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RURAL SUBDIVISION PLANNING IN MISSOULA COUNTY, MONTANA:

A PLANNER'S PERSPECTIVE

By

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Professional Paper

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ABSTRACT

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Rural Subdivision Planning in Missoula County, Montana: A Planner's Perspective

Chairperson: Dr. Sarah Halvorson

Missoula County, Montana, located in the western portion of the state along its border with Idaho, consists of the City of Missoula and a number of unincorporated population centers extending outward from the urban area. The former benefits from typical urban services and faces land use planning issues typical of city locales, including public transportation, brownfields and infill development, and enhancement of the urban core. The latter areas, by virtue of their rural nature, are the subject of an entirely different series of land use planning conversations. The unincorporated areas of the county, in towns such as Seeley Lake, Florence, Huson, and Frenchtown, consider land use planning issues in the context of impacts to water quality and wildlife, distance from services, and preservation of open space and agricultural land. When subdivisions of property are proposed in these areas, the proposals are evaluated by a set of criteria seeking to address these contexts, thereby addressing those qualities that for many County residents define the property's rurality.

Three case studies consisting of two subdivision proposals and a County effort to pinpoint rural residential fire protection requirements are analyzed from the point of view of the assigned case planner. The successes and failures, as well as the strengths and weaknesses, of each case are examined, and the outcomes are situated in the context of the larger surrounding area. The analysis sheds light on the often preventative role of the planner in rural subdivision planning in Missoula County and touches on the difficulties encountered in reviewing land development proposals in the area.

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INTRODUCTION

Planning, whether for the sake of economics, warfare, land-use, or other purpose, is fundamentally “concerned with a rational and systematic analysis of alternative courses of action, and with ways of implementing an appropriate course of action to meet relevant aims, goals, and objectives” (Priemus et al 2007, xi). Simply put, planning seeks to set the best possible course for achieving a future outcome. Humans establish and execute plans of varying complexity and longevity on a daily basis, as do other species intending to survive the inherent variables of life. Indeed, the very basic “instinct to control or ‘plan’ seems to be ingrained” (Priemus et al 2007, xi).

Planning the appearance and spatiality of the built environment, as well as its interaction with both its human inhabitants and the surrounding natural environment, is of critical importance to societal health, safety, and welfare. This notion became clear in the United States at the beginning of the twentieth century as industrial growth threatened health, swelling immigrant populations were perceived as a threat to safety, and the welfare of many appeared darkened by the shadow of looming cities (Cullingworth and Caves 2003). While the stimuli for land-use planning have evolved and certainly grown more numerous since the days of the Standard State Zoning Enabling Act and *Ambler v. Euclid*, the underlying goals of protection and preservation remain solvent in the land-use planning field to this day (Cullingworth and Caves 2003). In the rural areas of Missoula County, Montana, located in the western part of the state along what Steinberg (2001, 2) deems “the most rugged boundary between any two states in the union,” those underlying goals manifest themselves in unique ways. Indeed the picturesque foothills and valley bottoms, forests and grasslands of this area of the state are populated by individuals who

wish “to live in and preserve these landscapes simultaneously,” giving rise to a new set of criteria by which development must be measured against (Travis 2007, 4).

Statement of Purpose

This paper aims to explore the role of the rural subdivision planner in Missoula County, Montana through an examination of three case studies. In assessing what the role and duties of a rural subdivision planner might be in Missoula County, the analysis looks at the strengths and weakness of arguments forwarded during consideration of the three case studies. Additionally, some of the successes and failures of the planner assigned to each case are examined. Generally, the paper posits that the case-by-case action of a rural subdivision planner in Missoula County is fundamentally a function of the “rural” nature of the jurisdiction. The cases explored herein each unfolded in a particular manner because of the rural Missoula County setting and, similarly to other parts of the western United States, its uniqueness compared to more densely populated, homogenous regions of the country. As Travis (2007) notes, the very reason for rapid development in a place like Missoula County – its landscape, its natural beauty, its rural character – is threatened by development itself, requiring land development proposals to carefully consider impacts to these characteristics. The consequence of ignoring the impacts, describes Boorstin (1973, 370), is the eradication of that uniqueness in favor of the predictable repetition of “sights and sounds,” producing a uniform landscape devoid of individuality and stripped of the rural attributes by which a place was formerly defined. Wrobel and Steiner (1997, 2) note that the western United States has seen this destruction, this loss of the “once distinctive place now homogenized by mass culture and swallowed by the leviathan state...crushed between corporate glaciers from the

coasts...the true West as a wide-open place of promise” now gone. How might the rural subdivision planner in Missoula County, Montana diminish this eradication and mitigate the destructive pattern?

BACKGROUND AND CONCEPTUAL FRAMEWORK

If the role of the rural subdivision planner might be to engage rural development and work to manage or mitigate its effects, then the impetus for rural development in the first place is critical to the discussion of those possible roles. This section provides a theoretical background for a contemporary pattern of rural land development prevalent in western Montana and the western United States more broadly, as well as describes the process by which that development is approached by the rural subdivision planner in Missoula County, Montana.

A Rural Transformation

The United States Census Bureau defines the term “rural” strictly in relation to the term “urban.” Thus, “rural” areas consist of “all territory, population, and housing units located outside of urbanized areas and urban clusters” (U.S. Census Bureau Glossary 2009). “Urbanized area” is then defined as “a densely settled area that has a census population of at least 50,000,” while “urban cluster” is defined as “a densely settled area that has a census population of 2,500 to 49,999” (U.S. Census Bureau Glossary 2009). Missoula County, consisting of the City of Missoula and all other unincorporated areas and population centers within the County’s approximately 2,600 square mile area, has an estimated population of 107, 320 people (U.S. Census Bureau Quickfacts – Missoula County 2009). The City of Missoula, sized at 23 square miles, has an estimated population of 64,081 people (U.S. Census Bureau Quickfacts – City of Missoula 2009). Combining these figures, Missoula County outside of the City of Missoula has a population of 43,239 people spread over an area measuring approximately 2,577 square miles, resulting in a density of approximately 17 people per square mile.

Compared to the approximately 2,786 people per square mile inhabiting the City of Missoula urban center, the majority of Missoula County is very sparsely settled and squarely classified as “rural” per the Census Bureau.

