

CHECKLIST ENVIRONMENTAL ASSESSMENT

Project Name:	Big Hole Valley Area Alternative Practice Assessment
Proposed Implementation Date:	Upon Signature (s)
Proponent:	Mike Atwood – DNRC Forester (Dillon Unit)
Location:	Beaverhead Mountains /Big hole Valley / West Pioneers
County:	Beaverhead

I. TYPE AND PURPOSE OF ACTION

The Montana Department of Natural Resources and Conservation (DNRC) Dillon Unit is receiving and assessing Streamside Management Zone (SMZ) Alternative Practice requests from non-industrial private forest (NIPF) landowners and government agencies (Forest Service, and BLM) who own or manage property adjacent to streams, lakes and other water bodies in the Big Hole Valley bordered by the Beaverhead Mountains to the west, and Pioneer Mountains to the east.

This analysis area contains upland Class 1, 2, and 3 tributaries to the Big Hole River in the Missouri River Basin. The Missouri River drainage, including tributaries to the Big Hole River, is classified as 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, agricultural, and industrial uses. Among other criteria for B-1 waters, no increases are allowed above naturally occurring concentrations of sediment, which will 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.

This area has been significantly affected by mountain pine beetle infestations over the past 5 years impacting the lodgepole pine stands. Numerous private landowners and government agencies have inquired about Alternative Practices to SMZ law that would facilitate removal of dead and dying trees while the resource has value with specific mitigation measures to protect water quality. Concentrations of dead, dying and diseased stands present a safety hazard to residents, homes, cabins, agricultural improvements, livestock and recreationists. Fuels and associated fire risk would be reduced where practices adjacent to streams are applied near homes, cabins and other improvements. Landowners desire to remove the dead timber and promote natural regeneration to rehabilitate the SMZ.

According to MCA 77-5-301 through 307, DNRC is authorized to administer and enforce the provisions of the SMZ Law. This Law was developed to protect the public interest of water quality and quantity within forested areas; provide for standards, oversights and penalties to ensure forest practices conserve the integrity of SMZ's; provide guidelines for wildlife

management within SMZ's; and allow operators necessary flexibility to use practices appropriate to site-specific conditions in the SMZ. ARM 36.11.301 through 313 further specify the design of SMZ boundaries, allowable activities and prohibitions within the SMZ, penalties and other related provisions.

According to MCA 77-5-304 and ARM 36.11.310, DNRC may approve alternative practices that are different from practices required by the SMZ Law only if such practices would be otherwise lawful and continue to conserve or not significantly diminish the integrity and function of the SMZ. The proximity of the beetle infested trees to homes, cabins, docks, roads and recreation areas has created safety issues that may require treatments outside of the allowances of the SMZ law. Treatments would be approved on a case by case basis and would generally be limited to operation of a track propelled feller-buncher inside the 50 foot SMZ but no closer than 15 feet to the ordinary high water mark (OHWM). These treatments would be conducted on slopes less than 20% and would allow removal (salvage) of dead, recently attacked, and diseased lodgepole pine to below minimum retention standards as identified under Rules 4 and 5 in the *Montana Guide to the Streamside Zone Law and Rules 2006* (ARM 36.11.310-313). Removal to below minimum retention standards outlined in the rules would be allowed for Class 1 and Class 2 streams. Class 1 streams where dead or infested lodgepole pine comprises less than 50% of the standing trees, removal to below minimum standards may be allowed with specific conditions outlined in each Alternative Practice to insure protection of fish habitat, bank stabilization and larger older dead recruitment material availability. Additional stipulations to mitigate impacts would include:

- Operation of the track-mounted feller-buncher inside the SMZ would be in a straight-in and straight-out manner to minimize disturbance within the 50 foot SMZ boundary with no equipment operation occurring closer than 15 feet from the ordinary high water mark of the stream.
- Operation would only occur during periods when soil disturbance can be minimized under conditions of frozen ground to a depth of four inches, minimal snow to a depth of eight inches, or periods when ground moisture is less than 20%.
- Erosion mitigation measures would include grass seeding and fine slash filter placed on disturbed areas to prevent run-off and sediment from reaching water.
- Felled or bunched trees would be placed outside of the 50 foot SMZ boundary for Skidding.
- Healthy sapling and intermediate size lodgepole pine, Douglas-fir, Engelmann spruce, subalpine fir, quaking aspen and other deciduous riparian vegetation would be retained and protected to the greatest extent possible.
- Within Class 1 streams larger trees (dead and live) growing or situated on the edge of the stream banks will be retained for bank stability, shade and LOD recruitment.
- No new excavated roads, skid trails or landings will occur within the SMZ's.

