LOST LAKES OVERALL DEVELOPMENT PLAN

ENVIRONMENTAL ASSESSMENT, COMMUNITY IMPACT REPORT AND SUMMARY OF PROBABLE IMPACTS

INTRODUCTION

The Lost Lakes Development Company, LLC (LLDC) owns approximately 627 acres of land in the Big Sky area west of and adjacent to Moonlight Basin Ranch. The land consists of two tracts in Township 6 South, Range 2 East, Madison County, Montana: Approximately 307 acres in the eastern half of Section 16 and the entire eastern half of Section 21 (320 acres). The Lost Lakes Overall Development Plan (ODP) is proposed on the northern 307-acre tract, while the southern 320-acre tract is currently under a conservation easement held by the Montana Land Reliance.

The northern development tract borders existing development and conservation land. Adjacent ownership includes the Jack Creek Preserve Foundation to the north and west, which consists of approximately 4,200 continuous acres of land, the vast majority of which is under conservation easement, and Moonlight Basin Ranch, LP an 8,000+ acre development property to the east which contains several existing and proposed subdivisions, a ski area, golf course and supporting commercial and operating facilities. The Lost Lakes conservation property is bordered to the south by USDA National Forest land. The general ownership and land use map (Figure 1) shows the Lost Lakes property relative to nearby properties.

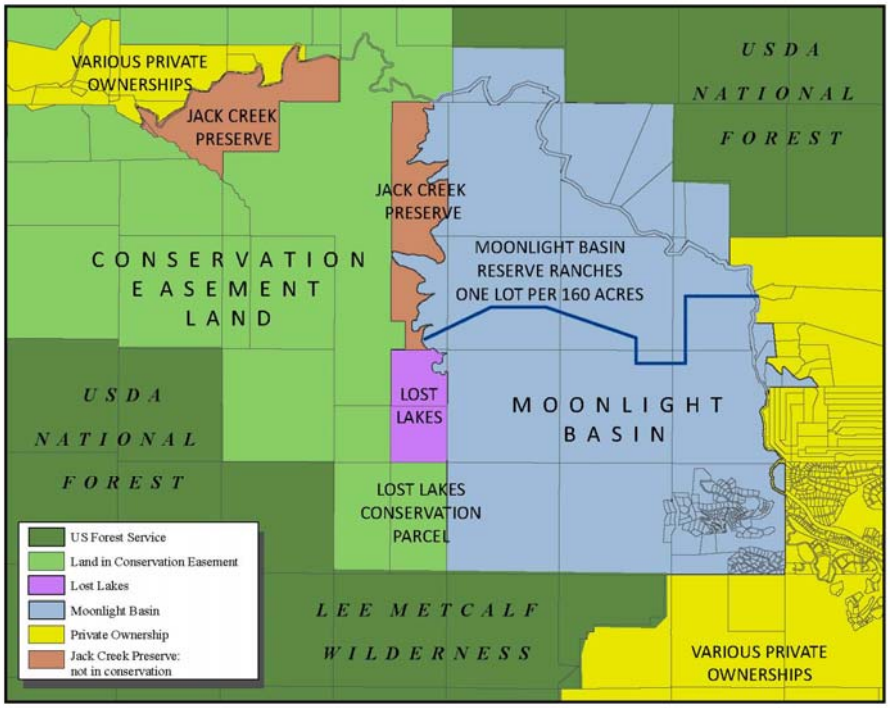

Figure 1. General Property Ownership and Land Use Map

LLDC is proposing a complementary-but-distinct residential development which can be considered an integral extension of Moonlight Basin Ranch. Roads, recreational paths, a ski lift and ski trails, electrical and power utilities, water and sewer services, wildlife management efforts and community oriented programs will be shared by Lost Lakes and Moonlight Basin Ranch (Figure 2). Moonlight Basin Ranch's looped roads and utilities require interconnection with Lost Lakes and vice-versa.

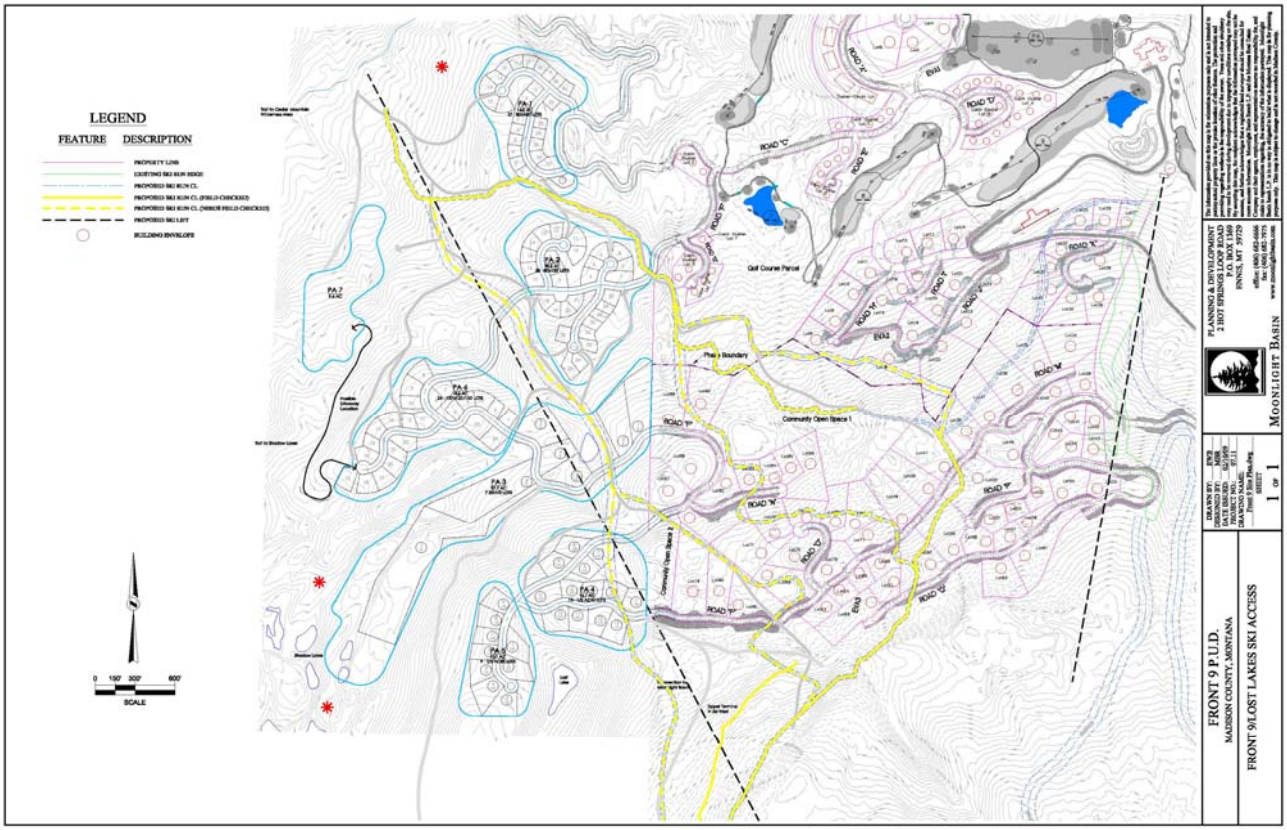

Figure 2. Lost Lakes Planning Areas (blue), Moonlight Basin Ranch Front 9 PUD (pink), main ski runs (yellow) and ski lifts (dashed black lines).

As shown on the enclosed ODP drawing (Figure 3), the project consists of seven planning areas that total 126.7 acres. The remainder of the 307-acre development parcel, approximately 180 acres or 59%, would be owned and managed by a landowners association as common area/open space. The conservation easement property would be incorporated into the project via recreational trails, but no structures or permanent development is anticipated.

Within the seven planning areas, up to 162 single-family residences are proposed to be developed. While the exact style, configuration and number of units have yet to be determined, a combination of residential lots, smaller cabin type lots and multiple family

condominium lots is being considered. The planning areas have been located after considering site constraints including topology, geology and soils, hydrology and evaluating the potential impacts on the natural surroundings and wildlife. Practical roadway locations and desirable home locations with effective ski-in/ski-out access were also considered in the layout of the planning areas. The ODP drawing shows the property with 2-foot contour intervals.

No commercial development of any kind is anticipated. Instead, the general needs of the future homeowners would be met by the commercial and recreational offerings at Moonlight Basin Ranch and Meadow Village. Architectural design standards are currently being developed so that the future homes blend in with the natural surroundings. The standards are very similar to those of Moonlight Basin Ranch and are intended to incorporate themes described in Madison County's "Code of the New West." Architectural review would occur via a design review board, which would be an offshoot of the homeowners association.

Currently the property is undeveloped except for logging roads. The property has no surface water rights or special or rural improvement districts associated with it. Pending a beneficial use permit process Moonlight Basin Ranch is currently going through with the Montana Department of Natural Resources and Conservation, Lost Lakes will connect to the Treeline Springs Water System. If the beneficial use permit request is not successful, or if unforeseen circumstances arise, Lost Lakes will develop a water supply through other means. Wastewater is planned to be treated by the Treeline Springs Sewer System unless unforeseen circumstances arise.

Preliminary Phasing and Development Plan

Over the 10 year life of the Lost Lakes ODP, phased preliminary plat applications that include one or more Planning Area are generally expected to be submitted to Madison County on an annual basis beginning in 2010. The final plat filing schedule, which includes construction of all phase specific infrastructure, is proposed to follow the schedule presented in Table 1, below.

Table 1. Lost Lakes ODP Preliminary Phasing and Construction Plan

Phase Number	Planning Area	Anticipated Preliminary Plat Submittal	Construction Start	Construction Completion and Final Plat Recording
1	PA-1	2010	2011	2012
2	PA-2	2012	2013	2014
3	PA-3	2014	2015	2016
4	PA-4	2016	2017	2018
4	PA-5	2016	2017	2018
5	PA-6	2017	2018	2019
5	PA-7	2017	2018	2019

ENVIRONMENTAL ASSESSMENT

Surface Water

Lost Lakes is located within the Jack Creek watershed, which is a tributary of the Madison River. The South Fork of Jack Creek is located 500 - 1,000 feet west of the property. Its confluence with Jack Creek is approximately one mile north of the property. The majority of the Lost Lakes site drains northwest to the South Fork of Jack Creek while a small area in the northeast corner of the property drains north to the main stem of Jack Creek. The delineation of ephemeral, intermittent, and perennial streams as "Waters of the United States" is included in the Wetland Delineation Report (Appendix A).

Three unnamed streams are shown on the USGS topographic map (Figure 4). The actual extent of these streams was specifically investigated on-site. The stream shown in the southwest corner of the property flowing into Shadow Lakes, Stream 1, was not found during on-site field reconnaissance; only the stream flowing out of Shadow Lakes exists. The second stream the USGS quadrangle map depicts is a small perennial stream that crosses the northeast corner of the site. The stream is approximately one-foot wide for the majority of the year and drains north to the main stem of Jack Creek. The USGS quadrangle map shows a third stream draining the northwest corner of the property. The stream was located during wetland delineation field work though it did not appear to the extent shown on the USGS quadrangle map. Site investigation observed a wetland complex consisting of closed depressional wetlands that were oriented similar to the USGS stream with no apparent interconnecting stream channel.

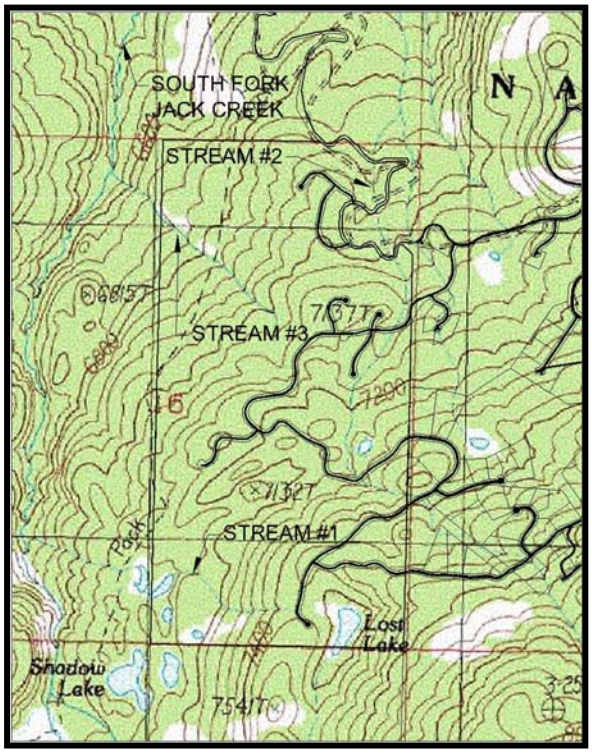

Figure 4. USGS Quadrangle Map

Two named lakes exist on the southern portion of the site, Lost Lake and the Shadow Lakes complex. These lakes are supplied by groundwater discharges. The Shadow Lakes complex consists of multiple smaller lakes interconnected by surface channels. The outlet of Shadow Lakes flows through a stream channel and connects to the South Fork of Jack Creek.