Apart from the quantitative definition, however, “rural” places represent certain ideals and conjure various images. Flora (2003) notes that isolation is a key factor contributing to the rural image, though one that has become less of an actuality as mobility increases. Generally, that isolation coupled with “small size...produce[d] relatively homogenous rural cultures, economies based on natural resources, and a strong sense of local identity,” which in turn create a rural image for both insiders and outsiders (Flora 2003, 4). Berry (2008, 36-40) also touches on the themes of mobility and technology in relation to rural landscapes, positing that rural settlements by nature promote “community economics” and the “sharing of fate” while discouraging what he terms a “doctrine of limitlessness.” This doctrine, based upon “the supposed possibility of limitless growth, limitless wants, limitless wealth, limitless natural resources, limitless energy, and limitless debt,” is continually fueled by the perception that technology will provide answers and solutions to any consequent ills (Berry 2008, 36). For both authors, it appears that the local qualities that historically characterized rural areas, as well as the rural image, are in some ways threatened by advances in technology and an increasingly mobile society.

Arendt (1994) notes two distinct land use planning models exercised in the United States historically, and also hints at the effects of mobility upon community and rurality. The first originated upon the arrival of European settlers to North America and demonstrated characteristics typical of European towns and villages. The model

generally sought to establish grids of neighborhoods and streets that were both “practical and economical,” as well as conscious of the importance of central community meeting places (Arendt 1994, 3). The results of this model are alive in New England towns and settlements to this day, where historical development is tightly clustered near the town center for the sake of convenience and civic unity, while larger tracts of land outside the residential and commercial core remain open. The second model, arising with the advent of the automobile, consisted largely of the “commuter car suburb” and manifested itself on the landscape in the form of “subdivisions, shopping centers, and office parks, typically disconnected from each other and totally dependent upon cars to provide linkage” (Arendt 1994, 3). The shift in pattern from clustered, mixed-use village to disconnected, use-specific, “internally homogenous” district marked the beginning of a phenomena commonly referred to sprawl, urban or suburban (Arendt 1994, 3). Smith (1993, 129) provides the following graphic description of his experience with the development pattern:

In going from place to place, I found myself continually struck by the effects of urban sprawl as it devoured the landscape...the way in which the subdivision of land into building lots and parcels has played leapfrog over the countryside, seemingly caring little where it makes the next leap. In many cases, there is little rhyme or reason to the areas developed. Residential communities, shopping areas, and industrial tracts are all carved out of the first field available that offers the least line of resistance. Any resemblance to a pattern or plan for general development appears to be coincidental rather than intentional.

Smith (1993) clearly refers to the appearance of the construction of the built environment in the sprawl pattern, but underscores the point that wrapped up in the edifice are the people inside the houses, filling the parking lots, bustling around the shopping centers.

Part and parcel of the new pattern, as Smith (1993) and others suggest, is a new class of people.

Mobility, technology, and a shifting rural land development pattern have resulted in a new group of individuals occupying an unfamiliar landscape. The compression of space and time described by Harvey (1989) – the ability of the body, of information, and of expertise to cover distances quickly if not instantaneously via technology and sophisticated networks of transport and communication – enables the individual to occupy new spaces. Where once a population largely unable to move far beyond their place of origin existed, now individuals seeking a rural ideal are able to pursue it while simultaneously making a living via some other location. Indeed, the U.S. Census Bureau reported in 2007 that, of the 48,621 employed individuals accounted for within Missoula County, less than 500 were working in jobs related to agriculture, forestry, fishing, hunting, or logging (U.S. Census Bureau County Business Patterns 2009). With 43,239 people living outside of the City of Missoula urban center, there are clearly a number of individuals living in places where they do not work and perhaps occupying landscapes without the intimate knowledge that previous occupiers may have had by virtue of land-based employment.

The impacts of this disconnection upon the land that is subject to the new patterns of development and population growth are significant, as newcomers riding a technological wave are thus empowered to physically occupy a space without necessarily relying on its health to thrive. Gersh (1996) quotes a local Montana fishing guide noting that this new population has a “tendency to not be able to look into the future...they're too busy trying to chase the American Dream.” The guide continues: “I’ll be floating

people down a river and they'll be enjoying the remoteness; they'll see a meadow and say, 'Oh my God, wouldn't that be a beautiful place to build a home.' People don't take the next logical step" (Gersh 1996). That next logical step, a sort of vision into the future, is twofold. First, as Arrandale (2006) notes, is development and construction "that overwhelm[s] isolated communities and ruin[s] wildlife habitat...fragmenting fertile valleys and upland grasslands" critical to landscape and ecosystem health. Second is the stress to local governments resulting from the sudden enclaves demand for urban services (Gersh 1996). Each house in a sprawl-type subdivision, each resident and taxpayer intending to claim a rural place yet live an urban life, expects to "have a water supply, a means of sewage, garbage, and trash disposal...schools and protection against fire and other dangers" (Smith 2003, 129). In rural areas these urban services, perhaps considered baseline by the mobile, uninitiated population, can be difficult to provide. The fishing guide's "next logical step" (Gersh 1996), the outcomes and requirements of rural subdivision, must be considered by an entity other than the new population. The party responsible for the subdivision itself assumes some culpability to be sure, but it is the role of the rural subdivision planner to anticipate the result of land development before it occurs.

Citizen Priorities in Missoula County

Gersh (1996), Arrandale (2006), and Travis (2007) each touch on some of the more salient priorities of the rural citizen in the western United States, including the preservation of agricultural land and open space, the protection of surface and sub-surface water quality, and the defense of wildlife and wildlife habitat. In Missoula

County, Montana, many of the same priorities, perhaps emblematic of rurality, are voiced by residents.

In 2005, faced with a 21-lot residential subdivision on 46 acres in an area zoned for one lot per five acres, Missoula County residents along Mullan Road several miles west of the urban center attempted to prevent the development from proceeding via petition (Merriam 2005). Area residents viewed the proposal as a disruption to their “little piece of rural-life heaven,” fearing the new construction would “bring dangerous traffic and dust pollution to their rural roads; threats to water quality by septic systems in a delicate aquifer; and ‘leapfrog’ development that skips out into the country away from services like sewer, which will then cost more to put in later” (Merriam 2005).