Site specific AP's would be issued under this EA Checklist for a period of two years (through January of 2018).

II. PROJECT DEVELOPMENT

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

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

MT DNRC: Forestry Assistance Bureau - Forest Practices Program Manager, Dillon Unit Manager, Bureau of Land Management, Dillon Field Office, MT FWP, Montana Tribal contacts Montana Wood Products Association, Beaverhead County Conservation District, Beaverhead County Commissioners, Big Hole Watershed Committee

Other contacts or research:

- Montana Natural Heritage Program/NRIS (Species of Concern and Wetlands mapping)
- Montana Fisheries Information System (M-Fish)

OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION, LIST OF PERMITS NEEDED:

Examples: cost-share agreement with U.S. Forest Service, 124 Permit, 3A Authorization, Air Quality Major Open Burning Permit.

N/A

3. ALTERNATIVE DEVELOPMENT:

Describe alternatives considered and, if applicable, provide brief description of how the alternatives were developed. List alternatives that were considered but eliminated from further analysis and why.

No-Action Alternative: Not approve Alternative Practice requests for commercial timber harvest within SMZ's governed by law. In instances when the trees are removed within an SMZ non-commercially, with or without machinery, the DNRC has no jurisdiction over operations and excessive disturbance or increased risks to the riparian zone, water quality, or safety may occur.

Action Alternative: Implementation of Alternative Practice requests for practices occurring on private and agency lands with mitigation measures outlined in this EA designed to protect and maintain the six primary functions of a SMZ while meeting the objective of the project.

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 effects to soils.

The Big Hole valley is generally located on a gently rolling terrain of glacial outwash and alluvial fan deposits derived from Ravalli quartzite. No unstable or significantly unique geology occurs in this fault –controlled intermountain basin. The Big Hole valley is likely the largest and deepest basin in Montana. Topsoil's are typically moderately deep (about 6 -8") sandy loams and silt loams over deep cobbly sandy loams. On forested and range sites, the small outwash hummocks have sandy loam surfaces (with more surface cobbles) and are droughty in nature. On forested sites with more flat and concave terrain, topsoils are deeper mixed sands and silt loams from volcanic ash (Crater Lake) that are slightly higher productivity sites. The woodland soils in the valley are very well drained and tend to be droughty with a long dry season of use. These well-drained gravelly soils on gentle slopes have low erosion risk, but can be erosive along waterways where disturbed. Primary soil concerns are potential rutting, and excessive surface disturbance with harvest operations and site preparation.

A low risk of direct and indirect effects to soil resources is expected provided mitigation measures are applied. No cumulative effects to soil resources are expected. Operating topographical slopes within the SMZ's in this area are generally very favorable running 0- <20%.

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 direct, indirect, and cumulative effects to water resources.

No Action Alternative:

No equipment operation would be allowed inside the 50 foot SMZ. Retention standards would be applied to all live and dead trees. Trees would be hand-felled and skidded by cable through the SMZ or left standing until the commercial operation is completed. Hand-felling operations may introduce low levels of sediment and soil disturbance with cable skidding within the SMZ. Minimal direct, indirect, and cumulative impacts to water quality and quantity would be expected unless a major disturbance occurs such as wildfire given the fuel loading within these beetle infested stands.

