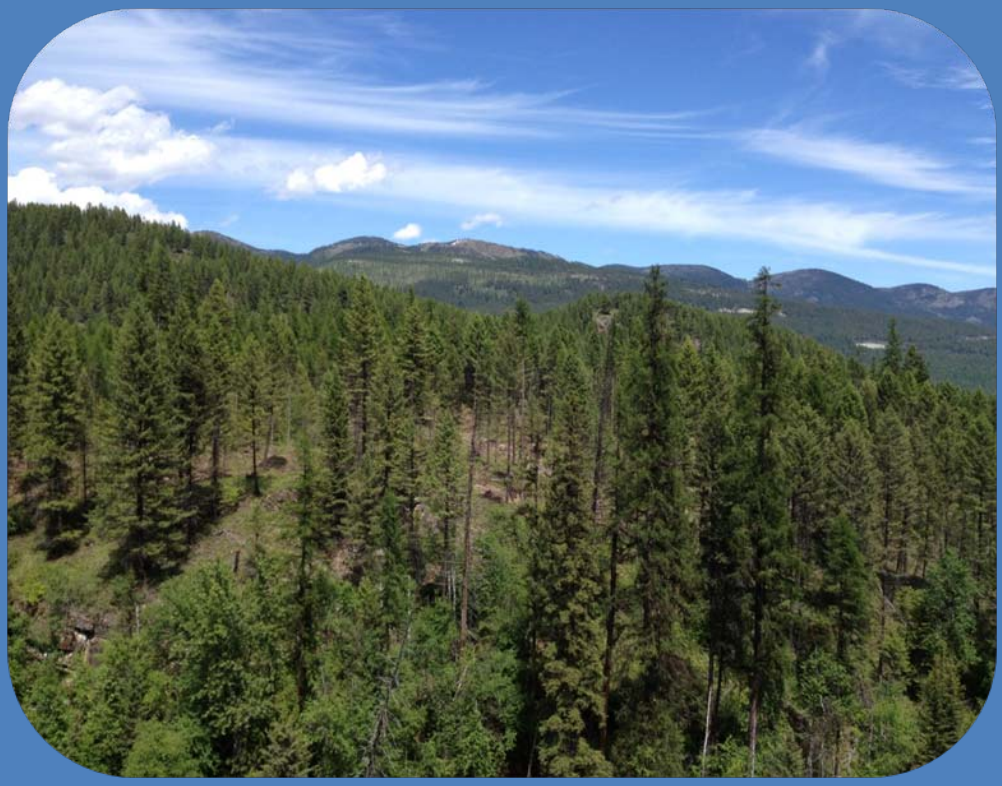
Beaver Land Banking Project

Checklist Environmental Assessment
June 2012



Montana Department of Natural Resources & Conservation
Northwest Land Office – Stillwater Unit

CHECKLIST ENVIRONMENTAL ASSESSMENT
June 28, 2012

Project Name:	Beaver Land Banking Project
Proposed Implementation Date:	December 2012
Proponent:	Adjacent landowner
Location:	Whitefish, Montana
County:	Flathead

I. TYPE AND PURPOSE OF ACTION

The Montana Department of Natural Resources and Conservation (DNRC) is considering a request by an adjacent landowner to acquire approximately 580 acres of State trust land. The proposed sale of State land would be completed as part of the Land Banking program (MCA 77-2-361 through 77-2-367 passed by the 2003 State Legislature). With the advent of land banking, it is now possible for the DNRC to sell land to the public and deposit the proceeds in a Land Banking Trust Fund. The combined funds from multiple sales can then be used to purchase parcels which produce a higher level of income than the lands sold. This results in a greater income to the trust beneficiaries (U of M, MSU, Common Schools, etc.).

The legal description for the parcel involved is the E1/2;NW1/4;E1/2 SW1/4;N1/2 NW1/4 SW1/4; Section 16, T31N, R22W. This property is located near the west shore of Whitefish Lake (Figure 1). The trust beneficiaries of this parcel of land are Common Schools (kindergarten through grade 12).

Under the land banking process, the land must be sold to the highest bidder who consummates the terms of the sale. All bidders would be subject to the same terms. Revenue from the sale would be deposited in a special account, with monies from other sales around the State, to purchase replacement lands meeting acquisition criteria related to legal access, productivity, potential income and proximity to existing State ownership which would then be held in trust for the same beneficiaries.

II. PROJECT DEVELOPMENT

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

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

The land banking sale nomination for the Beaver land banking project was submitted by the DNRC on behalf of an adjacent landowner on February 12, 2012. A scoping letter was mailed to 47 interested parties on April 6, 2012 and advertisements describing the proposal were run in the Whitefish Pilot and the Daily Interlake. Several community interest meetings on this and related proposals were held by Whitefish Legacy Partners, a non-profit organization supporting the goals of the Whitefish Neighborhood Plan. A public comment period was open from April 6 through May 5, 2012. Five comments were received. The comments and the DNRC responses are provided as Appendix A. Comments received by the public and from internal agency scoping revealed two key issues related to the proposed Beaver land banking project:

1. Recreation: There is concern that public access for recreation would be reduced if the parcel becomes private ownership. Also, there is concern that the type of recreational access allowed would change as a result of the sale of the property.

2. It is unclear that disposing of this property at this time is a sound economic decision in regard to Trust Land Management. Concern that the real estate market is depressed and the timing for an appraisal and subsequent sale is adverse to a seller. Concern that the value of the parcel has appreciated substantially over time and given its location it is likely to see higher than average land appreciation in the future. If the property is sold, will the DNRC be able to invest the proceeds so as to exceed appreciation potential? Given the location of the property, the future potential lost revenue generation is substantial.

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

The DNRC has full jurisdiction over the proposed land banking project. DNRC has consulted with the City of Whitefish to ensure that the proposal meets the objectives of the Whitefish Neighborhood Plan (WNP) (Section 19).

3. ALTERNATIVES CONSIDERED:

No Action Alternative A:
Under No Action Alternative A, the DNRC would not sell the Beaver land banking parcel. It would remain as timber resource land managed by the DNRC for the beneficiaries of the State trust. Motorized access would continue to be limited to the DNRC and any future authorized lessees. The public would continue to be allowed non-motorized access and dispersed recreation.

Proposed Action Alternative B:
Under Proposed Action Alternative B, the DNRC would sell the Beaver land banking parcel to the highest bidder and the funds from the sale would be deposited in an interest-bearing account until other appropriate lands are purchased that would return higher value to the State. The successful bidder would purchase the property with the following terms imposed:

1. The entire 580 acre parcel would be subject to a deed restriction that would limit any residential or commercial development on the parcel to no more than two homesites.

2. The parcel would include a permanent, public recreational trail easement, included as part of the "Whitefish Trail", constructed and maintained by the property owner.

The Beaver land banking parcel would become privately owned, and public access (outside of the public recreation trail easement) would be restricted. Timber and other resource management of the parcel would be at the discretion of the private landowner, but would still be subject to applicable State and Federal laws.

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 Environment:

The surficial geology of the Beaver land banking parcel consists of carbonate rocks, meta-argillite and quartzite of the Belt Supergroup (USGS 2012). There are no unusual geologic features associated with the Beaver land banking parcel.

The Beaver parcel is located on Natural Resources Conservation Service (NRCS) landtype 23-8 (Andeptic Cryoboralfs-Andic Cryochrepts complex, hilly), which consists of glaciated mountainsides with 20 to 40 percent slopes. The soils associated with this landtype are derived from glacial till, and are typically well-drained to very well-drained. These soils support a variety of forest vegetation types. The *K value* of a soil indicates how susceptible the soil is to sheet and rill erosion by water. The K value of soil in this landtype is 0.32, which indicates that the soils on the Beaver land banking parcel are moderately susceptible to water erosion (NRCS 2012). There are no fragile, compactable or unstable soils on the Beaver land banking parcel.

Effects:

No Action Alternative A: There would be no effect to geology or soils as a result of Alternative A. The Beaver land banking parcel would continue to be managed for timber, but timber harvesting would be conducted under applicable DNRC Best Management Practices (BMPs) to be protective of soils.

Proposed Action Alternative B: There would be no effect to geology as a result of Alternative B. An unpaved trail would be constructed on the Beaver land banking parcel which would result in an increased risk of soil erosion on the parcel. Erosion potential would be highest during construction and before the surface of the trail was compacted from use. The trail design and location has not yet been completed, so the exact acreage and location of effect to soils is not known at this time. However, similar to the other routes that have been constructed as part of the Whitefish Trail, it would be constructed and maintained according to the International Mountain Biking Association's (IMBA) standards and principles found in Trail Solutions; IMBA's Guide to Building Sweet Singletrack and Managing Mountain Biking (IMBA 2004). While bared soil and increased use typically results in additional erosion and wear, proper design and maintenance coupled with the well-drained soil would reduce the potential erosion related to a trail on the Beaver land banking parcel. A cumulative increase in soil erosion in the Beaver/Skyles area due to increasing trail construction, including on the Beaver land banking parcel, would occur.

A maximum of two homesites could be constructed on the Beaver land banking parcel under Alternative B. These homesites, if developed, would be associated with clearing for construction of structures and potentially roads/driveways from existing roads. The design and development of these two homesites is out of the scope of this analysis.