The outflow of Shadow Lakes was measured to be approximately three cubic feet per second through a culvert crossing an existing logging road west of the property in early August 2008. Lost Lake has a subterranean outlet in which water flows through fractured bedrock formations.

The Jack Creek watershed covers approximately 40,989 acres or 64 square miles, while the Madison River watershed covers 1,237,453 acres or 1,933.5 square miles in Montana. Thus, the Jack Creek watershed comprises approximately 3.3% of the Madison River watershed in Montana. Within the Jack Creek watershed, the total Lost Lakes development property acreage covers approximately 0.075% of the Jack Creek watershed.

A total of 149.1 miles of streams within the Jack Creek watershed are included in the United States Geological Survey's National Hydrography Dataset, including the mainstream of Jack Creek and ten named tributaries. The main stem of Jack Creek flows in an east to west direction and begins at the confluence of Moonlight Creek and Lone Creek. Once Jack Creek enters the Madison River Valley, there are several irrigation diversions branching away from the main stem of the creek.

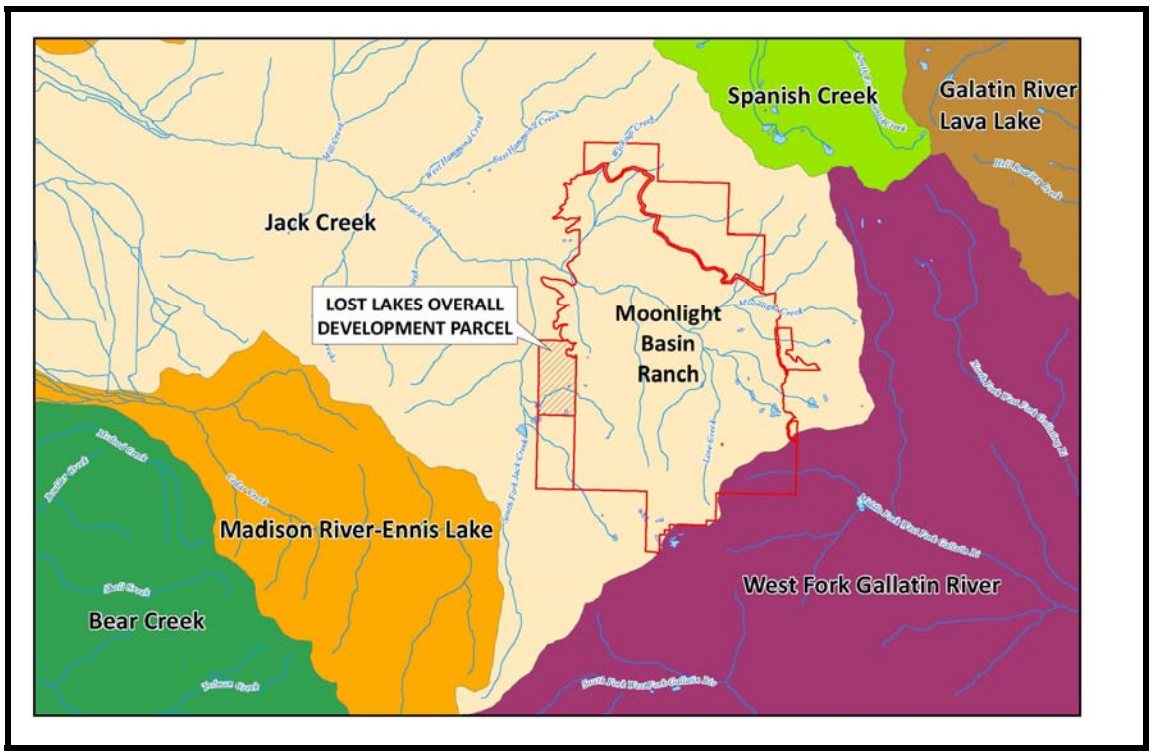

Figure 5. Watershed Map

Ground Water

Groundwater resources are dictated by the underlying geologic formations. Surface geology of the Lost Lakes property has been mapped as part of the Ennis 30'x60' Quadrangle (1:100,000) by Kellogg and Williams in 2000 (USGS Map I-2690). The portion of this map covering Lost Lakes is provided in Figure 6. Surface geology generally consists of Quaternary surface deposits ranging from 10 feet to 100 feet in thickness. These deposits overlay bedrock formations, often

times obscuring the underlying geologic formation. Surface deposits consist of mixed clay, sand, and rock.

A discontinuous shallow groundwater regime is scattered throughout the surface deposits and is supplied principally by precipitation and runoff. Heterogeneous clay layers in the surface deposits intercept percolating snowmelt and precipitation and cause water to emerge in wetlands in nearby depressions. Nearly all groundwater in the shallow system discharges to wetlands and thence discharges to streams. In numerous locations wetlands do not have a direct discharge to a stream. In these "isolated" wetlands, water percolates out of the wetland back into the shallow groundwater systems, where it emerges once again in a down gradient wetland. This cycle can be repeated many times until eventually water is discharged into a stream and leaves the shallow groundwater system. Travel times tend to be very short in the shallow groundwater regime and water quantity and flow rate can change dramatically throughout the year and from wet years to dry years. The shallow groundwater systems discharge to wetlands in the northwest and northeast portions of the property.

Groundwater discharges to Lost Lake and Shadow Lake indicate that a deep, bedrock aquifer system may be present in the southern portion of the property. Published well logs from nearby properties indicate that this aquifer does not extend north under the property.

Wetlands

Wetland delineation has been conducted on the Lost Lakes development property with field work being completed during July and August of 2007. Technical criteria outlined in the Army Corps of Engineers (COE) Wetlands Delineation Manual (Environmental Laboratory 1987) were used to classify hydric soils, wetland hydrology and hydrophytic vegetation. A wetland must contain all three elements to be classified as a wetland.

Natural drainage features not satisfying wetland criteria were generally delineated as non-wetland waterways if they exhibited a clear bed and bank, ordinary high watermark and were generally unvegetated or were comprised of sparse hydrophytic vegetation. These non-wetland waterways are classified as waters of the U.S. when they connect to a water feature that is classified as jurisdictional by the COE. Areas where ephemeral or temporary sheet flow dispersed/diffused through vegetated uplands are not considered waterways. Final jurisdictional status for wetlands is determined by the COE and Environmental Protection Agency during the permitting process in the event the wetland is proposed for impact.

All wetland and non-wetland waterway boundaries in the project area were flagged and numbered sequentially on the ground. All flag locations were located and mapped by Stahly Engineering and Associates using survey-grade GPS. Delineated wetlands are shown on the Wetland Delineation Map (Figure 7). Twenty nine wetlands were delineated within the northern development parcel's property boundaries with brief descriptions of wetland classes provided below.

Twenty of the delineated wetlands are considered slope wetlands (WD 1-6, WD 9-21, and WD 23). Slope wetlands are characterized by the intersection of the water table with the land surface or from water reaching the surface due to hydraulic pressure. Slope gradients may range from steep hillsides to slight slopes. Principal water sources are usually groundwater return-flow and interflow from surrounding uplands. Slope wetlands lose water by subsurface and surface flows, as well as evapotranspiration. Slope wetlands may develop channels to convey excess water from the wetland.

Six of the delineated wetlands were classified as depressional wetlands (WD 22 and WD 25-29). Depressional wetlands occur in topographic depressions with closed contours that allow accumulation of surface water. Sources of water include precipitation, groundwater, and surface flow. Depressional wetlands may have any combination of inlets and outlets or lack them completely. Depressional wetlands lose water through drainage or evapotranspiration. Most of these wetlands are located in the southwest portion of the property.

Three of the wetland areas delineated were associated with streambeds and are known as riverine wetlands (WD 7-8 and WD 24) where these wetlands have water sources including streambank flow, overbank flow or subsurface hydraulic connections. At their headwaters riverine wetlands often integrate with slope or depressional wetlands as the channel or bank disappear. Riverine wetlands lose water via stream discharge during and after precipitation events, through percolation to groundwater and evapotranspiration.

Geology, Soils, and Slopes

Geology

Detailed geologic description of the Lost Lakes site is provided in the Geotechnical Reconnaissance Report prepared by NTL Engineering and Geoscience, Inc. (Appendix B). Surface geology consists primarily of Quaternary surface deposits ranging from 10 feet to 100 feet in thickness. The surface deposits consist of mixed sand, silt and clay with boulders that overlay existing bedrock. Much of the Quaternary deposits overlay bedrock of the Frontier Formation. Steeper slopes are generally supported by sandstone ledges and dacite formations.

Preliminary development clusters or planning areas were evaluated for geotechnical hazards to determine risk associated with instability in the Geotechnical Reconnaissance Report. Field investigation consisted of site reconnaissance, 13 test pits, and 15 boreholes at selected locations within the preliminary development areas. Since the Geotechnical Reconnaissance Report was produced, the planning areas have been modified to avoid areas of concern. The results are shown on the Geotechnical Hazards Map (Figure 8), which has been updated to include the currently proposed planning areas. This map delineates areas of lowest risk to highest risk of instability with green being the lowest risk and red being the highest risk.

For limited or low risk sites (green on Figure 8) the hazard evaluation recommends geotechnical investigations for foundation design and building location. For development areas with

moderate – significant risk (yellow and orange), the geotechincal investigation recommends additional site specific study in order to determine appropriate construction measures. High risk areas that would require unconventional foundation systems have been avoided. Please see Appendix B for a more detailed discussion.

Soils

Soils are mapped in the Madison County Soil Survey. The soil map unit boundaries are shown on Figure 9 with the Lost Lakes development property overlain on the image. Soils on the property consist of map units #80, #121, and #159. These soil types are summarized below. Detailed NRCS Reports are included in Appendix C.

#80 Mikesell clay loam, 15% to 45% slopes
This soil is deep and well drained and located on mountains and mountain slopes. The primary limitation of this soil is steep slopes requiring aggressive revegetation and erosion control.

#121 Shadow very channery loam, 15% to 45% slopes
This soil is deep and somewhat excessively drained and located on glacial moraines and mountain slopes. The primary limitation of this soil is steep slopes requiring aggressive revegetation and erosion control.

#159 Worock-Mikesell complex, 15% to 45% slopes
This soil is deep and well drained and located on mountain sides with the Worock soil being on the upper portion and the Mikesell being near the bottom. These soils' principal limitation is steep slopes and the Mikesell has low soil strength when wet. The soil has a slow to moderately slow permeability as evidenced by the depressional wetlands.

Slopes

Slopes have been evaluated using topographic information obtained from a photogrametric survey conducted in September of 2005. Site topography with 2 foot contour intervals is shown on the ODP (Figure 3). Slopes were identified into three ranges; 5% - 15%, 15% - 25%, and 25% and greater. Road corridors and development clusters are generally sited to avoid slopes of 25% or greater and generally consist of slopes ranging from 5% - 15% as indicated by shading on the ODP site plan. Where road corridors are required to cross slopes greater than 25%, site specific design and construction methods will be required.

Vegetation

Vegetation types at Lost Lakes were obtained from the Montana GAP analysis. The GAP analysis is a GIS based study performed by the University of Montana that mapped vegetation land cover types into 50 classifications across the state in the mid to late 1990s. Land cover types were selected based on similarities between vegetation, physical environment and wildlife habitat. Although the mapping is conducted at a fairly large scale, which may not identify cover types that occupy small areas, it does provide information on the dominant vegetation zones across the property. Further refinement of vegetation zones has been conducted using past and recent aerial photos and field visits. A map showing vegetation zones is included in Figure 10 to the right.