Beginning with the blessing of the Missoula County Board of County Commissioners (BCC) and the Missoula City Council via Joint Resolution No. 6889 in 2005, the Community Food and Agriculture Coalition (CFAC) has facilitated a community-wide discussion regarding food security, farmland preservation, and the relation of each to rural subdivision and development (CFAC 2009). Szpaller (2009) notes the paradox at the heart of this discussion, stating that “the call for local food is loud and growing...at the same time in Missoula, some of the land that produces those vegetables, that meat, is more valuable once it’s been developed.” Points in the conversation include “keep[ing] farm and ranchlands with the most productive potential intact” and determining “how much land...Missoula need[s] to protect” (Szpaller 2009). With limited valley bottom in Missoula County, the debate over food security, farmland preservation, and private property rights, manifested as the entitlement to subdivide, is alive and vigorous.

Backus (2006) illuminates the core of many of the concerns voiced by Missoula County residents for wildlife populations as well as preservation of wildlife habitat. When a Greenough, Montana landowner proposed a 119-lot residential subdivision on approximately 200 acres in the Blackfoot Valley of Missoula County, locals bemoaned the potential impacts to “the wildlife, the rivers, watersheds, riparian areas, the fish...all work[ing] together” (Backus 2006). One local resident continued: “disrupt one element and they’ll all spiral downhill...we’ve all seen that happen in too many places in Montana...[and] don’t want it to happen here” (Backus 2009). The often “extraordinary efforts of locals pulling together to protect the natural values of what many believe is a very special place” were founded in this instance, and ultimately contributed to denial of this particular rural subdivision by the BCC (Backus 2009).

Rural Subdivision Planning Methods in Missoula County

Of importance to this case study review and analysis, and to any subdivision consideration in any jurisdiction, is the regulatory framework governing land development. In the case of Missoula County, the 2008 Missoula County Subdivision Regulations (MCSD 2008) as well as Title 76 of Montana Code Annotated (MCA 76) are the documents by which the Missoula City-County Office of Planning and Grants (OPG) currently evaluates rural subdivision proposals. OPG was created in 1996 as a bi-jurisdictional office to provide “planning, program development and implementation services to the citizens and elected officials of the City and County of Missoula,” and contains an office section specifically devoted to evaluating subdivision proposals (OPG 2009). MCA 76 provides the general foundation upon which local governments construct their own specific set of regulatory documents, and therefore tends to focus less

on design elements and micro-geographical idiosyncrasies and more on broad subdivision proposal evaluation themes. State law nonetheless has the “final say,” and subdivision-based litigation in Montana inevitably draws upon its particulars.

MCA 76 and MCSD 2008 agree very specifically on the items a subdivision proposal must not adversely affect without adequate mitigation. These items include impacts to water users and water user facilities; local services, including but not limited to fire, police, and schools; the natural environment; and wildlife and wildlife habitat. This list provides the general basis for local government approval or denial of a subdivision proposal, for if the governing body finds no significant, unmitigated impact to any of these items, a subdivision request must be approved; otherwise, the governing body is justified in denying the proposal. This is an important point, and one which OPG often stresses to the public when questioned as to the motivation for recommending approval of certain proposals – if a subdivision either presents little to no impact or the prospective subdivider is able to adequately mitigate unavoidable impacts, the BCC is essentially unable to deny the subdivision legally. Denying a subdivision without the just-cause inherent in unmitigated impacts leaves Missoula County exposed to potential litigation (Merriam 2005). Each of the case studies discussed herein engage some portion of MCSD 2008 and the review criteria contained within it and MCA 76, and illustrate the ways in which these sources are used to anticipate and plan for Gersh’s (1996) “next logical step.”

The subdivision process is generally prescribed by MCA 76, including public agency review timelines and procedures, and is described with additional details in MCSD 2008. When a rural subdivision proposal is submitted to OPG, the case is

assigned to a planner and a meeting time is set to discuss the cursory details of the development with the prospective subdivider. Following the initial meeting, the applicant submits an application packet addressing the criteria contained in MCSD 2008 and MCA 76. This packet is reviewed for completeness and accuracy by the case planner; if necessary information is missing, incomplete, or inaccurate, the applicant must submit a revised packet addressing any of the outstanding elements. Once a packet is determined to contain the necessary information for further review by specialty agencies, the packet is sent to these agencies for comment. Specialty agencies frequently commenting on subdivision proposals in Missoula County include: Montana Fish, Wildlife & Parks (FWP), a state agency responsible for “the stewardship of the fish, wildlife, parks, and recreational resources of Montana” (Montana Fish, Wildlife & Parks 2009); Missoula County Rural Initiatives (RI), a county agency “responsible for providing County citizens with an avenue for collection and distribution of data, legislation, regulations and policies relative to Missoula County while concurrently advising the [BCC] on issues of importance to rural residents...outside the urban area” (Missoula County Rural Initiatives 2009); and the Five Valleys Audubon Society, a chapter of the National Audubon Society serving the Missoula area and “advocating actions that favor wildlife and environmentally sensitive uses of resources” among other goals (Five Valleys Audubon Society 2009). Comments regarding subdivision proposals are also solicited from Missoula County public works and engineering personnel, the Missoula County Sheriff, the local fire jurisdiction, and a number of other governmental and private entities providing or being requested to provide services to the proposed development.

Following the comment period, the OPG case planner compiles the responses from those agencies providing remarks, essentially evaluating whether any of the commenting agencies recommend that the proposal not proceed any further. Otherwise, comments received from agencies form the basis of any OPG-recommended conditions of subdivision approval forwarded to the BCC. The case planner drafts a staff report containing these conditions and any findings of fact regarding the proposal. The findings support conclusions of law that address the MCA 76 and MCSD 2008 subdivision review criteria, as well as support any of the recommended conditions of approval. The BCC then considers the subdivision proposal and any OPG staff recommendations at a public meeting. The prospective subdivider has an opportunity to speak at this meeting, as do any members of the public either in support of or in opposition to the proposed development. The decision to approve, conditionally approve, or deny the subdivision is typically arrived at over the course of a single meeting, though more than one meeting may be used to discuss the proposal.