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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.

Existing Environment:

One unnamed stream is located on the north half of the Beaver land banking parcel (Figure 1). This small stream flows in a northwest-to-southeast direction toward Whitefish Lake; however, the surface flow percolates into the ground near the east boundary of the Beaver land banking parcel and therefore likely does not reach Whitefish Lake. Subsurface flow of the stream was also observed in two other locations, and fish were not observed (DNRC 2009). A road crosses the stream before it exits the north boundary of the property. There is no bridge at this location, which effectively limits motorized travel across the stream for most vehicles (McMahon pers. comm. 2012).

Dollar Lake is located on adjacent land to the southwest of the Beaver land banking parcel and is approximately 500 feet from the parcel at its closest point.

Effects:

No Action Alternative A: There would be no effect to water quality, quantity or distribution under Alternative A. The Beaver land banking parcel would continue to be managed for timber, but timber harvesting would be conducted under applicable DNRC BMPs to be protective of water quality.

Proposed Action Alternative B: A trail would be constructed on the parcel that could generate sediment runoff from soil erosion. The exact location and design of the trail is unknown at this time.

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.

Existing Environment:

The Beaver land banking parcel is not located in a Class I airshed (those airsheds that can accommodate only the smallest amount of air quality degradation - National Parks, wilderness areas and reservations). The town of Whitefish is a designated nonattainment area for particulate matter of 10 microns (PM-10) or less (NRIS 1998). The Beaver land banking parcel is not located within the boundaries of the Whitefish non-attainment area.

Effects:

No Action Alternative A: Slash burning would occur related to final site cleanup of the 2010-2011 timber sale on the Beaver land banking parcel. The affect to air quality would be minor and temporary. There would not be a cumulative effect to air quality as a result of Alternative A.

Proposed Action Alternative B: Slash burning would likely still occur on the parcel as under Alternative A, but the timing of this cleanup, as well as who performs it (DNRC or private landowner), is unknown at this time. When slash burning occurs it would be performed under Flathead County permit requirements and as under Alternative A the affect to air quality would be temporary.

Direct, indirect, and cumulative impacts related to the initial trail construction are expected to be minor and temporary, with minor particulate being released during corresponding periods of soil disturbance. Once the trail on the Beaver land banking parcel is completed, traffic on the Beaver Lake Road may increase intermittently and seasonally over time as public awareness of the expanded Whitefish Trail system increases. This could increase road dust which would impact air quality. When combined with recent trail expansion and future expansion of recreation opportunities in the area, such as a proposed recreation easement in the Beaver/Skyles area (Section 13), this would be a cumulative effect to air quality due to increasing traffic on roads accessing recreation in the area.

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.

Existing Environment:

Vegetation in this area is dominated by typical western Montana forest types, common for the parcel's elevational range of 3,200 to 3,800 feet. The aspects are mostly north, northeast and east facing, with some southwest and west facing slopes. The primary tree species are Douglas fir (*Pseudotsuga menziesii*), lodgepole pine (*Pinus contorta*), and grand fir (*Abies grandis*). Other tree species include western larch (*Larix occidentalis*), western hemlock (*Tsuga heterophylla*), Engelmann spruce (*Picea engelmannii*), western white pine (*Pinus monticola*) and western red cedar (*Thuja plicata*). These trees have been affected by insects and disease, including larch mistletoe (*Arceuthobium laricis*), Douglas fir bark beetle (*Dendroctonous pseudotsugae*), fir engraver (*Scolytus ventralis*), and armillaria root disease (*Armellaria ostoyae*) (DNRC 2009).

The understory is dominated by low-growing shrubs and herbaceous species, including snowberry (*Symphoricarpos albus*), dwarf huckleberry (*Vaccinium cespitosum*), kinnikinnick (*Arctostaphylos uva-ursi*), pinegrass (*Calamagrostis rubescens),* Oregon grape (*Mahonia repens*) and buffaloberry (*Shepherdia canadensis*). Timber stand ages vary from 30 to 200 years. Five timber stands totaling 234 acres (40 percent of the parcel) are considered old growth. Special status plant species are discussed in Section 9.

The DNRC estimates that the current standing volume of timber on the 580-acre parcel averages 8 to 10 thousand board feet (MBF) per acre for a total of approximately 5,602 MBF. The value of timber is discussed in the Economics Analysis Report (Appendix C).

Noxious weeds have been located on the Beaver land banking parcel and along access routes to the parcel, including spotted knapweed (*Centraurea maculosa*), St. John's-wort (*Hypericum perforatum*), oxeye daisy (*Chrysanthemum leucanthemem*), common tansy *(Tanacetum vulgare),* hound's-tongue *(Cynoglossum officinale),* orange hawkweed (*Hieracium aurantiacum*), and tansy ragwort (*Senecio jacobea*). Their prevalence on the Beaver land banking parcel is low.

Effects:

No Action Alternative A: There would be no effects to vegetation cover, quality and quantity. The parcel would continue to be managed as timber resource land by the DNRC.

Proposed Action Alternative B: Under Alternative B, activities such as pruning trees, removing downfall and hazardous trees, and clearing the trail tread of ground cover and other small areas adjacent to the trail that would be used for signs and benches would directly affect vegetation in these areas. The effect to vegetation would occur on a narrow, confined area and the overall vegetation in the general area would not be affected. Old growth stands would not be affected by trail construction. Depending on the location of homesite development, old growth stands may be affected; however, it is unknown at this time whether homesite development would occur within old growth. The exposed areas would have a greater risk of weed infestation due to the presence of disturbed ground and trail users that may spread weeds. At this time, the design of the trail is unknown, so the acreage of vegetation is unknown. However, due to the nature of the effect and the limited extent it would not affect forest productivity on the parcel.

When compared to the removal of vegetation related to the Beaver/Skyles Timber Sale (Section 13) on the Beaver land banking parcel, Alternative B would result in a cumulative effect to vegetation on the parcel. However, the Beaver/Swift/Skyles Timber Sale Project was designed by DNRC to have a long-term positive effect on forest growth, vigor, and desired species mix. Additional areas of exposed soil would be created by constructing a trail on the Beaver land banking parcel and would cumulatively increase the risk of the spread and establishment of noxious weeds.

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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.

Existing Environment:
Of the 108 mammal species found in Montana, 74 are suspected or known to occur in Flathead County (Foresman 2001). Six amphibian and 7 reptile species have also been documented in Flathead County (Maxell et al. 2003) and at least 65 species of birds have been documented in the vicinity in the last 10 years (Lenard et al. 2003). An active osprey nest was observed on the north end of the Beaver land banking parcel. The Beaver land banking parcel is located within white-tailed deer and moose winter range. There is only one intermittent stream on the parcel, which is unlikely to support fish. Special status wildlife species are discussed in Section 9.

The Beaver land banking parcel currently receives only light recreational use, including hunting (Section 20). Also, the road present on the parcel has restricted motorized access. Therefore wildlife on the parcel generally experiences low disturbance by humans. Wildlife habitat and movement on the Beaver land banking parcel has been changed by recent timber harvest on the parcel. Decreased security has resulted from more open stands on the harvest units, and movement in harvested areas will be hampered until post-harvest cleanup is completed.

Effects:

No Action Alternative A: Wildlife could be temporarily disturbed during post-harvest cleanup activities. There is ample area outside the harvest areas both on the Beaver land banking parcel and in the surrounding area to provide alternative habitat during this temporary disturbance. There would be no other effects to terrestrial, avian and aquatic life and habitats under Alternative A.

Proposed Action Alternative B: The presence of two homesites on the Beaver land banking parcel may initially affect wildlife species, especially during construction. However, the relatively large size of the parcel (580 acres)

and the limited use of the parcel on the whole by humans would allow wildlife to become habituated to the presence of the two homesites. However, the trail that would be constructed on the parcel would represent a longer-term effect to wildlife in the vicinity of the trail. The recent opening of the forest after timber harvest allows sound to travel further, and the use of the trail by humans (and dogs) would disturb wildlife in the area. Wildlife have adequate room on the parcel to move further away from the trail, however, and adequate undeveloped land exists in the Beaver/Skyles area.

The establishment of the trail and homesites would also increase the opportunity for the introduction of attractants (such as litter) and human-wildlife conflicts. In the Beaver/Skyles area, human conflicts with black bears (*Ursus* americanus) and mountain lions (*Puma concolor*) have occurred in the past. These species likely use the Beaver land banking parcel during portions of the year and occasional use by grizzly bears has been observed (Forristal pers. comm. 2012) (Section 9).

Disturbance associated with post-harvest cleanup would be the same as that under Alternative A.

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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.

Existing Environment:

Wetlands

There are 3.00 acres of palustrine, emergent (PEMA [Cowardin 1979]) wetlands and 0.98 acres of palustrine, scrub-shrub (PSSA [Cowardin 1979]) wetlands on the Beaver land banking parcel (MNHP 2010) (Appendix B). Both of these wetland types are commonly temporarily flooded. Most of these mapped wetlands occur in a seasonally-wet meadow on the northeast corner of the parcel. One plant species of concern is located in these wetlands: crested shieldfern (*Dryopteris cristata*) (further information below).