Three predominant vegetative land cover types exist at Lost Lakes. These are Montane Parklands and Subalpine Meadows, Douglas-fir/Lodgepole Pine forest, and Mixed Subalpine Forest.

Figure 10. Predominant vegetation types

Logging conducted by previous landowners has modified much of the vegetation at Lost Lakes. Due to the removal of forest vegetation most of the property was classified as Montane Parklands and Subalpine Meadows. Older aerial photos show forest over nearly all of the property, indicating that the mapped meadow vegetation is successional to eventual forest cover. Since mapping, much of the logged areas have experienced significant lodgepole pine regrowth. These areas have been modified on the vegetation map to a Lodgepole Pine Regrowth zone, and are transitional to a Douglas-fir/ Lodgepole Pine forest zone. A portion of the logged area in the northwest corner of the property is dominated by meadow vegetation with only a few trees. This area has little active forest regrowth and will likely be dominated by meadow vegetation for a long period.

Forested portions of the site that have not been logged consist of mature stands of Douglas-fir/Lodgepole Pine and Mixed Subalpine Forests. Both forest zones have a mix of Douglas-fir and Lodgepole pine. The Mixed Subalpine Forest zone is defined as having greater than 10% subalpine fir in addition to the Douglas-fir and Lodgepole Pine. Mature forests consist of

significant downfall consisting of earlier growth Lodgepole Pine that is being succeeded by fir species of varying ages.

As of this writing the property has not been assessed for the presence of noxious weeds. However, those weeds known to inhabit the area include Canada thistle, musk thistle, spotted knapweed and field scabious. A noxious weed management plan will be prepared along with the first preliminary plat application, submitted to the Madison County Weed Board for approval and implemented prior to final plat approval as per the requirements of the Madison County Subdivision Regulations. It is anticipated the plan will require the Lost Lakes Development Company to control existing weeds and those related to exposed soils during and after construction. Landowners will be responsible for their lots, road sides and common areas.

Figure 11. Indian paintbrush, lupine, wild rose and other wild flowers can be found in summer throughout the meadows on the Lost Lakes property.

Wildlife and Wildlife Habitat

Wildlife Biologist Tom Olenicki of Trail Creek Wildlife Planning prepared a detailed Wildlife Assessment (Appendix D) for the Lost Lakes ODP. Mr. Olenicki prepared the Wildlife Assessment in two phases. The first phase is a preliminary assessment, which he submitted to the Montana Department of Fish, Wildlife and Parks, USDA Forest Service and Interagency Grizzly Bear Study Team for comments and recommendations. The second phase is a final analysis. The following is a brief summary of Mr. Olenicki's primary findings. Additional findings, recommendations and descriptions of how the recommendations have been incorporated into the project are included in the Summary of Probable Impacts section of this document.

General

A wide range of wildlife species occur in the area due to the physical environment and location near Yellowstone Park, 2 sub-units of the Lee Metcalf Wilderness, and other USDA Forest Service lands. However, little is known about the effects of development on wildlife and how these effects can be reduced. Most people agree high density urban and suburban

development does not provide good wildlife habitat, but land managers, public officials, and even scientists cannot agree on the thresholds or the degree at which rural development begins to impact the landscape (Saving and Greenwood 2002).

Specific information is known such as flushing distance for elk (Schultz and Bailey 1978, Cassirer et al. 1992) and mule deer (Freddy et al. 1986), and housing densities that may preclude habitat use by mule deer and whitetail deer (Voegel 1989). Alteration and elimination of native vegetation due to road building, house construction, and landscaping obviously result in direct loss of habitat. Fences may prevent movement and wildlife mortality may occur from animal/vehicle collisions along roads. Buildings and roads create a zone of disturbance around them that indirectly impacts habitat quality. Even seemingly benign activities such as hiking or cross-country skiing may cause wildlife to take flight and incur higher energetic costs. The disruptive effects of human development only increase as the number of houses, roads, and people increases. Much of the information available on the cumulative effects of development and habitat fragmentation are based on theory with little application to real landscapes. Nonetheless, science offers very little consensus opinion to land use planners on the quantity and locations of habitat patches to conserve or how to plan and design corridors to deal with these issues (Kennedy et al. 2003). The lack of definitive knowledge or methods to address the topic often results in subjectivity that is left to planners, planning boards, and county commissioners to sort out.

Species of Most Important Consideration

Canada lynx are currently the only species receiving full protection under the Endangered Species Act that may occur on Lost Lakes and the surrounding area. Other species of special consideration that are known or expected to occur include wolverine, olive-sided flycatchers, gray wolves and grizzly bears. Of these species, grizzly bears are probably the primary species of concern due to the potential for human conflicts and habituation to human food sources. Northern goshawks and flammulated owls may use nearby habitat but current use of Lost Lakes may be low at this time due to recent logging. Other focal species that can be expected to use the site and immediate area under current vegetative conditions are include elk, moose, deer, boreal toad, marmot, black bear, peregrine falcon and bald eagle.

Wildlife Connectivity

The property is located near a probable connectivity route along the South Fork of Jack Creek. Figure 12, below, shows the probable wildlife movement route approximately 500+ feet to the west of the Lost Lakes property. The green line indicates the centerline for connectivity, while actual movement occurs within an unknown distance on each side of the line. Under current conditions, more secretive species would be expected to use the area within a narrower distance of the green line due to the denser forest near the creek. As forest cover increases in logged areas over time, distance from the green line would be expected to increase. The Lost Lakes development is not expected to inhibit wildlife movement in and around the wildlife corridors established in Moonlight Basin Ranch. The numbers (1, 2 and 3) on Figure 12 indicate

locations from which additional photos were taken. The additional photos are located on page 43 and 44 of the Wildlife Assessment.

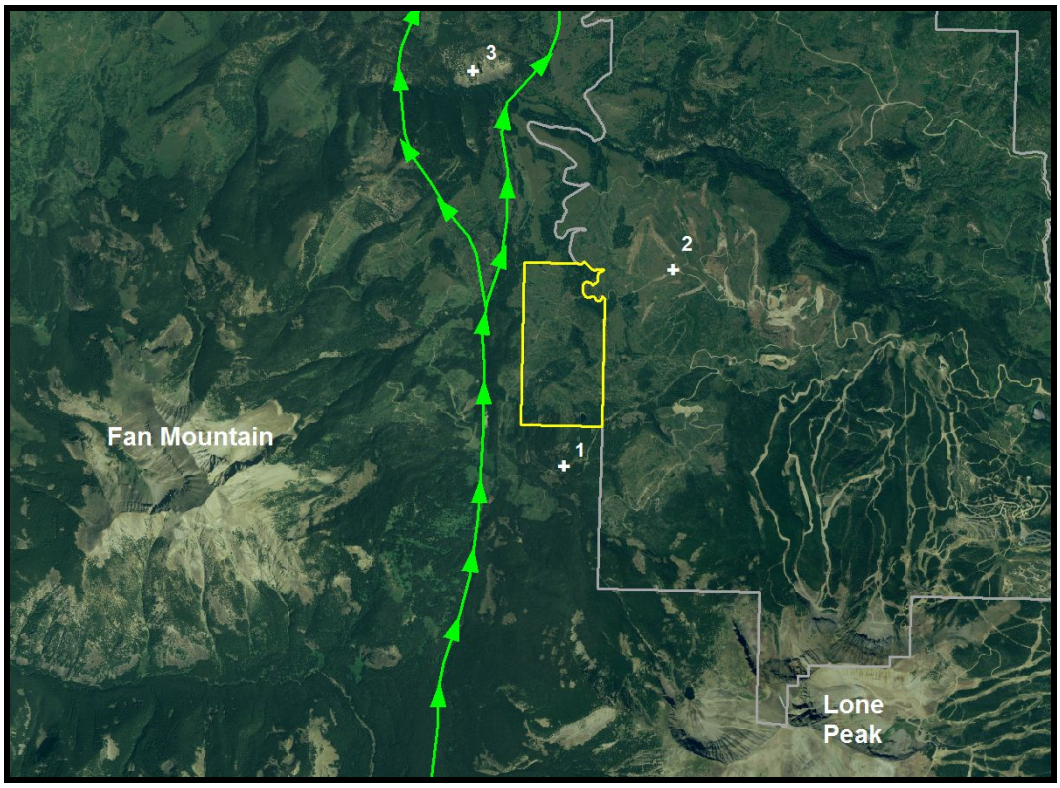

Figure 12. Potential Wildlife Connectivity Route
Along the South Fork of Jack Creek

Habitat Value

Much of the property and surrounding area is in a disrupted state from recent logging. Many wildlife species utilize the area, but the potential to support indigenous wildlife is currently lower than if it was unlogged. The property may provide some habitat for lynx but would not be considered critical habitat for lynx or for the survival or viability of any other wildlife species.

Existing Human Development

The property is located adjacent to an area of high projected development at Moonlight Basin. It is the last anticipated development in the upper Jack Creek drainage due to the amount of public land and land with conservation easements (see Figure 1).

Direct Effects

As with all development, the proposed plan will result in a direct loss of wildlife habitat within development envelopes and along road corridors. Habitat loss will cover ~41% of the

development property, but only ~20% of the total Lost Lakes area. None of the habitat that will be lost is considered critical or uniquely important habitat in its current or climax vegetation condition. Most use by wildlife is seasonal due to the amount of snow that accumulates during winter. Therefore, direct habitat loss will have the greatest effect on small mammals and amphibians that rely on the area year-round. Use by many species that use the area seasonally will be displaced to surrounding areas.

Indirect Effects

Disturbance created by development will create indirect effects on wildlife beyond the building envelopes and road corridors where direct disturbance occurs, both within the property boundary and beyond. Effects will also be most pronounced outside the winter months when heavy snow accumulation limits use of the area by wildlife.

The initial construction period for roads and other infrastructure will probably create the highest amount of overall disturbance resulting from operation of equipment and material deliveries. Subsequent construction of dwelling units will create more localized activity. The summer construction season is therefore the time when the highest magnitude of disturbance is expected. This should decline to a steady level as full buildout approaches. Disturbance should also extend to a greater distance under current logged conditions. As the forest regenerates and matures, the increased number and size of trees will cause sight, sound, and smells of human activity to decline at a faster rate over the same distance.

Indirect effects created by development vary by species and individuals within species, but is always detrimental in the long term for maintaining functional wildlife populations. Many wildlife may abandon preferred habitat, alter routes of connectivity, and incur higher energetic costs when they take flight in response to human presence. Adult male grizzly bears may cause females with cubs and sub-adults to use less secure sites, feed closer to humans, or use sites close to humans simply as a refuge from adult males (Mattson 1990). Although this may be mistaken as beneficial, any situation that brings bears closer to humans increases the potential for human-bear conflicts and habituation of bears that often leads to their destruction.

Disruption of connectivity through the South Fork of Jack Creek is a concern with the development of Lost Lakes. The topography of the area creates a natural funneling effect for connectivity centered along the South Fork of Jack Creek (Figure 12) that cannot simply be displaced further west if the entire area was developed. Specific connectivity requirements are poorly understood, but wildlife typically utilize even sub-optimal habitat for connectivity. In this situation, forested habitat exceeding a width of 1 km at the narrowest point remains beyond the projected distance for indirect effects, which will allow wildlife to continue to use the South Fork corridor. Combined with the lack of development along the Lone Creek drainage maintained by Moonlight Basin, total connectivity may be reduced but not eliminated. Future connectivity should be maintained as long as additional development does not occur west of Lost Lakes and the Jack Creek road is not improved and opened to public use.

Cumulative Effects

Cumulative effects ultimately have the greatest effects on wildlife. They are relatively easy to assess when looking back in time but difficult to predict in relation to future actions. While each and every development results in only a small amount of habitat loss due to direct and indirect effects, the accumulation of these losses adds up over time. Lost Lakes adds to the amount of habitat lost from development in Madison County but is not expected to cause additional development or increase the current rate at which wildlife habitat is lost. It is a relatively small development compared to the larger resorts in the area and likely the last property that will be developed in the upper Jack Creek Drainage. It is therefore unlikely to cause or draw additional development to Big Sky or Madison County the way Big Sky Ski and Summer Resort and the other large resorts have and will continue to do so.