The case studies included in this assessment not only rely upon the review process and criteria for review prescribed by the regulatory framework in place in Missoula County, but upon the expert testimony provided by commenting agencies. In each case, one or more of the elements contributing to rurality in Missoula County are addressed through and by process and the observers.

CASE STUDIES

This section provides examples of the work I performed as a rural subdivision planner in Missoula County. In examining the particulars of each case, as well as the methods and processes I employed in order to evaluate each situation, my role as a planner begins to come into focus.

Case Study Selection

The case studies employed in this examination were chosen based primarily on the fact that this author was the assigned case planner for each. Additionally, the majority of the analysis and consideration of each project occurred within the year 2009. Coupled with the fact that each case was under Missoula County jurisdiction, each of the issues was therefore contemplated using the same edition of the Missoula County Subdivision Regulations. It is important to note, however, that I processed other rural subdivision proposals during the year 2009, and the cases examined with this research were specifically chosen based upon the focus of discussion in each and their likely contributions to the purpose of this endeavor.

Case Study No. 1 – Blue Heron Addition Subdivision

In September 2008, a couple owning approximately 35 acres of largely undeveloped pasture land north of Huson in the Six Mile Creek drainage west of the City of Missoula approached OPG with a proposal to subdivide their property into three residential lots. Lot 1 of the proposed subdivision bordered Six Mile Creek along its western boundary and Six Mile Road along its eastern boundary, and contained a restored historic schoolhouse serving as the primary residence. Lot 2 to the west also bordered

Six Mile Creek and, along with Lot 3 further to the west, consisted generally of a rolling grassy landscape.

OPG requested agency comment and received responses from FWP and RI devoting much attention to Six Mile Creek and its supported riparian vegetation. MCSD 2008 and MCA 76 stipulate that subdivision proposals shall not adversely impact the natural environment, and the former specifically discusses the treatment of streams and riparian vegetation in its Article 3. Both FWP and RI noted that the proposal as presented, which included improvements to an existing crossing of the creek lying entirely within the creek floodplain, would adversely impact that riparian resource. Additional impacts were anticipated due to a lack of restricted activities near the creek and within its associated riparian vegetation. The applicants simply did not propose sufficient restrictions upon future owners to protect the resource adequately according to FWP and RI (Appendix A).

McKinstry et al (2004) note that riparian areas in the western United States are a unique resource, as they comprise very little acreage within a landscape yet support a disproportionate percentage of a region's wildlife. In the United States this condition is specific to the West in that water is generally limited in its quantity here – a significant portion of the West receives its annual allotment of water as winter snow and must rely on its metered melt for the remainder of the year (McKinstry et al 2004, xi). In Missoula County, precipitation is well-distributed in each season, but limited overall to less than 14 inches of water per year on average (NOAA 2009). From limited water follows limited riparian and wetland vegetation, and a limited resource not only for fish and wildlife but for humans relying upon the filtering and stream/river bank-stabilizing effects of that

vegetation (Lyle 1999, 205). In general riparian areas represent a “link between terrestrial and aquatic systems” by taking up floodplains and absorbing stream/river meander, supporting wildlife seeking water, and contributing to water quality (Hubert 2004, 52).

MCSO 2008 requires subdividers to identify the locations of riparian areas on subdivision plats and exhibits, propose a plan for protecting and managing the resources, and provide a “no-build” area buffering the vegetation and water body from adjacent development. The property owners proposing Blue Heron Addition Subdivision included these elements in a cursory sense, but did not provide the level of detail and protection suggested by FWP and RI. In particular, the owners proposed a 25 foot-wide protective buffer area from the edge of vegetation to the point at which development could occur and permitted activities such as mowing, cutting, and cattle grazing within the buffer area. These activities in such close proximity to what was deemed a high-value riparian resource, as well as the possibility of home construction a mere 25 feet from delicate habitat, were considered an adverse impact to the natural environment (Appendix A).

The discussion of these impacts came to a head at the public consideration of the subdivision by the BCC on April 1, 2009 (BCCa 2009). At the meeting, the BCC heard testimony from OPG regarding the nature of the riparian resource – its intact condition and large size relative to other riparian areas along Six Mile Creek – in addition to recommended conditions regarding the riparian area upon which any approval of subdivision should hinge. The BCC also heard testimony from the property owners and their representative, arguing that the conditions restricted the use of the land and that the riparian resource existed in its quality state because of their stewardship. The point was

made by members of the BCC that in subdividing the land for sale, the stewardship that resulted in what amounted to a public good was being severed – there was no guarantee that future owners would care for the resource in a similar way, and therefore the time for protecting the riparian area into the future was at that moment. Upon approval, the BCC imposed conditions increasing the size of the protective buffer and limiting the activities permitted in both the buffer area and the riparian resource area itself.

The extent to which the BCC agreed with the OPG staff-recommended conditions was at times during the meeting questionable, as reflected in the imposed conditions (ibid.). Where staff recommended a buffer width of 150 feet from the edge of the riparian vegetation, as well as prohibition of all cutting, haying, or mowing within the buffer area, the BCC disagreed. The buffer width was decreased to 50 feet in places and cutting activities were permitted, the BCC citing agricultural potential onsite as a reason to leave the riparian buffer area open to these activities in the future.

The riparian area present on this particular site represented a public health benefit through its contribution to water quality in the Six Mile Creek drainage. The resource represented a public welfare benefit in that it stood as a critical piece of the ecological puzzle in the drainage and contributed to a sustained and diverse wildlife population. The subdividers, despite living in this location for a number of years, underestimated the probable impacts of the proposed development upon the creek and its riparian area, and the case planner's recommended conditions sought to anticipate those impacts. Though significantly checked and questioned by the BCC (ibid.), OPG was able to secure some measure of future protection for the resource.