Action Alternative:

With the application of mitigation measures, the SMZ will remain an effective sediment filter through the protection of surface vegetation and soils. Ground disturbance within the SMZ would be minimal to none during winter harvest conditions. The equipment exclusion and harvest of dead trees within the first 15 feet of the SMZ is anticipated to have minimal impacts to the streams. Increases in sedimentation would be expected to be minimal and temporary due to operations only occurring on slopes less than 20% and additional application of mitigation measures. Mitigation measures include imposing seasonal operating restrictions that require frozen ground to a depth of four inches, snow depth of eight inches or ground moisture of 20% or less; and requiring grass seeding and installation of erosion control measures such as a slash-filter windrow on any disturbed area upon completion of operations. DNRC may monitor AP sites to verify effectiveness. Minimal direct, indirect, and cumulative impacts to water quality and quantity are expected due to operation restrictions and mitigation measures.

With Class 1 streams additional protection measure will be required to protect water quality and fish habitat through the retention of all stream bank stabilization trees and retaining healthy trees for canopy shade and wildlife cover. Shrubs and submerchantable trees that provide shade, filtering and cover would also be protected during harvest to the greatest extent possible. The potential future recruitment of large woody debris would be maintained through retention of live larger trees and down trees crossing the streams within the SMZ. Adverse impacts to the stream banks or channel are not expected to occur as a result of this operation. No cumulative adverse effects to water quality or quantity are anticipated from the proposed action.

6. AIR QUALITY:

What pollutants or particulate would be produced (i.e. particulate matter from road use or harvesting, slash pile burning, prescribed burning, etc)? Identify the Airshed and Impact Zone (if any) according to the Montana/Idaho Airshed Group. Identify direct, indirect, and cumulative effects to air quality.

State Hazard Reduction Agreements are issued for harvest practices on private land through the DNRC. Federal or State land managers cooperate and performed burning of hazard slash during the late fall and winter months in accordance with rules set by the Montana/Idaho Airshed Group 2006. The project area is located within Montana Airshed 7 which encompasses portions of Beaverhead and Madison Counties. Currently this Airshed does not contain any impact zones. No machine piling of slash or broadcast burning will be allowed within the SMZ's.

No long-term adverse impacts to air quality are anticipated with the projects associated with this assessment.

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 direct, indirect, and cumulative effects to vegetation.

Alternative A: No Action

Mountain pine beetle infestations have been occurring in the Big Hole Valley over the past 5 years. Active populations of beetle are causing significant mortality on a landscape level from the valley floor to the higher elevations(~8000 feet). With the absence of pro-active removal of the fuels with low-impact mechanized equipment, fuel loading will continue with the likely event of a fire disturbance at a large level. Lodgepole pine is the dominant seral species in most of the area with Subalpine fir/Grouse Whortleberry (Abla/Vasc) as the dominant habitat type. The valley lies along the drought limitations of the habitat type and consequently subalpine fir is sparsely represented. Douglas-fir is generally indicated as a climax species on the drier slopes with Douglas-fir/Pine Grass (Psme/Caru) as the habitat type. Regeneration is generally minimal affecting the filtering efficiency of the SMZ and understory vegetation is moderate with moderate coarse woody debris. With no action, the vegetative diversity and general health of the affected watersheds will continue to decline through mortality and disease. Private and agency commercial and social resources values will be greatly reduced.

Alternative B: Action:

The proposed treatment would encourage vegetative diversity in species and age class. Wildlife will benefit from the proposed treatment with enhanced food sources from early successional native species cover over time. Commercial timber resources will be managed and salvaged generating positive economic value to the region.

Vegetative communities would be affected to the extent that live lodgepole pine would be reduced to below minimum retention standards as outlined in Rule 5 of the *Montana Guide to the Streamside Management Zone Law and Rules* handbook. However, virtually all larger diameter lodgepole pine is currently targeted by beetle outbreaks causing significant mortality in the region. Other species of trees such as Douglas-fir, Engelmann spruce, quaking aspen and deciduous varieties would be retained to retention standards within the SMZ's where present and understory vegetation would be protected to the greatest extent possible. Removal of the dead trees would expedite natural regeneration and cumulative effects to vegetative communities would decrease as trees regenerate and replace those that are harvested.

8. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS:

Consider substantial habitat values and use of the area by wildlife, birds or fish. Identify direct, indirect, and cumulative effects to fish and wildlife.

Alternative A- No Action

A variety of big game, small mammals, raptors and songbirds currently use this area. Habitat conditions will likely continue to decline through the loss of viable and resilient vegetative

cover within the declining riparian zones. Dead lodgepole pine will eventually fall over and/or be removed in a non-commercial and controlled manner.

Alternative B - Action

The treatments planned will likely enhance vegetative cover and diversity over time by restoring these riparian corridors to a vegetative condition closer to what would have been present historically prior to fire suppression. Short-term impacts and disturbance is considered to be minimal. Minimal impacts are anticipated to the stream channel, water quality, or aquatic habitat as a result of the planned treatments.

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 direct, indirect, and cumulative effects to these species and their habitat.

Due to the size of the area impacted and the duration of harvest within the SMZ's direct, indirect or cumulative effects to endangered and sensitive species are expected to be minor. This analysis considered the potential impacts to the following species:

Grizzly bear: The project area lies outside of any grizzly bear recovery or occupied areas.

Canada Lynx: The project area contains marginal habitat due to high level of naturally induced fragmentation and lack of highly desirable habitat conditions for lynx.

Bald Eagle: Bald Eagles have been documented in the Big Hole Valley. Generally project areas within the upland tributaries where timber harvest is occurring is outside (greater than one mile) eagle nesting home range however individual Alternative Practice applications will evaluate distance from known nesting sites.

Black-backed woodpecker: This species has not been documented in the vicinity.

Black-tailed prairie dog: Grassland habitats suitable for use are generally not found within the SMZ's.

Flammulated owl: Preferred habitat and cover types are generally not found within the SMZ's covered by this analysis.

Grey Wolf: Wolf pack activity occurs throughout the Big Hole Valley. The Battlefield, Moyer and Miner Lakes packs reside in the vicinity and use portions of the areas considered for this project. Harvest operations have had minimal impact on wolf pack activity.

Harlequin duck: No high gradient streams suitable for use occur in the upland SMZ's.

Northern bog lemming: Sphagnum meadows or bogs preferred by lemmings may occur adjacent to SMZ's being considered for harvest. Specific Alternative Practice applications will consider impacts but minimal impacts are expected.

Mountain plover: Plovers are generally not found in the upland elevation SMZ's. No short grass prairie or prairie dog towns occur in the areas being analyzed.

Peregrine Falcon: Cliff features suitable for use by nesting peregrine falcons are generally not found within the upland SMZ's in this area being considered, therefore adverse impacts are not expected to occur.

Pileated woodpecker: The lodgepole pine cover types generally found within the area are poorly suited for use by these birds.

Greater sage-grouse: Greater sage grouse occur in the Big Hole Valley with active lek sites in the river and valley bottom habitat. Sage grouse may use the areas being considered for this project. Specific Alternative Practice applications will consider timing restrictions for activities if active lek's are adjacent to proposed activities. Duration of disturbance and activity within the SMZ's is anticipated to be short and have minimal effect on sage grouse.

Townsend's big-eared bat: Habitat within the proposed projects is generally void of mines and caves preferred by bats, thus adverse impacts are not anticipated.

Montana Arctic Grayling: Many of the upland watershed tributaries in this are support populations of Arctic Grayling. Specific mitigation measures designed to protect the six primary functions to maintain clean cold water habitat of the SMZ will be applied through the Alternative Practices approved.

Due to the size, season, duration and harvest method of the proposed projects covered by this analysis, direct, indirect or cumulative effects to endangered and sensitive species are expected to be minimal.

10. HISTORICAL AND ARCHAEOLOGICAL SITES:

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

No archaeological investigative work was conducted in response to proposed activates that will occur on private lands. Government agencies will perform their own analysis.

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 direct, indirect, and cumulative effects to aesthetics.

Minimal adverse impacts to the viewshed is expected from the proposed harvest within the upland SMZ's. Noise levels from equipment operation are temporary and minimal in this rural ranch landscape.