From a species standpoint, Lost Lakes will probably have the greatest cumulative effects on grizzly bears and wolverine. Both of these species are limited in their population levels and distribution compared to elk, deer, and other abundant, wide-ranging species. However, there is nothing uniquely important about the location of Lost Lakes.

Specific recommendations for mitigating the impacts to wildlife and wildlife habitat are presented in the Summary of Probable Impacts section of this report. As stated in that section, LLDC intends to comply with all of Mr. Olenicki's recommendations.

Historical Features

Archeologist David Ferguson of GCM Services, Inc. conducted an on-site investigation and prepared a Cultural Resources Review for the Lost Lakes development property (Appendix E). Mr. Ferguson's report evaluates the site's characteristics and the likelihood of the property to contain historical, cultural and archeological resources. The report indicates the project area can only be classified as having low potential for archaeological remains. According to Mr. Ferguson, "The project parcel is essentially a mountain slope, gently sloping to be sure, but not located on a moderate to high potential landform such as a major drainage, a pass, a saddle or ridge top. No lithic resources materials are present. The area is summer range for elk, but not a rich game producing area in terms of a prehistoric context. There are a couple of very small kettle ponds in the parcel, but these are not significant bodies of water and are not considered to contribute to archaeological potential of the area as a whole."

In preparation of this environmental assessment, a letter requesting review was sent to Damon Murdo, Cultural Records Manager with the Montana Historical Society. No response has been received to date.

COMMUNITY IMPACT REPORT

Water Supply

While suitable aquifers may exist under portions of the site, the heterogeneity in the aquifers under the Lost Lakes development property does not provide a continuously available water supply. Due to the proximity of the Treeline Springs community water system and its ability to provide large fire flows, extension of the water system is the most practical water supply system for the Lost Lakes development.

Water supply and fire protection is proposed to be an extension of the Treeline Springs water mains from the Moonlight Basin Ranch Front 9 PUD, currently under Montana Department of Environmental Quality (MDEQ) review. Treeline Springs is a privately owned public water and sewer utility serving the Moonlight Basin Ranch property (PWSID #4023). As stated in the attached letter of review (Appendix F) Treeline Springs will provide water service to Lost Lakes. The proposed water supply system improvements and connections from the Treeline Springs system are shown in the Water and Sewer System Master Plan (Figure 13).

While extension of the Treeline Springs water supply clearly the preferred alternative, please note that if for some reason extension is not practical or possible, another water supply would have to be found. This most likely would consist of individual and/or community type water system(s). All new water supply system improvements will be reviewed by the MDEQ as required for all future subdivisions. Similar to municipal extensions, the costs of installing the water system improvements are to be financed by the Lost Lakes Development Company and upon final certification of the improvements, Treeline Springs will assume the responsibility of operating the system.

Domestic Water Use		
Maximum Total Number Units	162	units
Average Day Use per Unit	200	gpd/unit
Average Day Use	32,400	gpd
Maximum Day Use per Unit	400	gpd/unit
Total Maximum Day Use	64,800	gpd
Annual Use	36.3	acft
Landscape Irrigation		
Total Number Units	162	units
Maximum Landscape Area per Unit	4,000	sf/unit
Maximum Landscape Area	14.9	acres
Maximum Landscape Use (90 day season)	76,296	gpd
Annual Use	21.1	acft
Maximum Daily Flow	118,416	gpd
Total Annual Use	57.4	acft

Table 2. Total Water Use Estimate

Note: Maximum day flow assumes 65% domestic occupation and 100% irrigation use.

Water use data obtained from the Treeline Springs Water System Engineer's Report to MDEQ (Front 9 Phase 2 MDEQ Submittal, June 2008) shows an average flow of 200 gallons per day per home with a maximum day flow of 400 gallons per day per home. The variable water use corresponds to the seasonal occupancy nature of "ski and summer resort" developments in which maximum occupancy is observed in the winter months around the Christmas and spring break holidays. A second and smaller water use peak occurs in summer months. When the resort matures it is expected that maximum summer occupancy will be around 65% of winter occupancy. Typical fall and spring "off-season" periods are low flow periods where occupancy is significantly reduced.

Building trends in the Big Sky area have attempted to blend development with the existing natural environment and the Lost Lakes development is a continuation of this trend. Typical developments place a small buffer or defensible space of irrigated landscape around homes and then leave the remaining portions of lots in their natural state. Due to this natural development trend typical irrigated landscape area averages around 4,000 square feet per unit with larger lots have slightly more irrigated area and more densely clustered cabin or condo lots having less irrigated area. Data from the Water System Report shows irrigation water use is approximately 17" of irrigation applied over a 90 day irrigation season (second week of June through the second week of September). Based on this water use data, estimated water use at Lost Lakes will be a maximum flow of 82.2 gallons per minute (gpm) during the summer. Annual water useage is 36.3 acre feet (acft) for domestic use and 21.1 acft for irrigation use. This flowrate corresponds to a volume of 57.4 acft of water per year as shown in Table 2.

Wastewater Treatment

Wastewater treatment for the Lost Lakes ODP is proposed to be provided by extensions from the Treeline Springs wastewater collection system proposed in the Front 9 PUD, which extends the existing Treeline Springs sanitary sewer system. While the few larger estate lots may have locations suitable for on-site treatment, the proposed densities of the development clusters are not well suited to individual on-site treatment systems. Due to the proximity of the Treeline Springs community wastewater collection system and treatment facility, extension of the sewer system to serve Lost Lakes is the most practical and economical method of wastewater treatment and Treeline Springs has provided a letter agreeing to provide wastewater treatment service.

Proposed sewer collection for Lost Lakes consists of gravity sewer mains either connecting directly to the Treeline Springs sewer mains or to a lift station in the north portion of the property that discharges to the Treeline Springs lift station located below the Front 9 PUD. Proposed sewer mains in Lost Lakes are generally located in roadways and ski runs. A preliminary sewer system layout is included on Figure 13, which shows preliminary sewer main alignments, connections to the Treeline Springs system and proposed lift station location.

Wastewater flows are expected to be the same as water use without irrigation demand. An average daily flow of 32,400 gpd is expected at the development's maturity. A maximum daily flow of 64,800 gpd is expected to occur in the summer months. A maximum winter flow is expected to be 65% of the maximum summer flow.

While extension of the Treeline Springs wastewater treatment system is clearly the preferred alternative, please note that if for some reason extension is not practical or possible, another suitable wastewater treatment option would have to be found. This most likely would consist of individual and/or community type wastewater system(s). All new sewer system improvements will be reviewed by MDEQ as required for all future subdivisions. Additionally, connection authorization from Treeline Springs will be obtained prior to MDEQ review. Similar to municipal extensions, the costs of installing the sewer system improvements will be financed by the Lost Lakes Development Company and upon final certification of the improvements, Treeline Springs will assume the responsibility of operating the system.

Solid Waste

The Lost Lakes development will utilize a private solid waste collection area centrally located on the Lost Lakes property. Due to the Lost Lakes development's location in bear country curbside pickup is not suitable and extra provisions are necessary to prevent exposing wildlife to solid waste stored at individual residences and left outside for collection. Bear-proof trash containers are proposed to be kept inside at every residence until being transported by the homeowner to the centrally located solid waste collection area. No on-site disposal of waste shall be allowed on the Lost Lake development.

The solid waste collection area will consist of a compactor fed bear-proof container that can be replaced with empty containers as needed. A local waste collection service will be contracted to operate the compactor and transport compacted waste to the local landfill. It is possible that Lost Lakes and Moonlight Basin Ranch may find one centrally located solid waste area that may be appropriate to collect solid waste produced by development in the western portion of Moonlight Basin Ranch as well as Lost Lakes. In order to encourage recycling efforts, Lost Lakes will seek to partner with Moonlight Basin to utilize their existing recycling facilities.

Drainage

Storm drainage at the Lost Lakes development is divided amongst proposed ski runs and development areas. Storm drainage for the ski area is regulated only during the construction phase since there is negligible impact once ski runs are revegetated. The development area will contain impervious roofs and roadways that can change storm drainage patterns and flow rates. These changes are regulated both in the construction and post-construction phases. Because of the sloped terrain, flooding hazard is low. The most significant concern with storm drainage for Lost Lakes will be erosion and sediment transport caused by runoff which could cause water pollution if not properly treated.

Before any new construction commences at Lost Lakes, a MDEQ permit for "Stormwater Discharge Associated with Construction Activity" must be obtained. The annual permit will describe a Stormwater Pollution Prevention Plan (SWPPP) that utilizes various Best Management Practices (BMPs) that are used to prevent erosion and water pollution during and after construction and to establish final vegetation after construction completion. Typical BMPs include silt fence, water bars, detention basins, erosion control fabric, and final seeding. These BMPs aid in preventing erosion, removing sediment from runoff, and slowing the runoff rates, while final seeding will reclaim and stabilize disturbed soils further reducing erosion.

In addition to the construction storm water permit described above, future phased development at Lost Lakes will have permanent storm water improvements evaluated by MDEQ during the subdivision review process. Paved roads and buildings are known to increase runoff rates and volumes within development areas and the MDEQ targets mitigating these effects. The use of culverts and drainage ditches along roadways, in addition to constructed drainage swales, will route stormwater to detention basins that are sized to accommodate the expected flows. The detention basins allow for a settling time in which sediment can settle from the storm flows before exiting the basin or percolating through the soil. Sediment is then regularly removed from the detention basins to maintain proper capacity of the basin.

Roads

Access is provided to Lost Lakes by existing public and private roads. Lost Lakes is accessed by crossing the Moonlight Basin Ranch property through public access easements and rights-of-way. This access consists of Moonlight Boulevard for year round traffic and the South Side Road for summer and emergency access. The Moonlight Basin entrance is accessed from the east by Lone Mountain Trail, a 32-foot wide, paved Madison County road which is an extension of State Highway MT 64. The entrance was reconstructed in the summer of 2008 with the installation of a roundabout, greatly improving the safety of the Moonlight Basin entrance intersection. The South Side Road provides emergency egress to the north, connecting to the Jack Creek Road. Jack Creek Road, a private, gated road from Ennis provides year-round secondary access from the west.

Roadway Design Standards

Proposed access roads to development areas shown on the ODP are in large part an expansion of existing logging roads. The proposed roadway design standards meet Madison County and AASHTO standards for design and safety. The roads are proposed with a 24' paved surface with 3'-4' wide shoulders, a 3% crown, and 2' deep roadside ditches. Cut and fill slopes connecting the road section to the existing ground are to be sloped at no more than a 3:1 slope (horizontal: vertical). A conceptual road section is included as Figure 14.

Roadways crossing slopes where 3:1 back slopes are not feasible will be retained. Retaining walls on cut slopes will be located 25' to 27' from the roadway centerline to allow for both drainage and safe sight distance. Retaining walls may be stepped to allow safe sight distance if

necessary. Retaining walls on fill slopes will be located a minimum of 16' from the roadway centerline with a guardrail located a minimum of 14' from the roadway centerline or 2' from the edge of the paved roadway surface. A figure depicting a conceptual road cross section using retaining walls is also shown in Figure 14.

Roadway grades in Lost Lakes will be limited to a maximum of 10% and a minimum of 0.5%. The maximum design grade within 100' of any intersection shall be 4%. The proposed maximum and minimum grades provide for safe driving roadways in winter conditions and provide for adequate drainage of the roadways during storm events.

The mountainous terrain typical to Lost Lakes required that a maximum design speed of 25 miles per hour (mph) be considered in roadway design with roadway corners and lengths of roadway with limited stopping sight distances having speed limit restrictions as required. Design rates of vertical curvature (K_{min}), Sight Stopping Distances (SSD) for vertical curves are shown for 25 mph and 15 mph roadways in Table 3, below.

Table 3. Road Design Speed and Curve Specifications

	CREST VERTICAL CURVE		SAG VERTICAL CURVE	
15 MPH	K_{min} = 3	SSD = 80'	K_{min} = 10	SSD = 80'
25 MPH	K_{min} = 12	SSD = 155'	K_{min} = 26	SSD = 155'

The layout of roadways in Lost Lakes generally follows natural topography at design grades to be cost effective. Roadways will have a minimum horizontal curve radius of 200' in 25 mph reaches and 70' in 15 mph reaches. A maximum superelevation of 4% will be used on curved lengths of roadway to offset centripetal forces on roadway drivers.