Case Study No. 2 – Big Buck Subdivision

In November 2008, OPG received a request to subdivide 5.09 acres of formerly-irrigated alfalfa field on the eastern slopes of the Bitterroot Mountains into three residential lots. The property, near the proposed Bitterroot Resort ski facility, sat on the south side of a road heading due west from the primary highway through the Bitterroot Valley. On the north side of that road, development in the form of two to ten acre “ranchettes” with consistent yet diffuse home construction stretched north towards the town of Lolo and the historic ranch of the Maclay family. On the south side of that same road, where the subject property was located, a series of property transactions outside of the typical subdivision review process resulted in a string of parcels clustered tightly to the road itself. South of those parcels, the landscape opened considerably and several drainages converged below undeveloped public land west of which laid the unbroken expanse of the Selway-Bitterroot (Appendix B).

From the beginning, OPG counseled the property owners regarding the issues within their proposal likely to be of greatest concern to reviewing agencies, namely the proposed location of one homesite furthest south on the property through a dry, grassy depression the owners referred to as “the coulee.” The importance of this feature was not apparent initially. There feature contained few trees and no evidence of an intermittent stream flow. Yet, when agencies reviewing the proposal submitted comment to the planning office, the call was for protection of, and ultimately greater distance from, the coulee.

Looking west towards the property from the highway, it was clear that the subdivision as proposed would result in a significant and irreparable impact upon the landscape. The extent of the coulee, including its path upslope and eventual merge with

other drainage features containing water and denser vegetation, was obvious from a distance. The proposal, particularly the southernmost homesite, would represent the furthest encroachment into the open grassland. The grassland, comprised of formerly-irrigated alfalfa pasture and native meadow grasses, occupied public and private lands. Commenting agencies, including FWP and RI, provided a context for the grassland, noting its importance as winter range for elk seeking less-frozen forage during colder months and as a haven for elk calves reared in the very coulee the owners sought to build a driveway through. Five Valleys Audubon Society identified the grassland as important habitat for raptor and ground-dwelling bird species. It became clear to OPG that the grassland south of the property was important to wildlife in the area, and that the coulee on the owners' property was a significant thoroughfare in and out of the area (Appendix B).

Habitat loss has been identified as a critical factor decreasing levels of biodiversity in the United States and internationally (Beatley 1994). However, the situation is unique in the United States due in part to the nation's relatively high amount of land area per capita. Unlike other nations experiencing biodiversity loss, the United States is not struggling to find square footage for a swelling population per se (ibid.). Rather, the "inefficient and wasteful nature of our land usage" and "the sprawling land-intensive patterns of development common" here result in a rate of habitat loss disproportionate to the nation's acreage per capita (Beatley 1994, 2). Travis (2007, 115) identifies the motive behind this low-density, wasteful pattern in the western United States – the desire for "mountain living near the city," where "a house on a mountainside with breathtaking views, deer and elk in the backyard, and sense of 'wide-open spaces'"

is the reward for the career-weary. The exurban development typified by this dream may not appear especially destructive at first glance. However, the mix of “houses, garbage cans, pets, fences, firebreaks, and even play structures” can “disturb and attract wildlife,” as well as “setup new territorial tensions between people and wildlife and among wildlife species” (Travis 2007, 129). Travis (2007, 129) continues, noting that:

In consuming habitat and threatening biodiversity, exurbanization is like all other land development patterns. Low-density residential development, however, yields a particularly insidious problem, a version of “death-by-a-thousand-cuts” syndrome: the ecological effects of each individual exurban development are generally small, yet taken as a whole, they result in significant effects on habitat and species over large areas.

It appeared that encroachment south of the coulee on the subject property in this particular subdivision represented the first of the “thousand cuts” (ibid.) into the valuable grassland habitat, and the issue assumed primary focus going forward with the proposal review.

At the public consideration of the subdivision before the BCC on September 9, 2009 (BCCc 2009), the property owners testified at length on topics ranging from private property rights to the adequacy of adjoining lands for supporting the local elk population. OPG countered with a discussion of the funneling effects of the multiple drainages in the area, including the partially-onsite coulee, and the integral role played by the intact grassland south of the subject property. Photographic perspectives upslope and downslope from the property clearly illustrated the likely outcome of a homesite south of the coulee, and the impact of non-clustered low density development upon this particular landscape became apparent to members of the BCC. It was the unspoken testimony of an adjacent property owner, however, that affected the governing body most – digital video footage and a series of photographs showing elk on the property proved to be a critical

visual reinforcement of much of the verbal testimony and arguments forwarded to that point in the meeting. The BCC imposed conditions of subdivision approval requiring all development to occur north of the coulee, as well as dedication of a buffer area between the northern edge of the coulee and the nearest possible homesite (BCCc 2009). The landscape feature identified during the agency review period as an elk calving location was preserved in this instance.

In preserving elk habitat and foraging range, as well as grassland bird species habitat, OPG and the BCC contributed to public welfare. As Beatley (1994, 6-7) notes, preserving habitat and protecting sensitive species carry with them the possible benefits of medicinal discovery, anthropological insight, conservation of the larger ecosystem of which humans are a part of, recreational usage and aesthetic beauty, and emotional wellness. The BCC decision also contributed to public safety, for as Travis (2007) points out, the desegregation of human and wildlife habitable spaces very often results in human/wildlife conflicts. The property owners, who hailed from different region of the country entirely (BCCc 2009), were seemingly not in a position to consider not only how to manage the concerns of public safety and welfare, but how to preserve the elements that might constitute the property's rurality.

Case Study No. 3 – Missoula County Fire Standards

Similar to other jurisdictions, Missoula County and the BCC recognize the primacy of structure fire as a threat to public safety in housing developments and have historically adopted subdivision regulations requiring some form of mitigation of the hazard.

Beginning in 1995, the adopted methods for mitigating the structure fire hazard in the Missoula County Subdivision Regulations consisted of five options. Options one through four required provision of physical water supplies for use by responding fire agencies – municipal water systems producing 1,000 gallons per minute of flow, ponds or river, storage cisterns with hydrants, or legacy agricultural wells producing 350 gallons per minute or greater flow. Option five, interior residential sprinkler systems, provided what was intended to be a more economically feasible alternative. Additionally, in rural areas or locations where water rights precluded certain mitigation, the sprinkler option might have been the only physically and legally possible alternative for providing a water supply for fire protection. The first four options needed only to be approved for adequacy after installation, while the fifth needed fire district approval at the proposal stage (MCSD 2009).