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 direct, indirect, and cumulative effects to environmental resources.

None anticipated.

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.

Several timber harvest projects have occurred on State (DNRC), State DOT (hazard tree removal), BLM, USFS, and private lands in the Big Hole Valley addressing forest health and salvage of bug killed and dying timber that has occurred. Numerous environmental

documents and assessments with public scoping were completed for all these projects on public lands with action alternatives employed. Mitigation measures to insure protection of the six primary functions of the SMZ's will be applied to protect water quality and minimize short-term cumulative impacts to watersheds.

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.

Health and safety risks to humans and recreational structures (homes, outbuildings, and utilities) will be reduced as a result of the planned treatment to reduce forest fuels and tree stocking in mature and overstocked forest stands. Adverse risks posed by this project are expected to be minimal. Log truck traffic is historically common in the valley and not considered to be an issue on the county and State roads accessing the project areas. Salvage timber harvest activities within the SMZ's is considered to be pro-active vegetative management to reduce associated risks to humans, water quality and air associated with wildfire.

15. INDUSTRIAL, COMMERCIAL AND AGRICULTURE ACTIVITIES AND PRODUCTION:

Identify how the project would add to or alter these activities.

Timber harvest will be conducted by professional forest industry contractors providing employment and commerce. Trees will be utilized for commercial sawlogs, an agricultural commodity used extensively in this region by the public as a renewable resource. The proposed project would contribute to industrial production in the region.

QUANTITY AND DISTRIBUTION OF EMPLOYMENT:

Estimate the number of jobs the project would create, move or eliminate. Identify direct, indirect, and cumulative effects to the employment market.

The project areas analyzed (SMZ portions) will have minimal impacts to quantity and distribution of employment. Timber harvest activities will help to maintain the current employment in the industry with much needed raw material supply to the value-added processing plants.

17. LOCAL AND STATE TAX BASE AND TAX REVENUES:

Estimate tax revenue the project would create or eliminate. Identify direct, indirect, and cumulative effects to taxes and revenue.

Minimal effect is anticipated.

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 direct, indirect, and cumulative effects of this and other projects on government services

N/A.

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.

N/A

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 direct, indirect, and cumulative effects to recreational and wilderness activities.

N/A

21. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING:

Estimate population changes and additional housing the project would require. Identify direct, indirect, and cumulative effects to population and housing.

N/A.

22. SOCIAL STRUCTURES AND MORES:

Identify potential disruption of native or traditional lifestyles or communities.

N/A.

23. CULTURAL UNIQUENESS AND DIVERSITY:

How would the action affect any unique quality of the area?

N/A

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 direct, indirect, and cumulative economic and social effects likely to occur as a result of the proposed action.

N/A.

EA Checklist Prepared By:	Name: Mike Atwood Title: Dillon Unit Forester	Date: 01/22/ 2016
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V. FINDING

25. ALTERNATIVE SELECTED:

Action Alternative: Following a review of the SMZ Alternative Practice analysis for the Big Hole Valley and corresponding Department policies and rules, the Action Alternative has been selected to implement Alternative Practices as proposed subject to inclusion of mitigation measures. This finding meets the intent of the project objectives outlined in Section I – Type and Purpose of Action. This includes but is not limited to the desire to salvage harvest beetle infested timber stands and individual trees to improve the overall forest health and age-class diversity of the watersheds in the Big Hole.

26. SIGNIFICANCE OF POTENTIAL IMPACTS:

I find the Action Alternative will not have significant adverse impacts for the following reasons:

- The Action Alternative is in compliance with the existing laws, rules, policies, and standards applicable to this type of proposed action.
- Appropriate mitigations have been proposed to minimize potential impacts to resources in the area as discussed above.