Culverts will be used to allow natural and new drainage paths to cross roadways and intersections. Culverts will be designed in accordance with Madison County and DEQ regulations.

Proposed roadway improvements are to be financed by the developer. Upon construction completion and acceptance the ownership of the new roadways will be transferred to the Lost Lakes Homeowners Association. Costs associated with ownership of the roadways include the regular inspection of, maintenance of, and removal of snow from the roadways and maintenance of drainage structures.

Traffic Generation

The Lost Lakes development will consist mostly of recreational homes given that very few of the homes are anticipated to be used as year round residences. Traffic Engineer Bob Marvin, P.E.,

of Marvin & Associates conducted a traffic impact study (TIS) showing that at full build-out the 162 unit development would produce approximately 512 weekday trips on average. These trips are external to the development and would be seen at each of the Lost Lakes access points. The TIS considered the effect of Lost Lakes on the local road network, specifically Highway 64 that connects Highway 191 to the Big Sky Mountain Village and is included as Appendix G.

Roadway Capacity and Impact Mitigation

The TIS determined that the roadway network would experience no significant impact to capacity along Highway 64 when compared to the existing capacity of the road. An increase in average daily trips would only be significant (greater than 10%) on the portion of Highway 64 west of Big Sky's Meadow Village at today's traffic volumes. The most substantial increase in traffic volume would be seen west of the Dam Road intersection with Highway 64 in the Mountain Village.

The TIS considered the Highway 64 corridor as two segments for impact mitigation purposes; the section west of Little Coyote Road and the section to east of the road. The eastern segment of Highway 64 is currently functioning as an urban arterial street. The improvement of intersections with Ousel Falls and Little Coyote Road (eastern intersection) will be required due to the continued development and construction of the Town Center. Also, the eastern portion of Highway 64 will need to be improved to include two-way left turning lanes along the length of the corridor, traffic signals, and possibly a roundabout to improve the capacity of the road. The TIS recommends that Lost Lakes be assessed for a proportionate share of the improvement of the corridor while the improvement of the two specific intersections be assessed to the nearby developments generating the traffic that reduces the level of service of the Ousel Falls and Little Coyote Road intersections.

The second analyzed segment of Highway 64 running between the western Little Coyote Road intersection and the end of the highway is a mountainous scenic highway with several intersections along its length. The TIS determined the geometry of the highway is the greatest constraint on the free-flowing travel speed of the road due to steep grades, limited sight stopping distance, and limited passing sight distances. The improvement of the horizontal and vertical curvature of the highway would be costly and may not improve the overall value of the scenic mountain highway. Smaller improvements are suggested in the TIS that would improve the overall capacity and safety of Highway 64. The introduction of auxiliary turning lanes at intersections would provide benefits in both the capacity and safety of the road. Climbing lanes could also be introduced on the steeper grades, also improving the capacity and safety of the highway. A detailed cost/benefit analysis should be completed before improvements are made to the western portion of Highway 64, but Lost Lakes should be assessed a fair portion of any warranted improvements to the western segment of the highway.

Utilities

Utility providers have infrastructure in place at Moonlight Basin Ranch for power, cable television and phone. Other utilities such as natural gas are not available in Big Sky. As part of the agreement between Moonlight Basin Ranch and Lost Lakes, Moonlight Basin will extend utilities to the edge of the Lost Lakes property. Local utility providers have been contacted regarding service to the new development. In a letter of review dated July 22, 2008 (enclosed) Engineering Supervisor Larry V. Meyer of 3 Rivers Communications stated his company will be able to provide telephone services once the existing facilities have been extended to the development.

Phone and power utilities have been installed to existing developments and ski area facilities in Moonlight Basin Ranch. Once to the edge of the property, phone, cable television and power will be installed underground and paid for by the developer. Underground propane tanks are usually installed near individual buildings. Utility extensions for each future subdivision phase typically occur immediately after water and sewer mains are installed, and prior to road paving.

Emergency Services

Fire Protection and Ambulance Service

Blackbull Wildfire Services produced a Wildfire Risk Evaluation and Mitigation Plan for the Lost Lakes ODP submittal (Appendix H). Much of the following discussion is based on the findings and recommendations in that report.

The property is currently not located in a structural fire protection district. The closest fire district is the Big Sky Fire Department, which is part of the Gallatin Valley Consolidated Fire Protection District. The Big Sky Fire Department has two stations, one at Mountain Village, which is generally unmanned, and one at Meadow Village that has a combination of paid and volunteer fire and emergency medical responders on hand. During a personal interview on July 15, 2008, Chief Jason Revisky estimated a response time for fire and ambulance personnel at +/- 15 minutes. In his August 13, 2008 letter of review, Madison County Emergency Management Director Christopher W. Mumme estimated a weather dependent response time of 20-30 minutes.

Portions of Moonlight Basin Ranch are protected by the Big Sky Fire Department. However, the portion of Moonlight Basin immediately adjacent to the Lost Lakes property has not yet been annexed into that fire district, and Montana statute (7-33-2125, MCA) prohibits non-adjacent properties from being annexed into a fire district, so Lost Lakes will not be able to apply for annexation until the remainder of the Moonlight Basin property is annexed. It is expected that as Moonlight Basin is developed, those areas will be annexed into the fire district, which will enable Lost Lakes to annex as well. The annexation agreement between Moonlight Basin and the fire district includes a satellite fire station with employee housing, which Lost Lakes should also proportionately contribute to in the event one is built.

The Big Sky Fire Department provides fire suppression, advanced and basic life support and transport, rescue, hazardous material response and other services. The department has an impressive array of response equipment, including 3 engines/pumper trucks, 2 water tenders, 1 ladder truck, 1 brush truck, 1 mini-pumper, 3 ambulances and 3 command vehicles. According to Chief Jason Revisky, the department has an average of 15 active volunteers and 8 paid personnel, almost all of whom have either EMT Basic or Paramedic certifications. During a December 24, 2008 telephone conversation with Chief Revisky, he stated approximately 70% of the department's effort is providing medical response and transport services.

Figure 15. Photos of the Fire Station at Meadow Village (left) and Mountain Village

Wildfire protection in the area is currently provided by the US Forest Service. The nearest wildfire suppression resources include a Type 6 wildland engine and a helicopter with crew, both located at the Shenango Helibase in the Gallatin Canyon, east of the Lost Lakes property.

Some areas of the property have been subject to clearcut timber harvest, with the residual logging slash burned. These areas have now regenerated with 10-20 foot tall conifers, mostly Lodgepole Pine; there are also smaller numbers of grand fir, Douglas-fir, Englemann Spruce and subalpine fir in the area. These areas have little residual ground fuels since the timber harvest activity, appear to be healthy at this time, and generally are considered to be a low risk for active fire behavior except under the most extreme fire weather conditions. They are, however, densely stocked, providing a continuous fuel source and inter-connected crowns.

Other areas of the property have been selectively logged over the past 30-50 years. These areas have a residual overstory of conifers with an in-growth of conifer reproduction. Many of the older trees in the stand are mature or over-mature, with some mortality occurring. In addition, there is a heavy accumulation of logging slash and natural fuels on the forest floor that dry out during the fire season and will support active wildfire spread. There are also areas adjacent to the access roads where unutilized woody material was left untreated during timber

harvest activities that remain a fire hazard. These stands can be described as having an overall fire potential of "Moderate".

Unwanted wildfires on the Lost Lakes property do not appear to have ignited in recent history; there is no sign of any fire activity, and the US Forest Service Dispatch Manager in the Dillon Interagency Coordination Center reported no lightning or human-caused fire ignitions during the past 12 years. The risk of wildfire impacting this property will more likely come from fires that ignite off of the site and burn onto the property: both the surrounding private land, and the National Forest lands to the southwest have vast tracts of forested land where a fire could ignite and then spread onto Lost Lakes. Because of the high elevation of the area, and the relatively short (2-3 month) fire season, such a threat is unlikely during most years.

Blackbull Wildfire Services found the proposed grades, widths, clearing limits and lot layout to meet all current standards for emergency response vehicles. The main access roads from both the east and west will enable egress from the area in two different directions for residents in the event of a wildland fire, consistent with the specifications in the National Fire Protection Association (NFPA) publication 1141, *"Standard for Fire Protection Infrastructure for Land Development in Suburban and Rural Areas"*.

In accordance with the recommendations of Blackbull Wildfire Services, the Lost Lakes Development Company intends to carry out the following fire prevention and protection measures:

1. When the portion of the Moonlight Basin property adjacent to the Lost Lakes property is annexed into the Big Sky Fire District, the Lost Lakes Development Company also plans to request annexation into the fire district. If annexation is not possible at the time of final plat recording for the first phase of development, the developer will seek to contract with the Big Sky Fire District.

2. Section 4.7 of the Covenants, Conditions and Restrictions (CC&Rs, Appendix I) for the project includes a number of fire protection provisions (pages 13-15). Section 4.7.4 states, "All structures shall be constructed in compliance with the most current edition of applicable NFPA standards (specifically NFPA 1141, 1142, and 1144) and fire protection standards set by the Fire Department, including use of building construction materials and practices as indicated in the 'FireWise' guidelines where ever possible to help minimize the risks of structural ignition from wildfires." Please note the CC&Rs also mandate that all construction plans be reviewed by a Design Review Board whose purpose is to ensure compliance with the adopted architectural and building standards.

3. All residence and other inhabitable structures will follow the NFPA 13 standard for installation and operation of sprinkler systems.

4. The design of roads, hydrant systems and other infrastructure will follow the guidelines in NFPA 1141.

5. During construction of residences and other structures, Section 4.7.5 of the CC&Rs requires enforcement of the following requirements:

   a. Smoking by workers shall not be permitted on the construction site;
   b. During periods of high fire danger, require "watchman services" are required for 2-3 hours after the completion of construction activities for the day;
   c. During periods of "Very High" and "Extreme" fire danger ratings, owners may be required to have a Type 6 wildland fire manned by a wildland fire contractor on site.

6. Specific fuels reduction measures, such as the creation of defensible spaces around homes, thinning fuels along roadways and removing all dead and dying trees within 100 feet of structures are included in the CC&Rs.

7. Specific requirements for the prominent display of house numbers, Class A roofing materials, non-combustible street signs and other measures are also included in the CC&Rs as recommended.

Law Enforcement

Law Enforcement is provided in the Madison County portion of the Big Sky area through an interlocal agreement with Gallatin County, which provides five officers in Big Sky, two of whom are deputized by and paid for by Madison County. According to Madison County Sheriff Dave Schenk, Madison County is satisfied with this arrangement but hopes to have a greater presence in Big Sky in the near future. Sheriff Schenk stated during a telephone interview on December 24, 2008 that he and the County Commissioners are planning to expand their capacity in the Big Sky area. He stated one of the biggest obstacles to expanding service is employee housing, and long range plans are being made with Moonlight Basin Ranch and possibly other developers to help the Sheriff's Office in a manner proportional to the expected impacts. Sheriff Schenk indicated his long range goal is to provide three deputies and one sergeant in the area. The Lost Lakes Development Company would be expected to assist this effort in a proportional manner as the ODP comes to fruition.

In his August 13, 2008 letter of review, Madison County Emergency Management Director Christopher W. Mumme estimated a law enforcement response time of 20-40 minutes, depending on the weather.

Education and Busing

Students residing in the development would typically attend Ophir Elementary School, which is located approximately 17 miles from the property and provides K-8 education. According to Ron Downer, School Bus and Facilities Supervisor, the Ophir School District serves approximately 170 students. Due to the low number of students "up on the mountain" bus

service is not currently available. The district provides a transportation stipend to individual families who transport their children to school. During a telephone conversation on January 5, 2009, Mr. Downer indicated that if more children eventually move into this area, a bus route could be established. Mr. Downer stated that beginning in the fall of 2009, Lone Peak High School will provide public school curriculum for grades 9-12.

Based on occupancy trends within the existing Moonlight Basin Ranch subdivisions, the homes within the Lost Lakes ODP are expected to be occupied seasonally and generally by older couples without school age children. Out of the maximum 162 homes to be developed over the next 10-20 years, no more than a handful of school age children are anticipated. According to the Madison County Growth Policy, 54% of Madison County's residential property owners list a permanent address outside of Madison County. Due to the location and value of lots in Lost Lakes it is likely that most lot buyers will be second home/seasonal residents. The Madison County Growth Policy also states the Big Sky community provides 37% of Madison County's tax base and 57% of this revenue goes directly to education.