At the same time subdivision applicants were required to provide one of the five possible fire protection options as part of their submittal, proposals were also required to comply with the Uniform Fire Code (UFC), generally regarded as the national fire standards document. The UFC incorporates several hundred National Fire Protection Association (NFPA) codes by reference, making the UFC a complex and highly-interconnected basis for fire protection, one which rural fire districts in the county were expected to base comment upon and generally implement in their reviews of subdivision proposals.

Over the years, the Missoula County planning office received subdivision applications demonstrating a diverse level of understanding of and compliance with the fire protection section of the regulations and the details of the UFC. More importantly,

the office received remarkably varied comments from fire districts reviewing subdivisions within the county – while one district might review a subdivision proposal strictly according to the UFC and recommend thousands of dollars worth of improvements, another district might deem the proposal acceptable upon payment of \$100 per new lot for equipment purchase. The recommendations of both districts, however, were supposed to satisfy the very specific and rigorous requirements of the subdivision regulations and the national code. Developers would choose residential sprinklers for fire protection as the least expensive option, yet not pass along the information that sprinkler installation was required to complete the building permit process until after prospective buyers purchased the land. Those buyers in turn blamed the county for imposing the requirement initially, at times turning to litigation. Moreover, the mechanism for confirming that required items were in fact completed was underdeveloped.

The heart of this issue is rurality. In the City of Missoula, the majority of subdivision proposals simply report the number of fire hydrants in and around the development and their distances relative to homesites. Fire protection is provided by a multitude of fire stations and a brigade of paid, full-time firefighters who react to emergencies instantly and with a barrage of quality equipment. The water supply for fire protection is on every corner, under pressure and ready for deployment. Outside of the city, the typical fire fighting agency is comprised mostly of volunteers working day jobs far from fire stations, unable to quickly react to emergency calls and often under-equipped to do the job once onsite. Water supply in Missoula County can be difficult to come by – a river flowing in one season is dry or frozen in another, and rarely is a

reliable source located at a particular incident site. Rural fire districts would review subdivision proposals at the request of OPG and would comment in ways they felt most comfortable with, not necessarily per the UFC but per their own opinions or feelings as to how the particular district would be best served or would best be able to serve. The resulting disparities and inconsistencies, as well as their liability implications for Missoula County, precipitated a change in the way the BCC approached the fire protection issue in 2009.

The Commissioners and OPG first identified that the primary cause of the inconsistency in fire-related subdivision reviews was the number of jurisdictions separately performing the reviews themselves. The solution to this issue was the consolidation of the review process. To that end, the BCC contracted with a Montana-based engineering firm to evaluate water supply specifics, access types, and other design elements contained within County subdivision proposals for adequacy. The second step was to clearly lay out the parts of the exhaustive UFC that applied to suburban and rural land development. The resulting document would guide not only the newly-hired Missoula County Fire Inspector but also prospective subdividers seeking to streamline the review of proposed developments (Appendix C). By referencing a specific set of requirements assembled from the UFC and statutorily supported by both MCSD 2008 and MCA 76, applicants would know precisely what was required of a project given its size, location, and interior arrangement. From May through July 2009, OPG worked to assemble this document in concert with local fire professionals, engineering firms, and stakeholders (Appendix C). On July 22, 2009, the document went before the BCC for a Public Hearing (BCCb 2009).

Considering the simple reference to the UFC and a handful of water supply requirements contained in MCSD 2008, the appearance of seven pages of specific requirements including calculations and hydraulics seemed to constitute the adoption of new regulations for many involved in the process of generating the fire-review document. Regulation revision in the County typically involved a greater number of meetings over a longer period of time, as well as convening of a technical working group or some form of advisory panel to oversee the revision – the fire review document lacked many of these provisions and was “backroom” in the eyes of some observers. The BCC, OPG, and ultimately the Missoula County Attorney’s Office posited two very important arguments to the contrary (ibid.). First, the simplicity of the UFC requirement in MCSD 2008 was actually a benefit, as the regulations simply state that all proposals shall comply with “applicable laws, ordinances, and regulations, including but not limited to...Uniform Fire Code” (MCSD 2008, 13). The extent of what was actually required in a subdivision proposal then depended exclusively upon what was contained in the UFC. Second, the UFC, in Chapter 2, states that “documents or portions thereof listed in [the] chapter are referenced in [the UFC] and shall be considered part of the requirements” of the code (UFC, Chapter 2 §2.1). Chapter 2 continues on to reference over 300 supporting codes and sub-documents, including National Fire Protection Association (NFPA) codes 1141 and 1142 regarding fire protection infrastructure and water supplies for land development in suburban and rural areas. The latter two codes formed the basis of the fire-review document, were incorporated into the UFC by reference, and became a requirement of MCSD 2008 by reference to the UFC. The requirements of the fire-review document were deemed acceptable and authorized by the subdivision regulations as written, and

following several hours of testimony and discussion at the Public Hearing on July 22nd, the BCC adopted the new document (BCCb 2009).

The case of Missoula County and its handling of the issues surrounding the need for reliable fire protection is the result of the county's size, the scope of its landscape, and the desire of its residents to inhabit often far-flung reaches of the jurisdiction. As Wall (2007) notes, that desire transcends rationality in some instances – an emotional connection to the natural environment has the ability to virtually override one's sense of danger, of self-preservation. Consideration of land development, and in this case land development regulation, in relation to the fire hazard was intimately tied to the character of the landscape for the BCC. In a situation where individuals were willing to put themselves in danger in order to live a life closer to the land, whether perceived or actual, the BCC acted to protect public health, safety, and welfare with the assistance of OPG.

The process of arriving at an adopted set of standards was arduous to be sure, however. Opposition from the development community, from engineers and surveyors, was considerable, and representatives from the Missoula Building Industry Association referred to a brief consideration by the BCC of rescinding the residential sprinkler option as vindictive and spiteful. Some at the Public Hearing suggested that the standards were designed to subvert and ultimately prevent rural subdivision development, while others spoke of the impact of the fire protection requirements on the feasibility of affordable housing (BCCb 2009).