27. NEED FOR FURTHER ENVIRONMENTAL ANALYSIS:

EIS

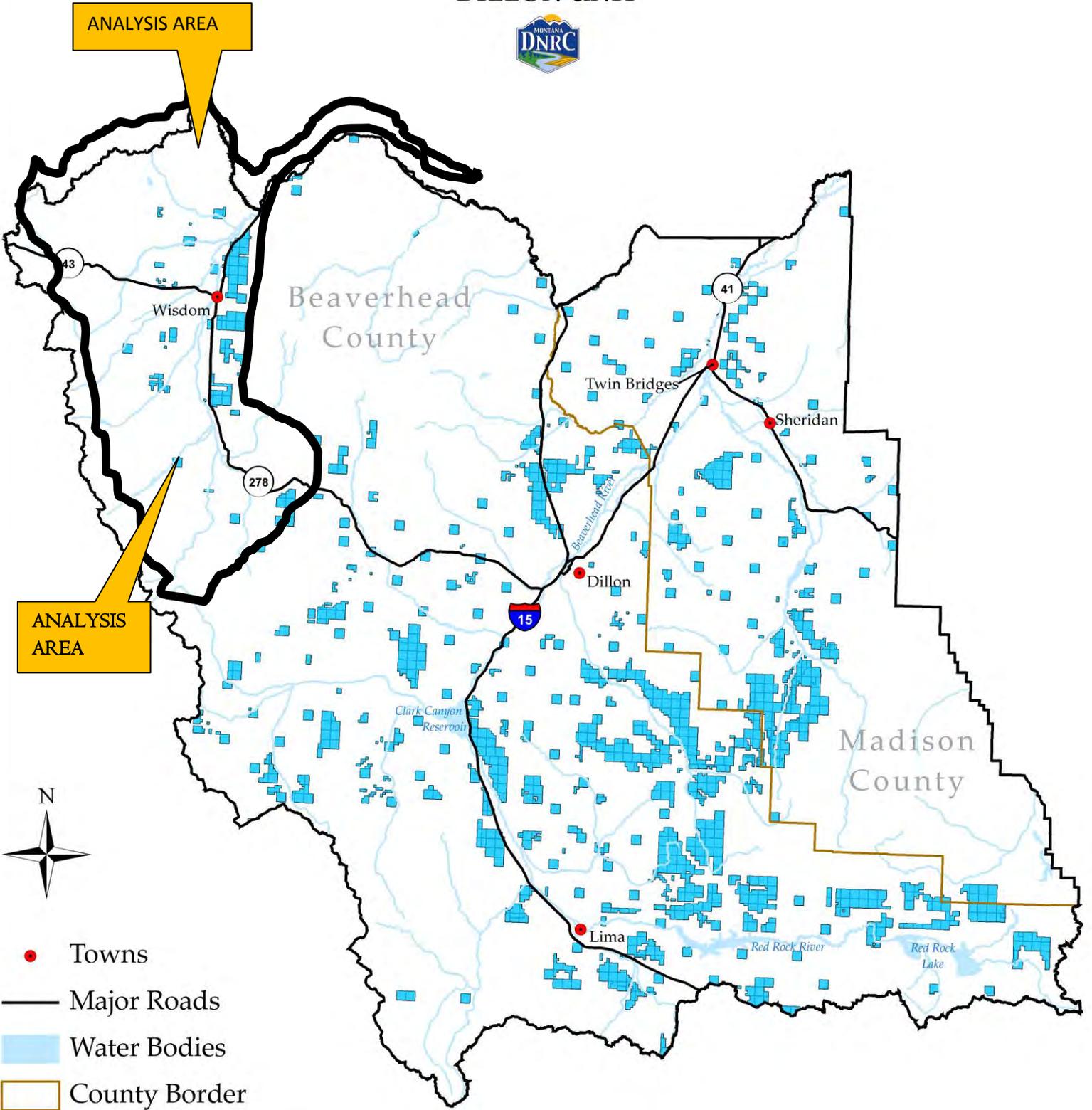
More Detailed EA

No Further Analysis

EA Checklist Approved By:	Name: Timothy Egan Title: Dillon Unit Manager
Signature: /s/ Timothy Egan	Date: 01/26//2016

BIG HOLE VALLEY ALTERNATIVE PRACTICE MAP

DILLON UNIT



- Towns
- Major Roads
- Water Bodies
- County Border
- Rivers
- State Trust Land