Special Status Species

One plant species of concern is present in the wetlands on the northeastern corner of the parcel (Appendix B). Crested shieldfern (*Dryopteris cristata*) is globally common and widespread and not vulnerable in most of its range (ranking G5), and at the state level is potentially at risk because of limited or declining numbers, range, or habitat (S3) (MNHP 2012).

Four threatened, endangered, or sensitive animal species have been identified as occurring or having the potential to be present on the Beaver land banking parcel by the Montana Natural Heritage Program (MNHP) including bald eagle (*Haliaeetus leucocephalus)*, pileated woodpecker (*Dryocopus pileatus*), fisher (*Martes pennanti)*, and wolverine (*Gulo gulo*) ((MNHP 2012). Additionally, although not identified by MNHP (2012), grizzly bear (*Ursus arctos*) has been known to transiently occur in the vicinity of and on the Beaver land banking parcel (Forristal pers. comm. 2012, Manning pers. comm. 2012). Also, suitable Canada lynx (*Lynx canadensis*) habitat exists on the parcel and lynx observations have been made approximately one mile from the parcel (Forristal pers. comm. 2012).These species are also discussed below.

Bald Eagle (Sensitive)
There are no known bald eagle nests on the Beaver land banking parcel. The closest nest is the Whitefish Lake nest, located approximately 2 miles to the north-northwest of the parcel. Approximately half of the Beaver land banking parcel is within the home territory of eagles occupying this nest (Forristal pers. comm. 2012).

Pileated Woodpecker (Sensitive)
The pileated woodpecker prefers mature western larch/Douglas fir and mixed conifer forests, which is present on the Beaver land banking parcel. Therefore, pileated woodpeckers may be present on the parcel (Forristal pers. comm. 2012).

Fisher (Sensitive)
Fisher habitat includes riparian areas and dense, mature to old growth forest at an elevation of less than 6,000 feet. This habitat is present on the Beaver land banking parcel. Therefore, fisher may be present on the parcel (Forristal pers. comm. 2012).

Wolverine (Sensitive)
Wolverines are limited to alpine tundra and boreal and mountain coniferous forests in western Montana, especially large and remote wilderness areas. Riparian areas may be important winter habitat (FWP 2012). Based on the level of human activity in the area and the level of disturbance on the Beaver land banking parcel (timber harvest), it is unlikely, but possible, that wolverine are present on the parcel (Forristal pers. comm. 2012).

Grizzly bear (Threatened)
The Beaver land banking parcel is outside of the North Continental Divide Ecosystem Recovery Area but it is in non-recovery occupied habitat (Wittinger 2002). However, grizzly bear sightings have occurred in the vicinity of and on the Beaver land banking parcel (Forristal pers. comm. 2012, Manning pers. comm. 2012); therefore, use of the parcel by transient grizzly bears is likely to occur.

Canada lynx (Threatened)
Lynx habitat west of the Continental Divide consists of subalpine forests between approximately 4,000 feet and 7,000 feet in elevation. Lynx prefer pure lodgepole pine stands or mixed stands of subalpine fir (*Abies lasiocarpa*), lodgepole pine, Douglas fir, grand fir, western larch and hardwoods. This habitat is present on the Beaver land banking parcel, and while unlikely, lynx may be present (Forristal pers. comm. 2012).

Effects:

No Action Alternative A: There would be no effect on unique habitats or special status species from No Action Alternative A. DNRC would continue to manage the parcel for timber production and treat noxious weeds as necessary to meet standards established by the State Forest Land Management Plan (DNRC 1996). Cleanup activities related to the recent timber harvest or the future harvesting of timber may cause pileated woodpeckers or fisher to relocate into adjacent habitat areas, but adequate habitat exists both on the parcel and in the surrounding area so it would not have an overall adverse effect on these species. Crested sheildfern would likely not be affected by DNRC management because it is associated with wetlands and would be avoided by a 50 foot "no equipment buffer" (DNRC 1996).

Proposed Action Alternative B:

Crested shieldfern
Crested shieldfern is associated with the wetlands on the northeast corner of the Beaver land banking parcel. Wetlands are under the protection of the Clean Water Act of 1972 (33 U.S.C. §1251 et seq.) and therefore activities that may alter, dredge, fill etc. a wetland must be reviewed and permitted by the U.S. Army Corps of Engineers. Design and construction activities would avoid wetland areas. Therefore, there would be no effects on the wetlands or crested shieldfern on the Beaver land banking parcel.

Bald Eagle
Due to the distance from the nearest nest, it is unlikely that the construction and presence of two homesites and a trail on the Beaver land banking parcel would adversely affect bald eagle.

Pileated Woodpecker
The pileated woodpecker may be disturbed by the presence of homesites and trail users. However, there is ample habitat on the parcel and in the surrounding area to provide alternate habitat. If snags or hazard trees are removed as part of trail construction it would remove suitable pileated woodpecker habitat on the Beaver land banking parcel. Combined with the recent timber harvest on the parcel, this represents a cumulative effect on pileated woodpecker habitat on the Beaver land banking parcel. However, adequate similar habitat exists on the Beaver land banking parcel and on adjacent DNRC land.

Fisher
It is unlikely that fisher would be affected by Alternative B. A negligible amount of suitable fisher habitat would be removed for trail construction. Fishers may be disturbed by the human presence on the trail or at homesites, but ample alternative habitat is present on the parcel and on adjacent DNRC land.

Grizzly bear
An increased presence of humans on the Beaver land banking parcel represents an increased chance for attractants (litter) and human-grizzly bear interactions. Also, displacement of transient grizzly bears is more likely around a highly used trail system (Forristal pers. comm. 2012). Use of the parcel by grizzly bears is transient in nature at most, but those individuals that do enter the Beaver land banking parcel would have an increased chance to interact with humans or be disturbed by trail users (and dogs). Therefore, the potential for effects on grizzly bear are adverse and minor.

Canada lynx
The lynx habitat on the Beaver land banking parcel is poor and is unlikely to support individual lynx (DNRC 2009). Therefore, there would not be any effect on lynx under Alternative B.

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

Existing Environment:
An inventory of the Beaver parcel has not been conducted, so the presence/absence of cultural resources is unknown (Rennie pers. comm. 2012).

Effects:
If the Proposed Action Alternative B were selected, a Class III cultural resource inventory of the parcel would be conducted prior to the parcel leaving State ownership (Rennie pers. comm. 2012).

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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.

Existing Environment:

The primary observation locations for the Beaver land banking project include the east and west shore of Whitefish Lake and the west aspect of Whitefish Mountain Resort. The parcel is dominated by broken topography and geology due to glacial deposits. Portions of the parcel were logged in 2010-2012. On areas of the parcel recently harvested for timber the visual qualities of the parcel are of lower quality when viewed from within the harvest unit due to logging residue and the visual effect of recent harvest activity prior to final site cleanup. From the primary observation points, the timber harvest resulted in a negligible change to the visual resource.

Effects:

No Action Alternative A: Final site cleanup related to the recent timber harvest would be performed by the DNRC. Until regeneration occurred the visual quality of harvested portions would be affected. There would be no other effects to aesthetics under Alternative A.

Proposed Action Alternative B: Final site cleanup related to the recent timber harvest would occur, but it is unknown if it would be performed by the DNRC or a private landowner. Until regeneration occurred the visual quality of harvested portions would be affected.

The construction of a trail on the Beaver land banking parcel would increase the access to positive aesthetic opportunities and scenic locations. It is unknown where the two homesites would be constructed, and if they would be visible to primary observation locations. There would not be any aesthetic effect to primary observation locations under Alternative B.

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.

The proposed land banking project would remove 580 acres of land from the State trust. This represents a negligible decrease in the approximately 5.2 million acres statewide and approximately 120,000 acres of State trust land in the DNRC Stillwater Unit. The land banking program uses proceeds from the sale of trust land to purchase other land that will become part of the trust land program. Therefore, this loss to trust land acreage would be temporary until a new parcel(s) is purchased with the proceeds from the sale of the Beaver land banking parcel.

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 plans and projects are associated with the Beaver land banking project, including:

Whitefish Area Trust Lands Neighborhood Plan (WNP) (WTLAC et al 2004)

The Beaver land banking parcel is part of the Beaver Lakes/Skyles Subarea of the WNP. This subarea has specific concepts and implementation strategies that apply to the proposed Beaver land banking project, namely the goal of pursuing conservation-buyer opportunities within the subunit. It would also provide an opportunity to pursue new trail opportunities, which is an implementation strategy for the Beaver Lakes/Skyles Subunit.

Trail Runs Through It Environmental Assessment (DNRC 2007)

The Trail Runs Through It project was renamed the Whitefish Trail in 2010. The Master Plan for the Trail Runs Through It project, developed in 2006, details a "recreational trail network that includes a continuous corridor encircling the greater Whitefish area. This network will enhance access to public lands and other trail systems while respecting traditional use and promoting public interest in forest health. Primary goals of the trail network will be to provide opportunities for relaxation and outdoor recreation close to town, promote open space, increase revenues for the School Trust Lands, and support the local economy" (Applied Communications 2006).