DISCUSSION AND STUDY LIMITATIONS

In reviewing the three case studies and their respective outcomes, one particular common theme emerges. Blue Heron Addition Subdivision and Big Buck Subdivision, as well as all future approved proposals subject to the Missoula County Fire Standards, will exist despite their perpetuation of the sprawl development pattern described by Smith (2003) and Gersh (1996), and despite causing some of the impacts explicated by Travis (2007). As Merriam (2005) described in quoting a member of the BCC, the authority to deny subdivision proposals is far more elusive than the apparent obligation to approve them in this part of Montana. What then is the role of the rural subdivision planner in Missoula County if development seemingly proceeds despite the planner's influence? The responsibility to assemble the opinions of experts, to measure a subdivision proposal's details against the yardsticks of MCSD 2008 and MCA 76, to regulate and compromise, becomes the responsibility to control loss, to triage and prevent. The role of the rural subdivision planner is ultimately one of minimization, of shaping an otherwise impactful land development proposal into one with a lesser footprint.

Of the limitations inherent in this review and assessment, three are of greatest concern. First, the purpose statement posits that the rural subdivision planner essentially fills a void in local knowledge by assembling facts perhaps unapparent to property owners and individuals new to the land. However, as a governmental employee I am unable to compare the public role to the private role. This point might add a new dimension to the purpose statement – what are the respective roles of the private and public-sector rural subdivision planner in Missoula County, Montana? While the case studies explored in the research support the typecasting of the public role to a certain

degree, the thesis statement ignores the fact that the vast majority of rural subdivision applicants are represented by local planning and engineering firms, some of which have been acting on the Missoula County land development stage for many decades. These hired representatives should seemingly possess the same level of knowledge as the public sector planner regarding rural characteristics and rural landscape elements, and should in turn pass that knowledge along to their clients. Perhaps the problem statement should not be limited simply to unfamiliar property owners but should include those who, perhaps compelled to follow the wishes of their paying clientele, choose to ignore the effects of the sprawl development pattern upon the rural landscape. The differences of opinion regarding the potential for impacts witnessed on a case-by-subdivision case basis are personal evidence that the roles of planners in these two sectors are driven by a differing set of circumstances.

Second, the cases chosen for review in this research represent a fraction of the land-use planning activity in Missoula County in 2009. Over the course of the year, the planning office reviewed a multitude of subdivisions through to completion. Additionally, many more subdivision proposals were brought forward but eventually abandoned, and many other actions related to zoning were processed and approved. In these other instances, there are cases that would undoubtedly support different conclusions regarding the role of the subdivision planner. The cases discussed herein were thus purposely chosen to support this researcher's thesis. Additionally, OPG evaluates subdivision proposals for the City of Missoula, where existing infrastructure, public transportation, and urban-level services facilitate land development more in-line with the first model described by Arendt (1994). Planners in OPG evaluate both city and

county proposals, and thus are able to vary their roles within a given year depending upon the location of an assigned proposed subdivision.

Third, the fact that I was the assigned planner for each of the three cases raises valid subjectivity-related concerns. The potential for a skewed, biased examination of each case study may therefore be greater because of pre-conceived notions on my part as to the outcomes of the individual cases, their particular strengths and successes. This is not to say that the personal perspective is invalidating; rather, my subjective view represents what Cresswell (2007, 18) describes as the “axiological assumption” inherent in qualitative research.. In recognizing this assumption, qualitative research recognizes the often “value-laden nature of [qualitative] study” and “admits that the stories voiced represent an interpretation and presentation of the author as much as the subject of study” (ibid.). Though the personal perspective is an integral part of translating a series of my professional experiences into this academic analysis and its conclusions, and qualitative research assumes a certain degree of subjectivity, choosing of case studies in which I was not a key actor may have contributed to a more objective consideration of the role of the rural subdivision planner.

CONCLUSION

As a student of planning, I learned mostly of urban and city planning – of the innovative designs influencing transportation in Portland; of the arcing cul-de-sacs carving up the landscape in Orange County, California; of Complete Streets programs and New Urbanism. This is not to say that rural planning was altogether overlooked in my schooling, or in planning education programs at large, but city planning seems to happen on the cutting edge. My experience at OPG has shown me that although rural subdivision planning receives less attention in academic circles and at national conferences than urban planning and design, in Missoula County, where buildable land is at a premium, the rural subdivision planner is a key component in the development process. The case studies discussed in this paper, cases in which I was the planner working on and with the issues, illustrate how rural subdivision planning decisions acutely affect rural residents, because that portion of the Missoula County population critically relies on the health of the natural environment and the preservation of a rural ideal.

Assessing the role of the rural subdivision planner, my role of prevention and minimization for the past three years, leads me to question whether the system under which development proposals are reviewed in Missoula County could be structured more efficiently. As a taxpayer-funded public servant I feel obligated to employ public revenue to its maximum usefulness, and often times I and my colleagues find ourselves making the same arguments and spending time debating the same issues case after case. The repetition is inefficient to be sure, particularly when we are able to anticipate the likely issues inherent in a development project well in advance of the agency comment

period of the BCC consideration, yet we must provide applicants and property owners their right to due process.

One possible solution to this issue in the most rural parts of Missoula County is to zone the land, thereby imposing a predictable set of rules for development that hopefully “achieve a logical pattern of land-use” by guiding it “in such a way that it will make sense both economically and from a physical-design standpoint” (Smith 1993, 112-113). In Montana, zoning in counties is authorized by MCA 76-2-201 and must be imposed in accordance with a growth policy functioning per MCA 76-1-605 (MCA 76, 2009). However, as Smith (1993, 113-115) points out, zoning is not always well-tolerated by residents within a jurisdiction. In Missoula County and in the West more broadly, where historically the frontier represented an escape from engagement with the government (Kemmis 1990, 13), zoning, adoption of growth policies, and planning in general are often perceived as fundamental infringements upon private property rights. Take the example of Ravalli County, Montana, neighboring Missoula County immediately to the south, where the adopted growth policy was repealed in 2009 precisely because residents interpreted its content not as a “blueprint for smart growth” in a place with a rapidly expanding population but as restriction upon they are permitted to do on their own land (Jannotta and Cramer 2009). MCA 76-2-203 (MCA 76, 2009) states that “zoning regulations must be made in accordance with the growth policy,” but if rural residents in western Montana are unable to conceive of even this baseline planning document – which in itself has no regulatory authority according to state law – then codified zoning regulations seem out-of-the-question.