Letters requesting review were sent to the Ophir School District and Madison County Superintendent of Schools but no written response has been received.

Land Use

The general ownership and land use map (Figure 1) shows the Lost Lakes property relative to nearby properties. The northern development tract borders existing development and conservation land. Adjacent ownership includes the Jack Creek Preserve Foundation to the north and west, which consists of approximately 4,200 continuous acres of land, the vast majority of which is under conservation easement, and Moonlight Basin Ranch, LP an 8,000+ acre development property to the east which contains several existing and proposed subdivisions, a ski area, golf course and supporting commercial and operating facilities. The Lost Lakes conservation property is bordered to the south by USDA National Forest land.

The subdivision is not located near an incorporated city or town and the property is not zoned. The Madison County Subdivision Regulations and Growth Policy are the land use regulations covering the area. The Big Sky area is mentioned in the Madison County Growth Policy as a resort community "clearly slated for continued growth." An evaluation of compliance with the five guiding principles of the Madison County Growth Policy follows.

1. Locate new development close to existing services and communities

The Lost Lakes ODP is located in the unincorporated Big Sky area. The 2000 U.S. Census (the most recent population data available for unincorporated areas) shows Big Sky as having a population of 1,221 residents, which is larger than any other community in Madison County, including Ennis (population of 840 in the year 2000, estimated at 1,013 in 2007).

Big Sky has all of the services and amenities a person could want. The developer intends to extend public water and sewer resources, power, cable TV and telephone, and hopes to annex the development property into the Big Sky Fire District. The developer also intends to participate in efforts to increase the presence of the Madison County Sheriff's Office in the area over time in conjunction with other developers. Because Big Sky is an existing community and this is essentially an expansion of Big Sky, the Lost Lakes ODP complies with this guiding principle.

2. Protect our river corridors

The closest major body of moving water is the South Fork of Jack Creek, which is located to the west of the property at a distance of between 500-1,000 feet. The property does contain some small stream segments, wetlands and ponds. The developer has identified planning areas where all structures will be located and has volunteered to require all structures be located at least 100 feet from any water body. The proposed conceptual stormwater and erosion control measures are widely accepted. As the entitlement and development process continues, detailed plans for stormwater and erosion control will have to be developed and approved by MDEQ and a general stormwater permit for site disturbance will also be required. At this early stage, the proposal complies with the above guiding principle.

3. Preserve our most productive agricultural lands

The property does not contain and is not located in the vicinity of highly productive agricultural lands.

4. New development should pay its own way

The Lost Lakes Development Company intends to pay for the costs of extending public water, sewer, roads and trails and has proposed to provide fire and police protection resources to the extent possible at this time. Road maintenance and solid waste disposal costs will be borne privately. The taxes generated from the additional units are expected to be great and the demand on public safety and school resources are expected to be minimal. So long as Lost Lakes pays a proportionate share of improvement costs related to external, public roadways, fire and police protection, this project should more than comply with this guiding principle.

5. Respect private property rights

This project does not appear to infringe upon the property rights of any other landowner. In fact, when the current owner purchased the property from the previous one, the sale price was based on the fact that there were no restrictions such as conservation easements or other privately imposed development limitations attached to it.

USDA Forest Service lands are located very close to the Lost Lakes property and a hiking trail that continues past Shadow Lakes is currently located on the property (Figure 16). An

easement for this trail is in place. The developer may seek to work with the Forest Service to relocate this trail and absorb the cost to do so.

There are no known safety hazards on or near the property—it is not located within an avalanche zone—and there are no on or off-site nuisances.

Figure 16. Photo of USDA Forest Service Trail Sign on the Lost Lakes property looking roughly north

Parks and Recreation Facilities

As shown on the ODP drawing (Figure 3), the property is proposed with ski runs and a chair lift that connect to the Moonlight Basin Ranch facilities. The project also includes a hiking trail network that is planned to connect to Moonlight Basin Ranch trails. Within the immediate vicinity are national forests and designated wilderness with hundreds of miles of trails, cross country skiing, mountain biking, river rafting/kayaking and many other outdoor recreational opportunities close by. Yellowstone National Park is a short drive away and cultural offerings are available in the City of Bozeman. The CC&Rs also stipulate an assessment upon property transfer with one of the purposes being the provision of cultural opportunities, which will occur in conjunction with the Alpenglow program established by Moonlight Basin Ranch. It is expected the future homes will be attractive to those buyers who are specifically seeking outdoor and cultural recreation.

SUMMARY OF PROBABLE IMPACTS

Effect on Agriculture

The most prominent tree species on the property are lodgepole pine, Douglass fir, Engelmann spruce and subalpine fir. Much of the property was logged by a previous owner, Plum Creek Timber Company, an estimated 30-50 years ago. The property may also have been historically used for seasonal pasture land.

The USDA Forest Service defines “prime forestland” as land that has soil capable of growing wood fiber at the rate of 85 cubic feet or more/acre/year in fully stocked natural stands that are not within an area of urban or built-up land uses or water (Prime Forest Land definition and criteria, U.S. Forest Service, May 26, 1977). According to the State of Montana Cadastral Mapping System, the property is capable of producing between 24 and 65 cubic feet/acre/year, so the property would not be considered “prime forestland.”

The Natural Resource Conservation Service - Web Soil Survey identifies the location and extent of the soils that are best suited to food, feed, fiber, forage and oilseed crops. Given the location, terrain and soils the entire property is classified as “not prime farmland.” It is located at an elevation of between approximately 6,600 to 7,700 feet, has a short growing season, is not irrigated and is generally northwest facing and sloped. None of these factors are conducive to highly productive agricultural ground.

The 320-acre conservation easement property may be used in the future for some degree of timber production and portions of the development property are likely to be thinned at some point to protect homes against the threat of wildland fire. Surrounding ownerships are likely to be used in a similar manner. In summary, this project will not remove highly productive agricultural ground or timber lands from Madison County’s inventory and is not expected to have an impact on the viability of agriculture in Madison County.

Effect on Agricultural Water Users Facilities

The property has no large scale irrigation facilities (impoundments, canals, etc.) and there are no plans to develop any. The only likely irrigation of the property will be to maintain green defensible spaces around homes in order to guard against the threat of wildfire. Drip irrigation will be pursued in order to conserve water. Lands to the north, west and south are not irrigated. The only expected irrigation in the vicinity of the property is irrigation used by the Moonlight Basin Ranch golf course immediately to the northeast. The golf course is not directly up gradient from the Lost Lakes property and this irrigation is not expected to have any impact on Lost Lakes.

The Lost Lakes property is located in the Jack Creek Watershed, which feeds the Madison River and supplies irrigation water to farmers and ranchers downstream. Future Lost Lakes homeowners are expected to receive water from the Treeline Springs public water system. The Montana Department of Natural Resources and Conservation (DNRC) has reviewed water right applications for this water system. According to the DNRC Water Right Query System Website, a number of provisional permits have been issued for domestic use both in the name of Moonlight Basin Ranch and Treeline Springs, LLC. Under an agreement between Moonlight Basin Ranch/Treeline Springs and the Lost Lakes Development Company, if the DNRC approves the water rights application, Lost Lakes will receive water. When the DNRC reviews water right applications, it considers availability of water and if diversions (including wells) will adversely affect downstream water users. Based on this information, it appears this project will not have a negative impact on agricultural water users facilities.

Effect on Local Services

Water Supply and Wastewater Treatment

Water supply and wastewater treatment are proposed to be provided by connection to the Treeline Springs water and sewer systems. Under an agreement between Moonlight Basin Ranch and the Lost Lakes Development Company, LLC, Moonlight Basin Ranch will bring the necessary infrastructure to the eastern boundary of the Lost Lakes property and Lost Lakes will extend the appropriate infrastructure within access and utility easements to serve the future residences. Infrastructure extension will be financed by the developer, turned over to Treeline Springs and ongoing maintenance will be financed by the future home owners with no impact to Madison County taxpayers. All extensions of the water and sewer systems will have to be reviewed and approved by MDEQ after preliminary subdivision approval but prior to construction and use. A part of MDEQ's review is to ensure the appropriate capacity is available and water quality standards are met. Only in the event of insufficient capacity of Treeline Springs (or the requisite approvals are not obtained) will Lost Lakes implement its own water systems and wastewater systems as allowed by Montana law.

Additional Traffic

The Lost Lakes development is expected to consist mostly of recreational homes. Traffic Engineer Bob Marvin, P.E., of Marvin & Associates conducted a traffic impact study (TIS) showing that at full build-out, the 162 unit project would produce approximately 512 weekday trips on average. The TIS determined that the roadway network would experience no significant impact to capacity along Highway 64 when compared to the existing capacity of the road. An increase in average daily trips would only be significant (greater than 10%) on the portion of Highway 64 west of Big Sky's Meadow Village at today's traffic volumes (as opposed to anticipated future traffic volumes). The most substantial increase in traffic volume would be seen west of the Dam Road intersection with Highway 64 in the Mountain Village.

The TIS considered the Highway 64 corridor as two segments for impact mitigation purposes; the section west of Little Coyote Road and the section to east of the road. The eastern segment of Highway 64 is currently functioning as an urban arterial street. The improvement of intersections with Ousel Falls and Little Coyote Road (eastern intersection) is expected due to the continued development and construction of the Town Center. Also, Mr. Marvin found the eastern portion of Highway 64 will need to eventually be improved to include two-way left turning lanes along the length of the corridor, traffic signals, and possibly a roundabout to improve the capacity of the road. The TIS recommends that Lost Lakes be assessed for a proportionate share of the improvement of the corridor while the improvement of the two specific intersections be assessed to the nearby developments generating the traffic that reduces the level of service of the Ousel Falls and Little Coyote Road intersections.

The second analyzed segment of Highway 64, running between the western Little Coyote Road intersection and the end of the highway, is a mountainous scenic highway with several intersections along its length. The TIS determined the geometry of the highway is the greatest constraint on the free-flowing travel speed of the road due to steep grades, limited sight stopping distances and limited passing sight distances. The improvement of the horizontal and vertical curvature of the highway would be costly and may not improve the overall value of the scenic mountain highway. Smaller improvements are suggested in the TIS that would improve the overall capacity and safety of Highway 64. The introduction of auxiliary turning lanes at intersections would provide benefits in both the capacity and safety of the road. Climbing lanes could also be introduced on the steeper grades, also improving the capacity and safety of the highway. The TIS recommends a detailed cost/benefit analysis be completed before improvements are made to the western portion of Highway 64, but Lost Lakes should be assessed a fair portion of any warranted improvements to the western segment of the highway. The developer is willing to participate in a larger scale TIS in conjunction with other developers, Madison County and the Montana Department of Transportation as a way of understanding the larger scale transportation issues and assigning proportionate improvement costs if appropriate.

Utilities

Utility providers have infrastructure in place at Moonlight Basin Ranch for power and phone. Northwestern Energy and 3 Rivers Telephone Cooperative have been contacted regarding service to the new development. Northwestern Energy has not yet responded but any future correspondence for this project will be forwarded to Madison County upon receipt. Larry V. Meyer of 3 Rivers Communications stated his company will be able to provide telephone services once the existing facilities have been extended to the development. There is no reason to believe this project will put local services over their limits of service capability.

Solid Waste

Costs for solid waste disposal are expected to be borne by the future residents by utilizing a private solid waste collection, compaction and storage area located on the Lost Lakes property (the exact design and location have yet to be determined). A local waste collection service will be contracted to operate the compactor and transport compacted waste to the local landfill. A letter requesting review was sent to the Madison County Solid Waste Manager but no response has been received to date.

Law Enforcement

According to Madison County Sheriff Dave Schenk, Madison County hopes to have a greater presence in Big Sky in the near future. The Sheriff stated one of the biggest obstacles to expanding service is employee housing, and long range plans are being made with Moonlight Basin Ranch and possibly other developers to help the Sheriff's Office in a manner proportional to the expected impacts. Sheriff Schenk indicated his long range goal is to provide three

deputies and one sergeant in the area. Although the Sheriff indicated he does not expect the future residents to demand a great deal of his office's resources, the Lost Lakes Development Company would be expected, and is willing, to assist this effort in a proportional manner as the ODP comes to fruition.