The Beaver land banking project would include a permanent, public recreational trail easement that would add another link to the Whitefish Trail. The design of the trail is conceptual at this time, but the trail would be designed in conjunction with the DNRC and community partners. This portion of the Whitefish trail would be constructed and maintained by the new property owner.

Beaver/Swift/Skyles Timber Sale Project Environmental Assessment (DNRC 2009).

This timber sale proposal included timber harvest on the Beaver land banking parcel. This timber harvest was conducted in 2010-2012. Final site cleanup (site preparation, piling and slash burning) has not yet been completed.

Whitefish Trail - Phase II, Beaver Lake Environmental Assessment (DNRC 2011)

This Environmental Assessment analyzed a proposal to grant authorization for construction and operation of Phase II of the Whitefish Trail. Granting the proposed authorization would require an amendment to the existing Land Use License. The project area is located on State trust lands in the Beaver Lake complex, more specifically described as Sections 8, 17, 18, 19, 20, T31N, R22W.

Proposed Whitefish Trail Expansion on State Trust Lands in the Swift Creek Area Scoping Letter (DNRC 2012)

The City of Whitefish as the licensee for the Whitefish Trail is proposing to expand the trail system through the Swift Creek area to carry out the goals of the Trail Runs Through It Master Plan. The trail and amenities would take place in portions of Sections 29, 31, and 32 of T32N R22W. The project would consist of constructing approximately 3 miles of new trail which includes trail construction on approximately 1 mile of existing roadbed. A main trailhead would be built at an existing gravel pit with an option of another smaller trailhead located further north. The main trailhead could provide access to additional trail loops in the future as additional land use planning and trail expansion proposals take place. The trail would be built to a standard similar to the current, existing trails located near Lion Mountain, Skyles Lake and Beaver Lake. Amenities would include both directional and interpretive signing as well as a trailhead that would accommodate parking for vehicles and a few horse trailers.

Public Recreation and Conservation Easement, application submitted by the City of Whitefish on May 9, 2012.

This application is intended to initiate the establishment of a permanent Public Recreation and Conservation Easement (Easement) on state trust lands in the Beaver Lakes/Skyles sub-area as proposed under the WNP. The project is conceptual in nature at this time and has not yet been subject to public review (i.e. no scoping has been completed).

Cumulative effects related to the above plans and projects include changes to developed recreation opportunities in the area. The proposed Beaver land banking project would cumulatively add to trail recreation (biking, hiking) by adding another link to the Whitefish Trail system.

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.

There would not be any effect to human health and safety under the No Action or the Proposed Action alternatives.

15. INDUSTRIAL, COMMERCIAL AND AGRICULTURE ACTIVITIES AND PRODUCTION:

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

The Beaver land banking parcel has been managed for long-term timber production by the DNRC. The last commercial harvest was in 2010-2012. The sale of the property would result in a change from primarily timber management to residential land with a recreational trail corridor. Future land management by the private landowner is unknown at this time.

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.

The Beaver land banking project would not directly or indirectly change employment in the area.

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.

A comprehensive analysis of the economic factors related to the Beaver land banking project is provided in Appendix C - Economic Analysis Report.

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

The Beaver land banking project would not have any effect on the demand for government services.

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.

The Beaver land banking parcel is unzoned. Several management plans are associated with the Beaver land banking parcel, including:

Whitefish Area Trust Lands Neighborhood Plan (WNP) (WTLAC et al 2004)
(see Section 13, above)

Real Estate Management Plan (REMP) (DNRC 2005)

The REMP is the guiding management philosophy of the DNRC Real Estate Management Bureau and embodies three general goals: (1) sharing in expected community growth; (2) planning proactively; and (3) increasing revenue for trust beneficiaries.

State Forest Land Management Plan (SFLMP) (DNRC 1996)

Because the Beaver land banking parcel is forested, the impacts to the Forest Management program of this land (including timber production) will be considered.

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.

Existing Environment:

Access
The Beaver Lake parcel is accessed via existing roads managed by the DNRC. The DNRC road system in this area begins at US Highway 93 and the Beaver Lake County road from the west, the DNRC's North Murray Road, Woods Saddle Road (from the north), and Spur 16 (from the west). There is no legal access from north because the Beaver land banking parcel borders private land on the north. Spur 16 crosses an unnamed stream in the north half of the parcel. There is no bridge, so access across the stream is currently restricted by this feature for most motorized vehicles. There is no vehicle access through the parcel to Whitefish Lake. Whitefish lake is separated from the parcel by a railroad and private land.

A gate is located on Spur 16 on Section 17 just before the road enters the Beaver land banking parcel. It was recently repaired and prevents unauthorized motorized access onto the parcel. Non-motorized public access is allowed.

Current Recreational Uses
Recreational use of the Beaver land banking parcel is light compared the surrounding area due to the lack of motorized access (Manning pers. comm. 2012). Current recreational activities include hunting, hiking, berry picking, horseback riding, and mountain biking. Timber skid trails and the permanent road system is utilized for recreational (non-motorized access). There are no developed recreational facilities on the parcel. On areas of the parcel recently harvested for timber the recreational experience is of lower quality due to logging residue and the visual effect of recent harvest activity prior to final site cleanup (Section 11).

Effects:

No Action Alternative A: There would be no effects from Alternative A. The Beaver land banking parcel would continue to be managed for timber by the DNRC, but if a trail on the parcel was proposed in the future it would be considered and analyzed. Ongoing timber sale clean-up would continue for the immediate future, including site preparation for planting and disposal of logging residue (piling and burning). These activities could affect recreational users as the activities occur, but following completion of the activities, there would be no impacts on recreational uses or access.

Proposed Action Alternative B: Alternative B would add developed recreation to the Beaver land banking parcel (trail) but would eliminate dispersed recreation. The property would be developed with a trail to maintain public access through part of the parcel. This trail however would not provide access to the larger parcel itself for recreation, therefore dispersed recreation would be eliminated. No change in motorized public access would occur.

Alternative B would meet the recreational goals of the Whitefish Neighborhood Plan. Approximately 19 miles of trail in the Beaver Lakes/Skyles Unit and in the Lupfer Unit have been constructed; Alternative B would cumulatively add to the developed and maintained trail network in the area. A public recreation easement is in the preliminary design stages that would permanently protect recreation opportunities on State trust lands in the area. This proposal, in conjunction with Alternative B, would cumulatively increase trail opportunities for local residents and visitors. Alternative B would remove 580 acres of dispersed recreation opportunities in the area, but the preliminary recreation easement proposal would permanently protect dispersed recreation on State trust lands, balancing out the loss of this type of recreation on the Beaver land banking parcel.

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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.

The Beaver land banking parcel would be subject to a deed restriction that would limit any residential or commercial development on the parcel to no more than two homesites. There would not be any other population or housing effects caused by the project.

---

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

No measurable disruption of social structures is anticipated as a result of either No Action Alternative A or Proposed Action Alternative B.

Proposed Action Alternative B would change the use of an area traditionally used by the community for dispersed recreation to developed recreation (on a trail corridor).

---

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

The Beaver Lake/Skyles area is unique in that it includes large tracts of undeveloped land close to the City of Whitefish. It provides recreation and open space to residents and visitors to the area within close proximity to the city.

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.

A comprehensive analysis of the economic factors related to the Beaver land banking project is provided in Appendix C - Economic Analysis Report.

EA Checklist Prepared By:	**Name:**	Stephanie Lauer	**Date:**	June 28, 2012
	Title:	Project Manager JBR Environmental Consultants, Inc.		

V. FINDING

25. ALTERNATIVE SELECTED:

Following a thorough review of this Checklist Environmental Assessment and appendices, public correspondence, and Department policies and rules, the decision has been made to select Proposed Action Alternative B. Proposed Action Alternative B involves recommending preliminary approval of the tract of land for sale which would allow the land banking process to continue, including appraisals and additional analysis. Proposed Action Alternative B would incorporate terms of sale including:

1. The entire 580 acre parcel would be subject to a deed restriction that would limit any residential or commercial development on the parcel to no more than two homesites.

2. The parcel would include a permanent, public recreational trail easement, included as part of the "Whitefish Trail", constructed and maintained by the property owner.

Within the limitations imposed by uncertainty, Proposed Action Alternative B could result in greater income generation to the beneficiaries, depending on sale values and the income-generating capacity of land and/or other assets purchased through the Land Banking Program.

This would meet the purpose of MCA 77-2-361 through 77-2-367 (Land Banking Program) passed by the 2003 State Legislature.

26. SIGNIFICANCE OF POTENTIAL IMPACTS:

I have determined that significant environmental effects would not result from the proposed land sale based on review of comments received, subsequent identified concerns, and the environmental assessment that was completed. The terms of the sale would restrict future development on the parcel, reducing the risk of adverse environmental effects. The requirement for the purchaser to construct and maintain a public trail on the parcel would at least partly mitigate the effects associated with the loss of 580 acres of public land currently available for dispersed recreation. Continuing the land banking process to complete an appraisal of the land will help to relieve some of the uncertainty identified in the economic analysis for the potential sale, and will provide additional insight on the financial benefit of completing this land sale.

