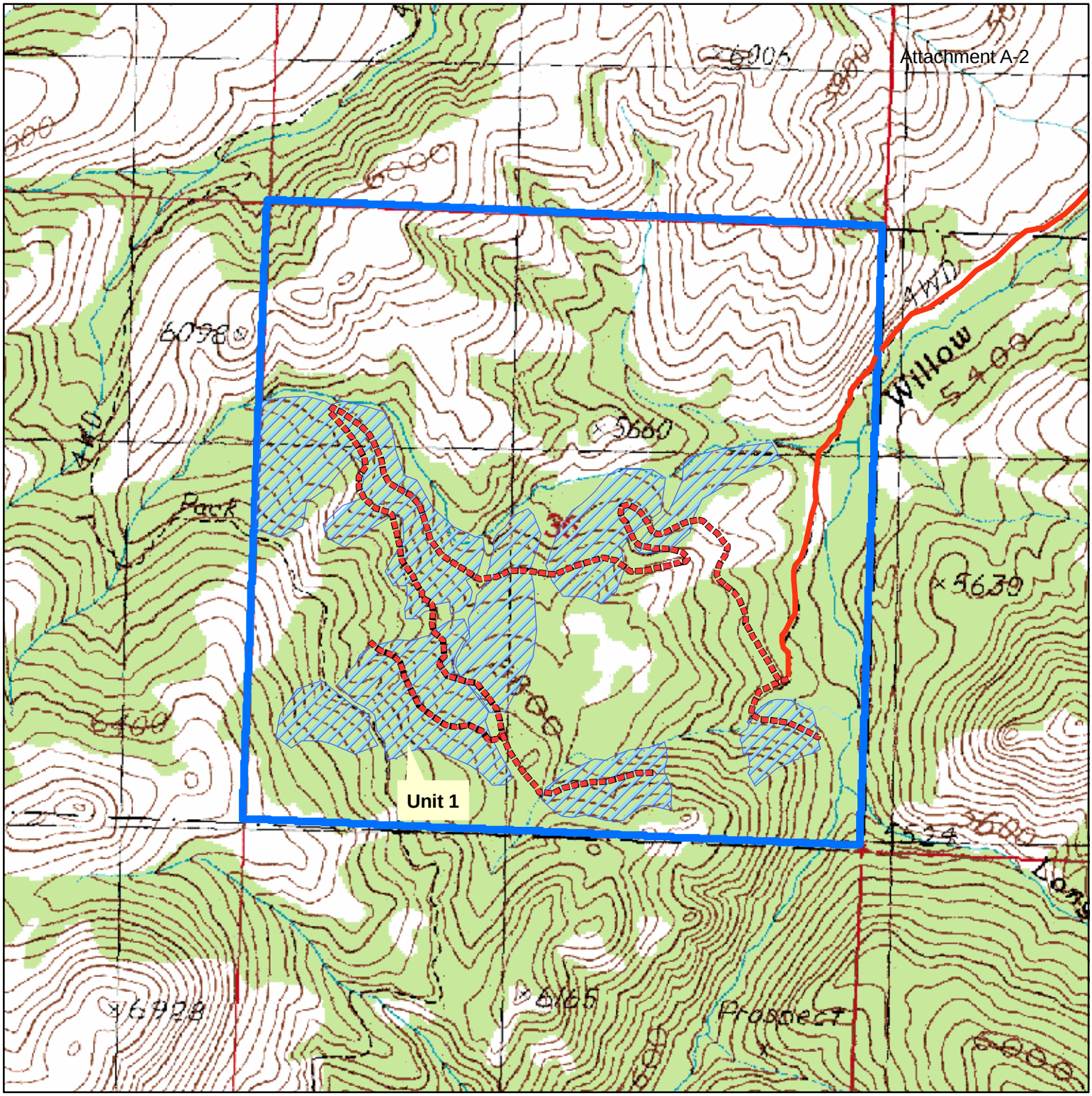
SILVER BOW CO
MOUNT HAGGIN STATE



Willow Creek Timber Sale
Willow Creek Section
T4N, R11W, Section 36

Legend

- New Road
- Existing Road
- Proposed Salvage
- State Land

0 405 810 1,620 2,430 3,240 Feet