Fire Protection and Ambulance Service

According to Blackbull Wildfire Services, unwanted wildfires on the Lost Lakes property do not appear to have ignited in recent history: There is no sign of fire activity on the property and the USDA Forest Service Dispatch Manager in the Dillon Interagency Coordination Center reported no lightning or human-caused fire ignitions during the past 12 years. Blackbull Wildfire Services found the risk of wildfire impacting this property will more likely come from fires that ignite off of the site and burn onto the property. However, because of the high elevation of the area, and the relatively short (2-3 month) fire season, such a threat is unlikely during most years.

The property is currently not located in a structural fire protection district. The closest fire resources are provided by the Big Sky Fire Department, with response times estimated at between 15 and 30 minutes. Because a fire district is not located adjacent to the property, annexation is not possible at this time. However, as more of the Moonlight Basin Ranch property is developed and annexed into the district it becomes more likely Lost Lakes can be annexed as well. This would be the most equitable way to cover the costs of fire protection. The existing annexation agreement between Moonlight Basin and the fire district includes a satellite fire station with employee housing, which Lost Lakes should also proportionately contribute to in the event one is built and assuming annexation takes place.

In order reduce the likelihood of substantial fire protection expenditures the developer has created CC&Rs that include the requirements for household sprinkler systems, firewise landscaping and defensible spaces around structures, proper design of hydrants and roads and other items discussed in detail in the Community Impact Report section of this document.

Ambulance services are also provided by the Big Sky Fire Department. Because approximately 70% of the department's effort goes toward providing medical response and transport services, it is likely one or more future resident will require emergency medical services at some point. Costs for these services are charged directly to the patient or the patient's insurance company through an established billing system.

School District

Based on occupancy trends within the existing Moonlight Basin Ranch subdivisions, the homes within the Lost Lakes ODP are expected to be occupied seasonally and generally by older couples without school age children. Out of the maximum 162 homes to be developed over the next 10-20 years, no more than a handful of resident school age children are anticipated.

Affordable Housing Stock

The expected homes in this development are not likely to meet the U.S. Department of Housing and Urban Development's definition of "affordable." The developer will help to provide affordable housing for law enforcement and fire protection personnel in conjunction with Moonlight Basin and possibly other developers in the area in a manner that is proportionate to the expected impacts. However, it is necessary that the public service agencies' expansion plans and needs become clearer over time to make participation in those plans possible. Then the identified needs will be addressed in forthcoming preliminary plat applications.

Property Tax Revenues

According to the 2008 tax statement for the 307-acre property, the undeveloped land generates $532.80 per year in tax revenue. As undeveloped property, it demands no local services except for possibly wildland fire protection (for which it is assessed $175.20 or 32.86% of the tax bill annually).

To determine the potential tax revenues, Land Solutions, LLC examined tax statements from the Big Sky area. While no two properties are alike, by way of comparison a home on Lot 36, Block 1 of the Cascade Subdivision generates $8,367.72 annually in property taxes. $2,938.42 of the total tax bill goes toward public education with $1,295.04 of this amount going directly to the local school district. Additionally $1,489.01 goes to Madison County. Using these figures as a basis for comparison, when the Lost Lakes property becomes developed, the 162 units could generate a total of $1,355,570.64 in annual property tax revenue. Of this figure, roughly $476,022 would go annually toward public education, including $209,788 annually for the Ophir School District, and $241,210 would be generated annually for Madison County (in 2008 dollars).

According to the Madison County Growth Policy, 54% of Madison County's residential property owners list a permanent address outside of Madison County and this percentage is likely to be significantly higher in Big Sky. Due to the location and value of lots in Lost Lakes it is likely that most lot buyers will be second home/seasonal residents who demand little in the way of public expenditures. The Madison County Growth Policy also states the Big Sky community provides 37% of Madison County's tax base and 57% of this revenue goes directly to education. Based on all of this information this project will undoubtedly have a positive impact on local services and Madison County's tax base.

It is also significant to recognize the jobs that will be provided by the Lost Lakes project and the resulting impact on the economic vitality of the region. Initial employment will be provided through dozens of site and home construction jobs, which are anticipated to extend from approximately 2011-2025. Ongoing employment will also be generated through the purchase of goods and services throughout the community. In short, this type of project, where expensive homes are generally purchased by seasonal residents and the costs of sewer, water,

and road maintenance are absorbed privately, can be considered to have a positive impact on the local economy and tax base.

Effect on the Natural Environment

Surface Water

All surface water bodies—wetlands, stream segments and ponds—have been delineated on the property. The majority of the Lost Lakes site drains northwest to the South Fork of Jack Creek while a small area in the northeast corner of the property drains north to the main stem of Jack Creek. The South Fork of Jack Creek is located more than 500 feet west of the property boundary and there are no FEMA recognized floodplains on the property. Stahly Engineering, Inc., which performed the wetlands and stream delineation, has been in regular contact with the US Army Corps of Engineers regarding the regulatory status and permit requirements.

The soils on the property are not considered to be "highly erodible" but due to the site's slopes, aggressive revegetation and erosion control will be warranted. In order to address the potential for erosion and sedimentation of water bodies a MDEQ permit for "Stormwater Discharge Associated with Construction Activity" must be obtained. The annual permit will describe a Stormwater Pollution Prevention Plan (SWPPP) that utilizes various BMPs that are used to prevent erosion and water pollution during and after construction and to establish final vegetation after construction completion. Typical and expected BMPs include silt fence, water bars, detention basins, erosion control fabric and final seeding. These BMPs will aid in preventing erosion, removing sediment from runoff, and slowing the runoff rates, while final seeding will reclaim and stabilize disturbed soils further reducing erosion. All structures are also proposed to be located at least 100 feet from any water bodies as per Madison County's requirements.

Ground Water

Due to the proposed residential use of the property, the general lack of wetlands within the designated Planning Areas where homes will be built and the lack of a homogenous near surface aquifer, this proposal is not expected to have an impact on ground water quality.

Vegetative Health

Probably the most productive and vulnerable vegetation on the property is located in the wetland areas. These areas have been delineated and will be protected through avoidance and proper permitting. 180 acres or 59% of the development property are proposed to be managed as common area/open space by the homeowners association. Including the conservation parcel, 500 of the 627 total acres or roughly 80% of the total land area are to be managed as common area/open space. In this area, vegetation treatments are likely to occur on occasion for the purposes of fire safety and vegetative health. Due to the early stage of the project, a noxious weed management plan has not yet been created. One will be submitted with the first

preliminary plat submittal and implemented during and after construction to control the spread of noxious weeds.

Air Quality

The roads are to be paved and the land use is residential, so there are few potential sources of air quality impacts. Dust will have to be controlled during road construction in the summer season. Wood fireplaces and stoves may contribute slightly to air pollution in the winter. However, given the fact this is a high mountain, rural environment without frequent air inversions, wood burning is not expected to pose a threat to general air quality. Overall this project is not expected to have a substantial impact on air quality.

Natural Topography

Slopes have been evaluated using topographic information obtained from a photogrametric survey conducted in September of 2005. Site topography with 2 foot contour intervals is shown on the ODP (Figure 3). Slopes were classified into three ranges; 5% - 15%, 15% - 25%, and 25% and greater. Road corridors and development clusters are generally sited to avoid slopes of 25% or greater and generally consist of slopes ranging from 5% - 15% as indicated by shading on the ODP. Where road corridors are required to cross slopes greater than 25%, site specific design and construction methods will be required.

Open Landscape and Scenic Beauty

The designated Planning Areas are intended to conserve land by clustering homesites and maintaining significant open space (59% of the development property, 80% of the total). The property is located on a larger hillside that does not have ridgelines that would "sky light" homes. Design standards are to be developed that require non-reflective, non-obtrusive building materials and colors in accordance with Madison County's *Code of the West*. A design review board would have plan review and enforcement authority to ensure the design guidelines are carried out.

Effect on Wildlife and Wildlife Habitat.

Wildlife Biologist Tom Olenicki of Trail Creek Wildlife Planning prepared a detailed Wildlife Assessment for the Lost Lakes ODP. Some of Mr. Olenicki's findings are discussed in the Environmental Assessment portion of this document and his full report is in Appendix D.

In order to understand and assess the habitat value of the property, Mr. Olenicki developed habitat models and maps for focal species. This analysis was recently used for the Madison Valley and presented in the document titled *A Wildlife Conservation Assessment of the Madison Valley, Montana* (Brock et al. 2006). As in the Madison Valley assessment, focal species used in Mr. Olenicki's evaluation of the Lost Lakes property's habitat potential are grizzly bears, elk, wolverine, moose, bighorn sheep, black-backed woodpecker, red-naped sapsucker and boreal

toad. Because the Lost Lakes area does not provide habitat for antelope, sage grouse and species with similar habitat requirements, those species were not included in the Lost Lakes habitat assessment.

Once habitat ratings were completed for each focal species, the ratings were then combined to produce a composite habitat value using a method that increases the importance of each focal species based on the number and vulnerability of other species they provide habitat for (Brock et al. 2006). According to Mr. Olenicki, "The composite value produces a single overall rating intended to provide an unbiased estimate of the value for all wildlife species where areas of greater habitat value are indicated by higher numerical vales. Composite habitat values within the Lost Lakes property boundary range from 3.82 to 6.61 with a mean value of 5.36. As shown on the figure below, the composite number indicates the Lost Lakes property can be classified as having a lower-midrange overall habitat value.

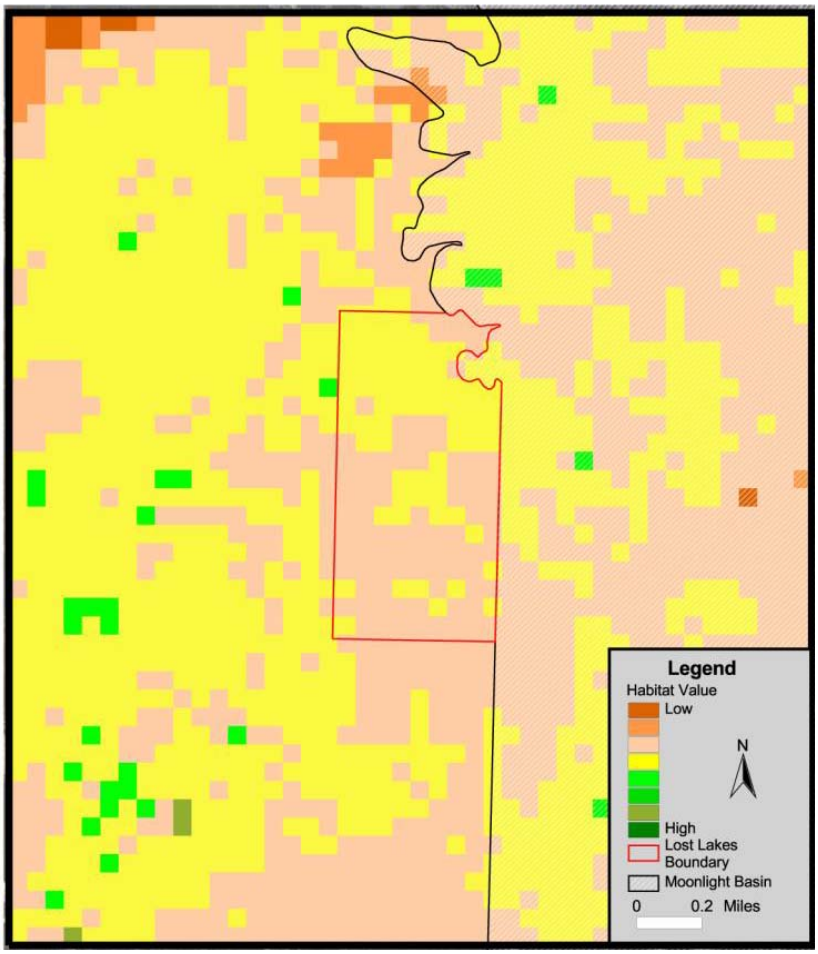

Figure 17. Composite Habitat Value Map for the Lost Lakes Property.

The following are Mr. Olenicki's comments and recommendations followed in italic font by a statement indicating how the recommendations have been incorporated into the project.