27. NEED FOR FURTHER ENVIRONMENTAL ANALYSIS:

☐	EIS	☐	More Detailed EA	☒	No Further Analysis

EA Checklist Approved By:	**Name:**	Steve Frye
	Title:	DNRC NWLO Area Manager
Signature: /s/ Steve Frye		**Date**: June 28, 2012

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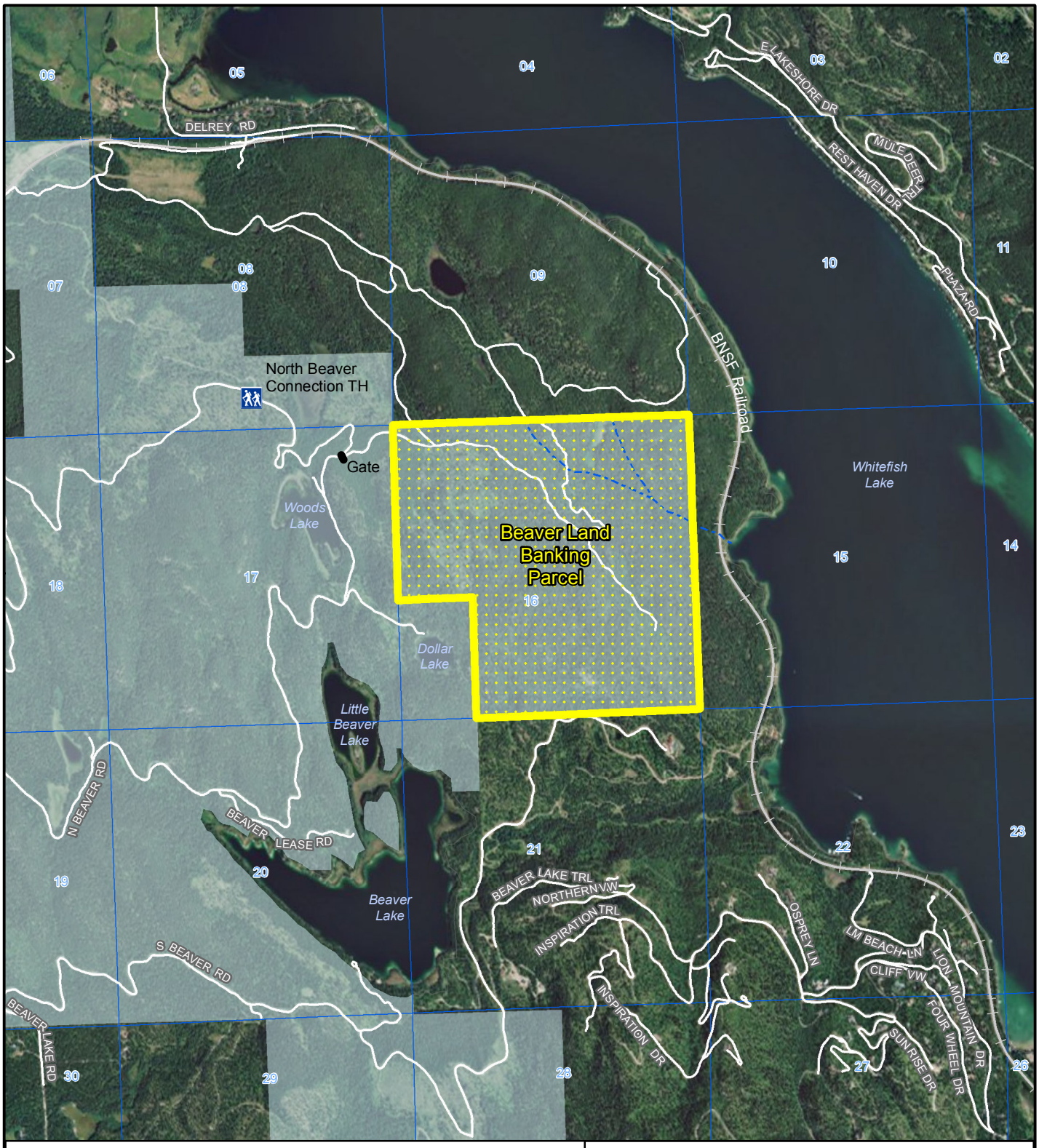


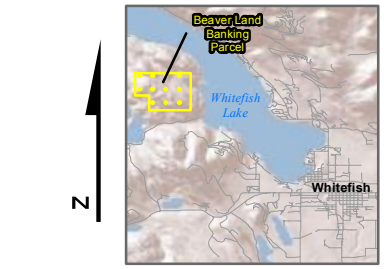
Legend

- Beaver Land Banking Parcel
- Section Lines
- Intermittent Stream

Surface Land Managment

- State
- Private

BASE MAP: NAIP Aerial Imagery, 2009
Surface Land Managment: BLM, 2011
Trails: Whitefish Legacy Partners, 2012



2,000 1,000 0 2,000 Feet

Montana DNRC
Beaver Land Banking Project

Figure 1
Project Location/Site Map

DRAWN BY	DATE DRAWN
NF	6/26/2012

SCALE: 1 in = 2,500 feet

Path: M:\STATES\MT\Clients\Whitefish_City\Whitefish_Legacy_MEPA\GeneralLocationMap_26Jun12.mxd

This document is for reference purposes only and should not be used as a legal document. JBR makes no guarantees to the accuracy of the data contained herein or any loss resulting therefrom.

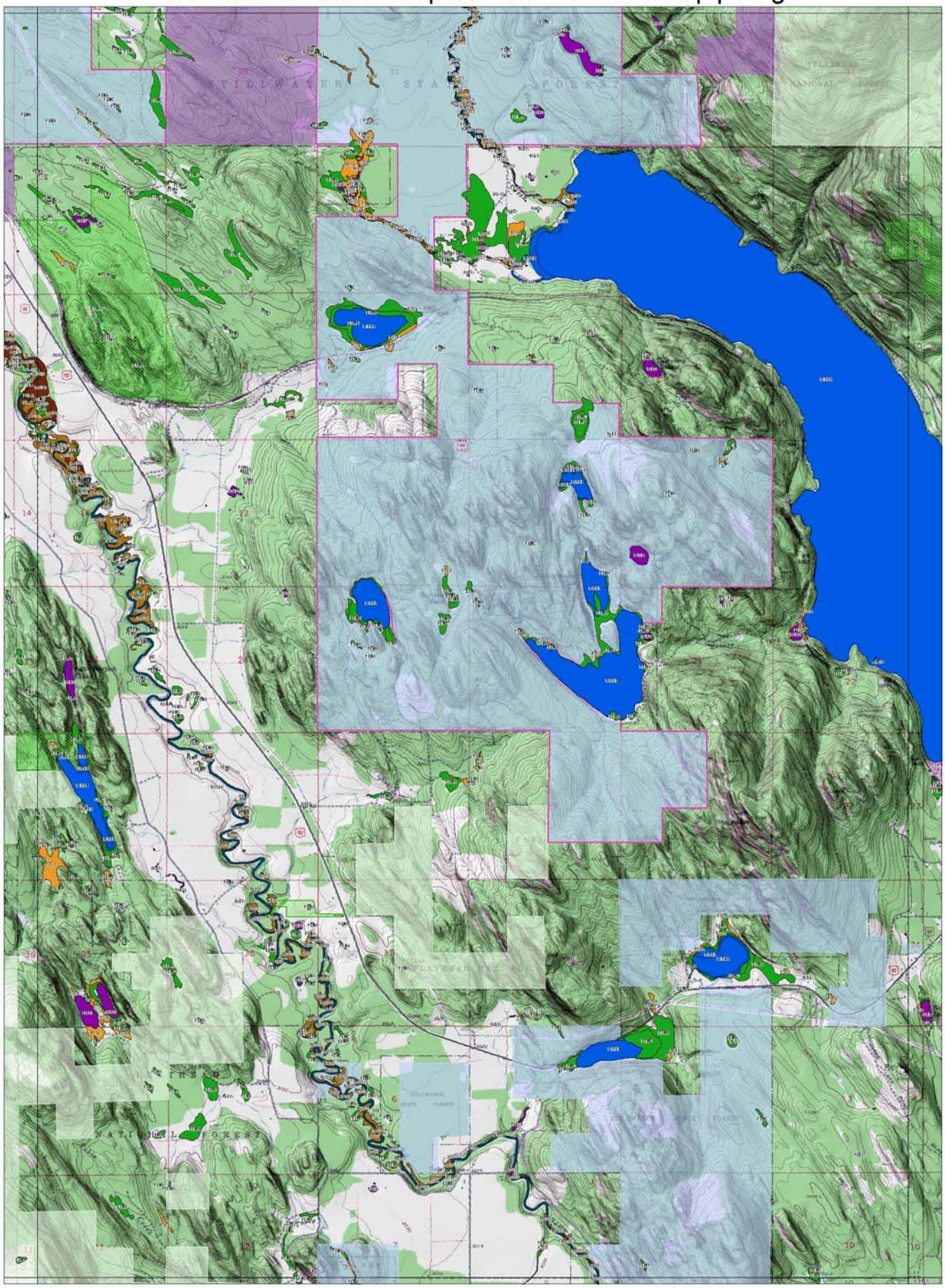
Appendix A
Content Analysis

Appendix A - Content Analysis

Commenter	Affiliation	Comment	DNRC Response
Bick Smith	Adjacent Landowner	Would like to see more detail in the restrictions proposed for the parcel to be sold. Specifically: • Where and how much trail • Development restrictions details • How is the land going to be managed once sold; any restrictions or management emphasis on the forested land after sale. The concern is the uncertainty of objectives and parameters for long term management of property in case ownership changed.	At this point in the process the DNRC will not impose any further restrictions on the parcel. The proposal has already been designed and presented to the public through the scoping process. It is beyond the scope of the process at this time to define the trail location and length to a level of detail that can be imposed on a future landowner. Outside of the construction of a trail and the development restriction to two homesites, a future landowner may manage the parcel as they see fit as long as the management meets State and Federal laws. All bidders for the parcel would be subject to the same development restrictions.
Rick Blake	Local Resident	No specific comment, just wants to be kept informed.	Noted. Will be kept on the mailing list for the project.
Heidi VanEveren	Whitefish Legacy Partners	Supports the proposed sale; emphasized that it would meet some of the objectives in the Whitefish Neighborhood plan and of the Whitefish Community. Supports the landbanking program as a way to increase income to the Trust Beneficiaries.	Noted. No response necessary.
Daniel Berube	Member of Landbanking Negotiated Rulemaking Committee	Objects to the proposed sale. Noted the location of the parcel make it very valuable for other options such as a lease to a developer and those uses would provide more income than any alternative land that would be purchased from land bank funds. Does not feel the proposed sale is in compliance with DNRC's responsibility to get all the revenue for the beneficiaries that can be obtained. Provided an example of a 99-year lease to a developer as an option.	A comprehensive economics analysis was completed as part of the checklist EA. It is noted that the appraisal of the parcel would include the highest and best use of the property, which would be development.
Lyle Phillips	Local Resident	Strongly supports Trust Land Management Program and purpose as carried out by DNRC. Supports the proposed sale if land to be purchased from the sale is easier to manage to generate equal or greater revenue to the Trusts.	Noted. No response necessary.

Appendix B
Wetlands and Riparian Areas Map

Wetland and Riparian Area Mapping



Wetland and Riparian Mapping

- Lacustrine
- Freshwater Pond
- Freshwater Emergent Wetland
- Freshwater Shrub Wetland
- Freshwater Forested Wetland
- Riverine
- Riparian Emergent
- Riparian Shrub
- Riparian Forested

Ownership

- Special Designations
- Conservation Easements
- US Bureau of Land Management
- US Bureau of Reclamation
- US Fish and Wildlife Service
- National Park Service
- US Forest Service
- USDA (Ag Research Stations)
- Army Corps of Engineers
- Other Department of Defense
- Undifferentiated State
- State Trust Lands
- Montana Fish, Wildlife & Parks
- State – University, Institutions, MDT
- DNRC (Water Project Lands)
- Local Government
- US Bureau of Indian Affairs Trust Lands
- Tribal Lands
- Plum Creek Timber Company
- Private Land Trusts

0.5 0.25 0 0.5 Miles

1 0.5 0 1 Kilometers

1:15,250

Quad Code - 4811444

Quad Name - Beaver Lake

The MTNHP wetland and riparian mapping has gone through two stages of internal review. It has been field verified and approved by the U.S. Fish and Wildlife Service's (USFWS) National Wetland Inventory (NWI). Finalized mapping is available for download from the USFWS as well as from NRIS.

The wetland and riparian mapping is not an exhaustive or comprehensive inventory of wetland and riparian areas within the mapping boundary. Field verification of the absence or presence of wetland and riparian areas will always be an important obligation of users of our data. Additionally, the NWI definition of a wetland is more inclusive than the definition of a jurisdictional wetland, and thus the wetland boundaries shown in our dataset cannot substitute for boundaries mapped in a wetland delineation.

Wetland and Riparian mapping is mapped to the FGDC and USFWS National Wetland Inventory standards using the 1995 NAIP imagery at a 1:12,000 scale. Thus, the data are intended for use in publications, at a scale of 1:12,000 or smaller. Due to the scale, the primary intended use is for regional and watershed data display and analysis, rather than specific project data analysis. The map products were neither designed nor intended to represent legal or regulatory products.

Data Sources: The stewardship data was created by the Montana Natural Heritage Program. All other data layers in this map were obtained from the Montana GIS Portal which is maintained by NRIS.

Montana Natural Heritage Program

http://mtnhp.org

Jun 29, 2010

Appendix C
Economics Analysis Report

Economic Analysis of the Beaver Lake Area Land Banking Proposal

June 2012

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This report was prepared by Sarah Reich, Alexandra Reese, and Ed MacMullan of ECONorthwest, which is solely responsible for its content.

ECONorthwest specializes in economics, planning, and finance. Founded in 1974, we're one of the oldest independent economic consulting firms in the Pacific Northwest. ECONorthwest has extensive experience applying rigorous analytical methods to examine the benefits, costs, and other economic effects of management and investment decisions for a diverse array of public and private clients throughout the United States and across the globe.

This report was prepared as an Appendix to the Environmental Assessment (EA) of the Beaver Lake Area Land Banking Proposal (Proposal). The EA was completed by JBR Environmental Consultants, Inc., as part of the Montana Environmental Policy Act (MEPA) review of the impacts associated with the Proposal, on behalf of the Whitefish Legacy Partners and the Montana Department of Natural Resources and Conservation.

Throughout the report we have identified the sources of information and assumptions used in the analysis. Within the limitations imposed by uncertainty and the project budget, we have made every effort to check the reasonableness of the data and assumptions. In our analysis, we acknowledge that any forecast of the future is uncertain. The fact that we evaluate assumptions as reasonable does not guarantee that those assumptions will prevail.

We gratefully acknowledge the assistance of others who provided us with information and insight, but emphasize that we, alone, are responsible for the report's contents. We have prepared this report based on our general knowledge, and information derived from government agencies, the reports of others, interviews of individuals, and other sources believed to be reliable. We have not verified the accuracy of such information, however, and make no representation regarding its accuracy or completeness. Any statements nonfactual in nature constitute the authors' current opinions, which may change as more information becomes available.

For more information about ECONorthwest, visit our website at www.econw.com.

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I. INTRODUCTION AND BACKGROUND

The Whitefish Legacy Partnership (WLP), in cooperation with the Montana Department of Natural Resources and Conservation (DNRC), through its prime contractor, JBR Environmental Consultants, Inc., requested ECONorthwest (ECONW) to perform an economic analysis of the proposed land banking transaction of a 580-acre parcel of State Trust land in the Beaver Lake area, near Whitefish, Montana.

The Land Banking Program rules require that parcels nominated for sale and deemed suitable under the program undergo an Environmental Assessment under the Montana Environmental Protection Act (MEPA). Among the goals and provisions of the Land Banking Program are to maximize the sustained rate of return to the trusts.[1] This economic analysis provides information to allow DNRC to evaluate the economic factors relevant to its decision to offer the parcel for sale through the Land Banking Program.

In our analysis below, we describe the methodology we use to perform the analysis. We then describe the assumptions we make to calculate the income stream from timber harvests on the parcel, and describe the other sources of economic value provided by the parcel. Based on this description, we outline the results of the cash-flow analysis and describe the impacts associated with the land banking proposal. We conclude by describing the sources of uncertainty and risk that may affect the results. We present the detailed income analysis in Appendix A.

II. METHODOLOGY

Our economic analysis considered the many ways the parcel contributes value to the people of Montana as a state asset, and the ways it could contribute value by being sold. The parcel's value primarily derives from its natural capital—its vegetation, soils, and water resources. This natural capital produces benefits directly for the Trust by supporting timber growth, which generates income when it is harvested and sold in the market. It produces benefits to society in other ways, including providing a setting for people to recreate in, and providing ecosystem services,[2] including clean water, carbon sequestration, and air filtration, which contribute to people's well-being by reducing or avoiding costs to provide equivalent services in other ways. These benefits, for the most part, are not captured by the market and don't currently generate income for the trust.

The first part of our analysis focuses on the income generating characteristics of the property as a State Trust asset. We use a spreadsheet model developed by Jordan Larson, a resource economist with the DNRC. Using the model, we calculate the net present value of the potential income streams of the property and the total income return on the

[1] Montana Department of Natural Resources and Conservation. 2012. *Land Banking Handbook*. January.

[2] *See,* e.g., Daily, G.C. 1997. *Nature's Services: Societal Dependence on Natural Ecosystem*. Washington, D.C.: Island Press; De Groot, R.S., M.A. Wilson, and R.M.J. Boumans. 2002. "A Typology for the Classification, Description and Valuation of Ecosystem Functions, Goods and Services." *Ecological Economics* 41 (3): 393-408.; Boyd, J. and S. Banzhaf. 2006. "What Are Ecosystem Services? The Need for Standardized Environmental Accounting Units." Ecological Economics 63(2-3): 616-626.; Fisher, B., R.K. Turner, P. Morling. 2009. "Defining and classifying ecosystem services for decision making." *Ecological Economics* 68(3): 643-653.

investment and the total return on the asset. We worked directly with the DNRC to identify the assumptions related to the sources of income and expenses for the parcel. We used these assumptions in the income analysis:

- **Time Period.** The DNRC evaluates the income characteristics of trust lands involving timber production based on a 60-year time horizon. This period is consistent with the long planning periods of timber management.
- **Discount Rate.** We use a nominal discount rate of 5.4 percent. This rate represents a baseline accounting of DNRC's investment opportunity cost, or the threshold for an acceptable rate of return, based on the long-term government bond average return. The justification for using long-term government bond rates is that most state investment pools, including the permanent school trust fund, are legally required to invest in bonds and not stocks.
- **Inflation Rate.** We use an inflation rate of 3 percent, which is the long-term average of annual inflation, as measured by the Consumer Price Index.