1. All development will reduce value for wildlife, but effects can be minimized by covenants and design aspects. Covenants securing the storage of food and garbage are imperative.

   Draft CC&Rs, which include a number of wildlife related provisions, are included in Appendix I. Regarding food storage, Section 2.3.5 requires items such as horse feed, grains, garbage and dog food to be stored in bear proof containers. More information on this topic is discussed below.

2. Minimize development in the northwest corner of the property and place the highest density of units along the eastern boundary to provide the best options for maintaining connectivity.

   Only open space land uses—ski facilities and hiking trails—are proposed for the northwest corner of the property. Only Planning Area 7, in which one unit is proposed on 9.7 acres, can be considered to be located in the northwest portion of the property. The highest density Planning Areas, PA-1, PA-2 and PA-6, are located in the northeast, east and southwest/central portions of the property.

3. Conflicts with both grizzly bears and black bears are probably the greatest wildlife issue in the area. Proper storage of garbage and food for humans, pets, etc. is imperative, for the safety of people and to avoid habituation of bears. Regulations concerning food storage and disposal need to be strictly adhered to by residents, visitors, and construction workers in the area. Property owners and visitors should be completely or partially responsible for the efforts and financial costs incurred by MT Department of Fish, Wildlife, and Parks for bear management as the result of development in the area as a way to ensure compliance with regulations and reduce both the number of conflicts and costs.

   In addition to the requirement for bear proof garbage containment in Section 2.3.5 of the Draft CC&Rs, a centralized, bear proof garbage collection, compaction and storage facility is proposed to be built on the property n order to allow a private collection contractor to pick up garbage from one location instead of having many individual household containers outside of homes on collection day. The idea is to have one location where, if necessary, bears can be kept away from a potential food source and managed instead of tempting bears to roam throughout the subdivision.

   Section 2.3.5 also says, "Owners acknowledge that wildlife may damage landscaping, and pose a potential threat to humans and property. Owners accept this risk and agree not to file claims against the Declarant or other governing body for damages."

4. Covenants, restrictions, management plans, etc. are only as effective as to the extent they are enforced. Having a designated person onsite with this responsibility or sharing the use of a compliance officer with Moonlight Basin is strongly recommended.

   After discussions with Moonlight Basin Ranch personnel it appears the option of contracting or otherwise sharing in the costs of employing the wildlife compliance officer and the programs he has developed would be the best approach for all parties and for wildlife. The same rules that have been developed for Moonlight Basin Ranch would be applied to Lost Lakes, only under a different homeowners association. Section 2.4 of the Draft CC&Rs provides a mechanism for enforcement that includes the potential for fines to be imposed.

5. Feeding or attracting of wildlife, including the presence of birdfeeders that attract bears must be strictly forbidden.

   Section 2.3.5 prohibits the feeding or domestication of wildlife and includes prohibitions on salt licks, birdfeeders or other foods placed on any lot to entice wild animals. Section 2.3.7 prohibits the planting of wildlife-attracting vegetation.

6. Wetlands and other riparian areas are probably the most productive habitats and are important for a range of wildlife species. Strict adherence to setbacks and increases in these distances where possible are recommended.

   As stated previously, the wetlands and other water bodies have been delineated specifically to plan around and avoid where possible. A minimum of 100-foot structural setbacks will be incorporated into all Planning Area specific designs. More detailed site plans and setbacks will be included with preliminary plat applications.

7. Much of the area has always been forested and many of the indigenous species are forest-dwelling species or require forested areas to meet certain habitat requirements. Providing cover and allowing choices are important for their continued use of the area. Existing trees should be maintained to the extent possible to shield disturbance. Native species should be utilized for landscaping and re-vegetation projects. As with any development, control of weeds and a weed management plan are imperative. Amphibians are extremely sensitive to herbicides and hand spraying of weeds near wetlands is recommended.

   Section 2.1.1 of the Draft CC&Rs requires all structures to be located within designated building envelopes. While the exact building envelope locations have yet to be determined, all will be within the designated Planning Areas shown on the ODP. The purpose of this is to ensure the areas that are set aside in common area are kept in a natural, vegetated state.

Regarding native vegetation, Section 4.6.1 says, "Natural and native species are encouraged; non-native species may be restricted and/or prohibited.

Regarding noxious weeds, Section 4.6.2 says, "Each Owner shall control all noxious weeds according to Madison County standards. Owners must consult with the Madison County Weed Board prior to controlling noxious weeds." As stated previously, a site-specific noxious weed plan will be in place prior to construction of the first phase.

Regarding toxic chemicals, Section 2.3.8 says, "The use of chemical herbicides or pesticides is prohibited except for the control of noxious weeds and pests as required by law. Non-chemical weed control is strongly recommended. Only approved herbicides shall be used. The Madison County Weed Board Representative and the DRB shall be consulted before applying chemicals."

8. Indirect effects resulting from human disturbance should be reduced to the extent possible. Free roaming pets and excessive barking by dogs will reduce wildlife use. Covenants should be enacted requiring all homeowners to prevent pets from roaming (including cats) and to keep them in a confined area, preferably inside, during the night.

   Please see Section 2.3.4 of the Draft CC&Rs which limits the number and types of domestic animals on a lot, requires pets to remain under the control of their owners at all times and allows pets that are found to be a nuisance to be removed from the property.

9. To reduce nighttime disturbance, the use of exterior lighting conforming to International Dark-Sky Association Standards should be considered.

   Section 4.5.11 says, "Exterior lighting shall be installed and operated only if approved in advance by the (Design Review Board) as part of the overall plan for the Property. The source of such light shall not be visible from adjacent Lots. Mercury vapor lamps are prohibited. Downlighting is strongly encouraged." Dawn to dusk lights are also prohibited in Section 2.3.6.

10. The use of all fencing should be minimized to allow movement by wildlife.

    Section 2.3.10 prohibits fencing around the exterior boundary of the property, outside of a building envelope and around the perimeter of the building envelope.

11. At some point, we must to begin to increase our knowledge of the effects of development on wildlife. Discussions with other area developments on monitoring the effects of development have occurred and inclusion of additional work at Lost Lakes could be readily incorporated into an area-wide monitoring plan. In addition to providing data, participation in a wildlife monitoring plan can highlight the wildlife

amenity of the property to guests and prospective buyers and help educate them about living in wildlife-rich areas.

No Lost Lakes-specific monitoring plan has been developed due to the relatively small size of the property and project. However, the Lost Lakes Development Company and homeowners association would be willing to participate in the development and implementation of a wildlife monitoring plan in conjunction with other local developers and other interested parties.

12. Any wildfire plan should maintain the following habitats to the extent possible; patches of dense re-generating lodgepole pine for snowshoe hare, large snags for cavity-nesting birds and patches of dead and downed logs for small mammals.

    According to the Wildfire Risk Evaluation and Mitigation Plan, the proposed fuel modification treatments were reviewed with Tom Olenicki, wildlife biologist with Trail Creek Wildlife Planning, to insure that the needs of key wildlife species were not adversely impacted by the fire management recommendations. These recommendations are fairly general and may have to become more specific upon the development of each phase.

In summary, Mr. Olenicki has determined the development will have a certain level of direct, indirect and cumulative impact on wildlife and wildlife habitat, but there is uncertainty regarding the actual level of impact to be expected. "The disruptive effects of human development only increase as the number of houses, roads, and people increases. Much of the information available on the cumulative effects of development and habitat fragmentation are based on theory with little application to real landscapes….Science offers very little consensus opinion to land use planners on the quantity and locations of habitat patches to conserve or how to plan and design corridors to deal with these issues (Kennedy et al. 2003). The lack of definitive knowledge or methods to address the topic often results in subjectivity that is left to planners, planning boards, and county commissioners to sort out."

Despite these limitations, in order to address the anticipated project specific impacts, Mr. Olenicki made the above 12 recommendations for limiting or eliminating impacts to wildlife. The Lost Lakes Development Company plans to adopt and incorporate all of the recommendations into the project. It is also significant to note the project design has been developed in conjunction with Moonlight Basin Ranch in a manner intended to support wildlife movement throughout the area by locating homes outside of the most ecologically important areas. The conservation parcel will be managed as an integral part of the Lost Lakes development and the conservation programs established by Moonlight Basin Ranch will be extended to Lost Lakes, with funding provided by the homeowners association. Based on all of the above, it appears this project will have a limited impact on wildlife and wildlife habitat.

Effect on Public Health and Safety

Water Supply

Water supply is proposed to be provided by the Treeline Springs public water system. As a public water supply, this system was specifically designed to ensure adequate water quantity, quality and dependability and undergoes periodic testing for water quality as required by MDEQ.

Natural Hazards

Seismic activity is always a possibility in the Big Sky area. NTL Engineering & Geoscience, Inc. has studied the property for geologic constraints and provided a Geotechnical Reconnaissance Report (Appendix B) that indicates where construction will have the fewest potential geologic concerns. The Planning Areas on the ODP were developed specifically to incorporate NTL's findings. As preliminary plat applications are submitted, more site-specific geotechnical evaluation may have to be done and as roads and homes are developed, additional investigation will be necessary.

It is possible the natural site characteristics and/or human attractants will lure potentially dangerous wildlife into the project area. In order to mitigate this threat, all garbage is proposed to be collected at a centralized compactor facility and stored in a sealed bear-proof container. Such a facility can reduce the possibility of bears or other wildlife being exposed to individual on-site garbage containers outside of homes on pick-up day. As discussed in detail above, a number of other steps are proposed to limit the threat posed by (and to) wildlife from this project.

Due to the site's elevation, aspect, lack of recent fire history, proposed water supply, planned vegetation reduction efforts, multiple access points and other factors, the threat to public health and safety from wildfire is limited. However, as discussed in the Effect on Local Services portion of this report, there is the need for expanded structural fire protection, ambulance service and law enforcement in the area. At this early stage, the Lost Lakes Development Company has committed to helping to expand these services in a manner proportional to the expected impacts by helping to contribute to plans that are being developed and are underway. Such plans may include a satellite fire station and employee housing for fire and police personnel. As the plans become more clear over time, forthcoming preliminary plat applications will contain more detail regarding the developer's obligations and commitments.

There are no known floodplains or other natural hazards on the property. There are also no known man-made hazards on the property.

Effect on Other Resources in the County

There are no known land and water-based assets which support a significant portion of the local economy that will be negatively impacted by this project. To the contrary, the project will require rock, gravel, timber and other building materials that can be acquired locally. The incoming home owners will also provide an expanded market for locally grown agricultural products, outdoor recreation, tourism and similar amenities. Overall, the ODP is likely to create additional demand for local resources while conflicts and negative impacts are not anticipated.

Effect on the Local Economy

The immediate impact to the local economy will be positive in the form of dollars spent to build roads, homes, water and sewer system extensions and other project infrastructure. Over time, the future residents will require all of the typical goods and services that people want and need. The economic activity these generally second homeowners will bring to the local and regional economy will only help to strengthen it by importing dollars from elsewhere that circulate through the economy to local people. Virtually all of the major sectors of the local economy, such as agriculture (locally produced food), forestry (locally harvested and milled wood products), mining (locally mined rock), recreation and tourism (skiing, river rafting, etc.), entrepreneurial enterprises (computer specialists, ski technicians, restaurant owners, etc.), and construction activity (tradesmen of all kinds), will benefit in the short and long term. Only retirement related services may not be impacted by this project. Overall, it seems clear this project will have a very positive impact on the local economy by bringing millions of dollars from outside of the area that are spent locally to support substantial employment and property tax revenue increases.

Effect on Public Services Provided by Other Entities in the County

The costs of extending and maintaining roads, water supply, wastewater treatment and solid waste disposal services will be absorbed privately. The proposed subdivision is not expected to raise the cost of other services provided by other entities. In fact, by examining the demographics trends of Moonlight Basin Ranch and other high end developments at Big Sky, it can be generally concluded the project will contribute more in terms of taxes and economic activity to the area than it demands by way of services. That is not to say there will not be impacts. Expanded fire and ambulance service, police protection, better public roads near the junction of Highway 64 and 191 will be required in part as a result of this project. As these costs become more clear and as each preliminary plat application is submitted, a more definitive analysis can be provided. But at this early stage, it seems apparent the Lost Lakes ODP will benefit Madison County by expanding the tax base while demanding only incremental increases in services.