The second part of our analysis considers the other economic values associated with the parcel, but which do not generate revenue for the trusts directly. These include recreation and other ecosystem goods and services. We discuss these values qualitatively, although where data are available, we provide quantitative illustrations of the value associated with recreational use.

The third part of our analysis considers the impacts on the trust of selling the parcel. Through the Land Banking Program, DNRC would sell the asset fair market value. Appraisals have not yet been conducted for the property, and will not be available until after the MEPA analysis is submitted. Therefore, we use information from real estate listings for vacant lots in the Whitefish area to estimate a potential range of value for the parcel. We also relied on the knowledge and judgment of DNRC economists and staff to estimate a potential range of values for the parcel.[3]

The proceeds likely would be invested in the state's Short Term Investment Program (STIP) until reinvested in new land purchases. The STIP is a low-risk investment program intended to protect the value of capital, rather than generate income. As a result, the STIP's historical yield is volatile, with an average yield over the last 10 years of about 2.4 percent, and ranging from a high of 5.3 percent in 2007 to a low of 0.3 percent in 2011.[4] There is considerable uncertainty about how long the funds would remain in the STIP, and how they would be invested in a new acquisition.

[3] Personal communication with Jordan Larson, Resource Economist, Montana DNRC. June 15, 2012 and June 19, 2012.

[4] Montana Department of Commerce, Board of Investments. 2012. *Fiscal Year 2011 Annual Report.* Retrieved June 26, 2012, from http://www.investmentmt.com/content/AnnualReport/Docs/FY2011/ANNUALREPORTMASTER.pdf

III. PARCEL ASSUMPTIONS

The Beaver Lake Area Land Banking proposal involves a 580 acre parcel of state trust land that benefits the Common Schools fund (kindergarten through grade 12). The parcel is managed for timber production. The parcel is also used for recreation. A few roads enter the parcel and serve as access points for dispersed recreation. Hiking, hunting, berry picking, mountain biking, horseback riding all occur throughout the area. A survey by Whitefish Legacy Partners suggests that participants favor the Beaver Lake subareas for hiking, walking, horseback riding, cross-country skiing, and snowmobiling.[5] Unofficial trails, likely developed from old timber skid trails, exist on the parcel. No developed recreational facilities exist on the parcel.

A. Land Value

No appraisal is available for the property. People familiar with the real estate market in the Whitefish area suggest that the market collapse in the last few years has been tempered somewhat compared to other locations in Montana and the west. Prices of available lots listed on MLS range from $3,650 per acre (for a 109 acre lot on Lupfer Road) to $43,775 per acre (for a 249 acre lot on Big Mountain Road).[6] Smaller vacant lots in the Whitefish area are currently on the market for up to $90,000 per acre. Based on discussions with DNRC staff and economists familiar with the real estate market in the area, we used a range of $10,000 to $28,000 per acre to approximate the value of the land.[7] The actual value, assessed through an appraisal and market transactions, could fall within or on either side of this range.

B. Timber Harvest

We assume if the parcel were not sold through the Land Banking Program, DNRC would continue to manage it for timber production. Table 1 shows the assumptions we use for timber harvest and maintenance activities on the parcel over the next 60 years. We assume costs and revenues shown in the right-most columns in Table 1. Timber harvest costs assume a 2:1 revenue-to-cost ratio, which is consistent with recent DNRC timber sales in the region.[8]

---

[5] Whitefish Legacy Partnership. 2006. *A Trail Runs Through It: Master Plan.* Retrieved June 26, 2012, from http://whitefishlegacy.org/docs/TRTI_Masterplan.pdf

[6] Whitefish Real Estate, Northwest Montana. 2012. *Vacant Land.* Retrieved June 26, 2012, from http://link.flexmls.com/ou6yji16vtd,1'

[7] Personal communication with Jordan Larson, Resource Economist, Montana DNRC. June 15, 2012 and June 19, 2012.

[8] Personal communication with Jordan Larson, Resource Economist, Montana DNRC. June 15, 2012 and June 19, 2012. See also Department of Natural Resources and Conservation. 2009. *Beaver/Swift/Skyles Timber Sale Project: Environmental Assessment.* April. Pg. III-47.

Table 1. Timber Management Activities, Costs, and Revenues on the Parcel

Year	Activity	Volume/Acres Treated	Revenue	Cost
2015	Pre-commercial Thinning	200 Acres	N/A	$100/Acre
2025	Timber Harvest	1.0 MMBF	$225/MBF	$112/MBF
2026	Planting	100 Acres	N/A	$125/Acre
2050	Timber Harvest	2.9 MMBF	$225/MBF	$112/MBF
2051	Planting	200 Acres	N/A	$125/Acre
2065	Pre-commercial Thinning	100 Acres	N/A	$100/Acre
2072	Timber Harvest	1.4 MMBF	$225/MBF	$112/MBF

Source: ECONorthwest, with data and assumptions from Jordan Larson, DNRC resource economist.

C. Recreational Use

No official recreational leases exist on the parcel. Individuals and families who use the parcel for dispersed recreation are required to obtain a use license. The Department of Fish, Wildlife, and Parks (DFWP) sells the licenses through authorized dealers for $10 per year for an individual license and $20 per year for a family license.[9] DFWP's conservation licenses, required for hunting and fishing activities, also generates $2 per license for state trust lands. The revenue from these licenses ($1,043,707 in FY2011)[10] is collected state-wide and redistributed to the recreational use lands held by the state in trust. Thus, this source of revenue is not tied specifically to the parcel, and typically amounts to very little value per acre.

Recreational use in the Beaver Lake area is widespread. Demand for trails to engage in hiking, horseback riding, mountain biking, cross-country skiing and snowshoeing, and running and jogging is strong and growing.[11] To meet these demands, recreationists have built unofficial trails and partnerships to build and maintain official new trails have been established. Use data are not comprehensively available for the region, but a recent traffic analysis at one popular trailhead estimated about 300 trips per day. On many days during the summer season, trailhead parking throughout the region is at or exceeds capacity.[12] To help meet the growing demand for recreation from Whitefish residents and visitors to the area, the Whitefish Legacy Partnership, in collaboration with the DNRC, US Forest Service, Montana State Parks, and others has built or is in the

[9] Montana Department of Natural Resources and Conservation. *Recreational Use of State School Trust Land.* Retrieved June 25, 2012, from http://dnrc.mt.gov/trust/REMB/statues/recreationaluse.asp

[10] Montana Department of Natural Resources and Conservation, Trust Land Management Division. *Fiscal Year 2011 Annual Report.* Retrieved June 25, 2012, from http://dnrc.mt.gov/AboutUs/Publications/2011/TrustAr.pdf

[11] Whitefish Legacy Partnership. 2006. *A Trail Runs Through It: Master Plan.* Retrieved June 26, 2012, from http://whitefishlegacy.org/docs/TRTI_Masterplan.pdf

[12] Personal communication with Greg Ponchin, Northwest Land Office. June 21, 2012.

process of building over 20 miles of new trails in the Beaver Lake/Skyles and Swift Creek areas.[13]

D. Other Ecosystem Goods and Services

The parcel provides other types of ecosystem goods and services, including wildlife habitat, clean water and air, carbon sequestration for climate regulation, and scenic views–both from the parcel and as a backdrop from other locations around Whitefish Lake. That these types of ecosystem goods and services provide value to society is well-documented, through research conducted in Montana and elsewhere.[14] It is beyond the scope of this analysis to provide a quantitative assessment of the value associated with these resources.

IV. Analysis and Results

Table 2 presents the results of the cash-flow analysis of timber management activities on the parcel, over the next 60 years. The Table presents a range of average income return, assuming different per-acre values of the land.

Table 2. Timber Management Activities, Costs, and Revenues on the Parcel

Assumption of Land Value	Estimated Land Value	Net Present Value of Income Stream	Average Income Return
$10,000/acre	$5,800,000	$212,735	0.15%
$28,000/acre	$16,240,000	$212,735	0.05%

The results in Table 2 do not take into consideration the potential for the land value to appreciate over time. DNRC typically assumes a 4-percent annual appreciation rate for land, however given the recent uncertainty in the market for land, the historical appreciation rates may not apply for the foreseeable future. It is likely, however, given the unique characteristics of the property, its proximity to Whitefish Lake and the community of Whitefish, it has the potential to appreciate at rates equal to or greater than the surrounding property in the area.

If the parcel were sold at fair market value, the proceeds of the sale would, for some amount of time, be invested in the state's Short Term Investment Program (STIP) account. Any interest earned on the principle would be distributed to the Trust, rather than reinvested. Depending on the yield of the fund, which has varied considerably over the last decade, the annual income generated could range from $17,400 to $389,760, in undiscounted 2012 dollars.[15] No information is available to estimate the timing of a new

[13] Whitefish Legacy Partners. 2012. *What we Do: Recreation.* Retrieved June 26, 2012, from http://whitefishlegacy.org/recreation.php

[14] *See,* e.g., Montana Department of Natural Resources and Conservation and Montana Department of Labor and Industry. 2009. *An Estimation of Montana's Restoration Economy.* September.

[15] This calculation relies on the range of assumed land value ($5,800,000 to $16,240,000) and a yield ranging from 0.3 percent (the yield in 2011) to 2.4 percent (the average yield over the last 10 years).

acquisition or amount of income associated with a newly acquired parcel. However, as the goal of the Land Banking Program is to maximize the sustained income to the trusts, any future purchase of land using the proceeds from the sale of this parcel would presumably be invested in property that has a higher income return than the current parcel.

In addition to the income streams presented in this analysis, there are other elements of value associated with the parcel that are not reflected explicitly in the cash-flow analysis. These other benefits do not provide revenue to the Trust directly, however they do improve the quality of life of nearby residents of Whitefish and visitors to the region. If DNRC does not sell the parcel, it would continue to provide these services. It is possible, consistent with on-going recreational development in the region and continued population growth in Whitefish and surrounding communities, that the recreational and other ecosystem services the parcel provides (such as scenic vistas) would increase in value to society over time. It is also possible that recreational development on the parcel could be developed in a way that provides additional income streams to the Trust, as has occurred on other State Trust parcels in the Whitefish area. That said, no current plans exist to formalize or capture additional revenue from the dispersed recreation that currently takes place on the parcel.

If the parcel is sold, some of the ecosystem goods and services it currently provides would continue to be available to society at some level. Carbon sequestration and storage, for example, likely would continue as long as trees and vegetation are allowed to persist and soil remains largely undisturbed. Current plans suggest that if the parcel is sold, parts of it could be developed into up to two homesites.[16] This development could diminish the level of some of the ecosystem goods and services the parcel provides, while leaving others at present conditions. Current plans also suggest a trail easement would be created and the property owner would build and maintain a trail that could become part of the Whitefish Trail system. Dispersed recreation that currently takes place on the parcel itself, however, could be limited or prohibited, potentially reducing the level of benefits some recreational users currently enjoy.

V. UNCERTAINTY AND RISK

There are numerous sources of uncertainty and risk that may affect, positively or negatively, the results of this economic analysis. The primary source of uncertainty include:

- **Lack of site-specific data.** Many of our assumptions of per-unit values, costs, and income are based on average values that may vary, either positively or negatively, for this parcel. Timber-harvest costs, for example, are based on costs incurred on recent timber harvests and represent an average that may not reflect the actual costs of harvesting any particular stand on this parcel. Similarly, the estimate of harvest revenue is based on average stumpage value over a period of time, and may overestimate or underestimate the actual stumpage value received

[16] This assumes that the deed restrictions described in the scoping letter are actually put into place once the property is sold.

in any given year or any given stand of trees. In addition, the harvest and maintenance schedule used in this analysis is preliminary and may differ from actual timber-management activities over the 60-year planning horizon.

- **Potential changes in future values associated with timber and real-estate markets.** Considerable uncertainty surrounds the prices used in this analysis for timber and land, given the recent and ongoing economic instability in the U.S. and the world. Of particular relevance is the on-going housing crisis in the U.S., which has resulted in a decrease in the demand for timber and new homes, and resulting declines in prices.

- **Potential changes in management under private ownership.** No well-defined plans exist to provide information about how the parcel would be used or managed by a future owner. While preliminary information suggests that development would be limited to two homesites and access through the property would be maintained with a public trail easement and new trail, the details are uncertain. Thus, the benefits or costs to the residents and visitors of the area are largely unknown.

- **Potential changes in future values associated with external forces, such as climate change and the socioeconomic structure of the region.** Potential impacts associated with climate change may affect the assumptions in the analysis, particularly related to timber management. Increased temperature changes in snowpack and runoff timing predicted in northwestern Montana as a result of climate change are likely to increase the risk of wildfire and susceptibility to diseases for Montana's forests. This may have dramatic impacts on the management costs and expected future harvest revenues from the forest parcels involved in this analysis. Damage from fire, insects, or disease infestation may reduce expected yields, reducing revenues. Conversely, these impacts may increase management costs. Both of these effects would reduce the expected income from forest product sales projected in this analysis.

The uncertainty in our findings stems from factors beyond our, or anyone else's current knowledge or control. These elements of uncertainty, ranging from future market conditions and fluctuations in commodity prices to how climate change will affect the quality of timber and agricultural yields in Montana, will affect investment decisions made at any given time and place. We stress that these elements of uncertainty are important to recognize, understand, and integrate into the decision-making process, as they have direct bearing on the level of risk inherent in any potential investment.

APPENDIX A. INCOME ANALYSIS CALCULATIONS

CASH FLOW ANALYSIS

Beaver Lake Land Banking Proposal

Lands	60 yr NPV	60 yr IR
BL Parcel (Low)	$212,735	0.15%
BL Parcel (High)	$212,735	0.05%

Analysis Conducted by Sarah Reich, ECONorthwest
27-Jun-12

Lands	Estimated Value	Total Acres	Forest Acres	Grazing Acres	MBF	AUM	Price/Acre
BL Parcel (Low)	$5,800,000	580	580	0	5,602	0	$10,000
BL Parcel (High)	$16,240,000	580	580	0	5,602	0	$28,000

Prices	Product	Unit	Price	Cost
	Timber	MBF	$225.00	$112.50
	Cattle	AUM		
	Hay	tons		
	Weed control	/acre		
	Pre-commercial thin	/acre		$100.00
	Commercial thin	/acre		
	Planting	/acre		$125.00
	Drain dip			
	Culvert			
	Road	/mile		

Rates	
Inflation	3.0%
Discount	5.4%
Appreciation	4.0%

BL Parcel (Low)

t	Cash events	Income	Expense	Annuity	Total	NPV	IR (Low)	IR (High)
1					$0	$0	100.0%	0.00%
2					$0	$0	100.0%	0.00%
3	200 Acres Pre-Commercial Thinning		$20,000		-$20,000	-$18,626	99.7%	-0.12%
4					$0	$0	100.0%	0.00%
5					$0	$0	100.0%	0.00%
6					$0	$0	100.0%	0.00%
7					$0	$0	100.0%	0.00%
8					$0	$0	100.0%	0.00%
9					$0	$0	100.0%	0.00%
10					$0	$0	100.0%	0.00%
11					$0	$0	100.0%	0.00%
12					$0	$0	100.0%	0.00%
13	1,000 MBF Harvest	$225,000	$112,500		$112,500	$82,652	101.9%	0.69%
14	100 Acres Planting		$12,500		-$12,500	-$8,968	99.8%	-0.08%
15					$0	$0	100.0%	0.00%
16					$0	$0	100.0%	0.00%
17					$0	$0	100.0%	0.00%
18					$0	$0	100.0%	0.00%
19					$0	$0	100.0%	0.00%
20					$0	$0	100.0%	0.00%
21					$0	$0	100.0%	0.00%
22					$0	$0	100.0%	0.00%
23					$0	$0	100.0%	0.00%
24					$0	$0	100.0%	0.00%
25					$0	$0	100.0%	0.00%
26					$0	$0	100.0%	0.00%
27					$0	$0	100.0%	0.00%
28					$0	$0	100.0%	0.00%
29					$0	$0	100.0%	0.00%
30					$0	$0	100.0%	0.00%
31					$0	$0	100.0%	0.00%
32					$0	$0	100.0%	0.00%
33					$0	$0	100.0%	0.00%
34					$0	$0	100.0%	0.00%
35					$0	$0	100.0%	0.00%
36					$0	$0	100.0%	0.00%
37					$0	$0	100.0%	0.00%
38	2,900 MBF Harvest	$652,500	$326,250		$326,250	$132,481	105.6%	2.01%
39	200 Acres Planting		$25,000		-$25,000	-$9,914	99.6%	-0.15%
40					$0	$0	100.0%	0.00%
41					$0	$0	100.0%	0.00%
42					$0	$0	100.0%	0.00%
43					$0	$0	100.0%	0.00%
44					$0	$0	100.0%	0.00%
45					$0	$0	100.0%	0.00%
46					$0	$0	100.0%	0.00%
47					$0	$0	100.0%	0.00%
48					$0	$0	100.0%	0.00%
49					$0	$0	100.0%	0.00%
50					$0	$0	100.0%	0.00%
51					$0	$0	100.0%	0.00%
52					$0	$0	100.0%	0.00%
53	100 Acres Pre-Commercial Thinning		$10,000		-$10,000	-$2,845	99.8%	-0.06%
54					$0	$0	100.0%	0.00%
55					$0	$0	100.0%	0.00%
56					$0	$0	100.0%	0.00%
57					$0	$0	100.0%	0.00%
58					$0	$0	100.0%	0.00%
59					$0	$0	100.0%	0.00%
60	1,400 MBF Harvest	$315,000	$157,500		$157,500	$37,956	102.7%	0.97%