Another possible solution to the problem of redundant review, one that speaks to the issues inherent in low-density rural development at large and works in concert with zoning to an extent, is implementation of Transferable Development Rights, or TDR, program. The National Association of Realtors (2010) defines TDR as “the exchange of zoning privileges from areas with low population needs, such as farmland, to areas of high population needs, such as downtown areas.” Bound also to the zoning privileges cited in the definition are development privileges. Gallatin County, Montana sought to implement this type of program in order “to redirect development potential from the rural areas [of the county] into designated growth areas using financial incentives” (Gallatin County Planning Office, 2009). The TDR program offers the prospective subdivider the opportunity for percentage increases in the density of a proposed development in exchange for conservation of land. For example, a rancher in Gallatin County seeking to subdivide previously undeveloped property might be offered a 10 per cent increase in the total residential density permitted within a development if the rancher agrees to pursue the subdivision in another location. Alternatively, that rancher would have the option of selling the right to develop that land to prospective developers nearer an urban core with established services. Critical to the TDR program are those other locations, commonly referred to as a “receiving areas,” as well as those open-space resources which Gallatin County residents wish to conserve, referred to as “sending areas” (ibid.). The sending-receiving dynamic raises concerns for those inhabiting the latter however, as existing residents in receiving areas essentially absorb the development rights of non-adjacent property owners. It is this difficulty, coupled with doubts regarding the mechanism for determining the extent of a property owner’s right to develop, that eventually derailed to

the TDR program in Gallatin County (Williams 2007). Much of the determination of a county property owner's right to develop would have been based upon an eventual zoning initiative; the rural residents of Gallatin County were unsupportive of such an initiative, and the County was unable to calculate rural property owner entitlements. Similarly to Ravalli County's growth policy retraction, the rural residents of Gallatin County were wary of the proposed TDR program's effects upon private property rights.

In light of these failed examples, perhaps then the "future direction" for the rural subdivision planner in Missoula County really has very little to do with the public sector planner herself. The planners in my section of OPG have recently undertaken an effort to catalog the details of approved subdivisions, keeping track of the number of lots approved, the arrangement of developments themselves, and their geographic locations. The effort has resulted in a database of subdivision information, representing a tool that really does very little other than to serve as repository for information, a sort of collective memory for current and future rural subdivision planners. As rural subdivision planners compile this information over time and expand the Missoula County record, the data can serve to assist the Board of County Commissioners in linking decisions and building subdivision-to-subdivision cohesion. Meanwhile, perhaps those members of the public in fear of planning, zoning, and growth management as infringements upon private property rights or attempts by the government to unduly control personal action can work to move beyond those concerns. Rather, the fearful and distrustful can work towards achieving another collective understanding – that "the fundamental rights of...the community...to enforce reasonable governmental regulations and restrictions transcend that of the private right of ownership of land" (Smith 1993, 113). Only then will the role of the rural

subdivision planner in Missoula County, Montana appreciably change – when the rural is able to advocate for itself.

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APPENDIX A – EXCERPTS FROM BLUE HERON ADDITION STAFF REPORT

Riparian Area

13. The portion of the proposed 20 ft.-wide Riparian Buffer Area/No Build/No Alteration Zone located west of Six Mile Creek, as illustrated on the preliminary plat and the Riparian Management Plan and Map, shall be widened to 150 ft. along its entire length, subject to review and approval by OPG prior to final plat approval. (*Missoula County Subdivision Regulations Articles 3.13.1, 3.13.3, and 5.2(20); Five Valleys Audubon Society and Missoula County Rural Initiatives recommendation*)
14. The portion of the proposed 20 ft.-wide Riparian Buffer Area/No Build/No Alteration Zone located east of Six Mile Creek, as illustrated on the preliminary plat and the Riparian Management Plan and Map, shall be widened to 50 ft. along its entire length, subject to review and approval by OPG prior to final plat approval. (*Missoula County Subdivision Regulations Articles 3.13.1, 3.13.3, and 5.2(20); Five Valleys Audubon Society and Missoula County Rural Initiatives recommendation*)
15. The plat shall be amended to include bearings and distances describing the western and eastern boundaries of both the Riparian Resource Area/No Build/No Alteration Zone and the Riparian Buffer Area/No Build/No Alteration Zone so that they may be located in the event of a proposed or encountered encroachment, subject to review and approval by OPG prior to final plat approval. (*Missoula County Subdivision Regulations Articles 5.6(3)(g) and 5.6(3)(k); Missoula County Public Works recommendation*)
16. The “Management” and “Maintenance” sections of the Riparian Resource Management Plan shall be replaced with sections that directly address Article 3.13.3 subsections (1) through (5) of the Missoula County Subdivision Regulations. The Riparian Resource Management Plan shall incorporate the following:
 - A. Revise the Riparian Buffer Area west of the creek to a 150 ft. width and east of the creek to a 50 ft. width;
 - B. Include the following definition of “Riparian Resource Area/No Build/No Alteration Zone:”

Riparian Resource Area/No Build/No Alteration Zone - The *Riparian Resource Area/No Build/No Alteration Zone* is the area from Six Mile Creek to the edges of riparian vegetation east and west of the creek, as indicated on the plat and the Riparian Management Plan Map. The *Riparian Resource Area/No Build/No Alteration Zone* shall include the prohibition of all buildings, structures, fences, utilities, parking, roads, motorized vehicle access (except for routine maintenance activities), storage, containment or watering of domestic animals, hay production, mowing, or any other development. It shall also prohibit any mining, cutting, burning, or removal of live or dead vegetation (except as needed for wildfire prevention, noxious weed control or conservation management), modification of the streambank or streambed, filling with substances such as gravel, soil, slash or other debris, the use of pesticides, herbicides, or fertilizers, or the planting of non native vegetation such as lawn grasses.

- C. Include the following definition of “Riparian Buffer Area/No Build/No Alteration Zone:”

Riparian Buffer Area/No Build/No Alteration Zone - The *Riparian Buffer Area/No Build/No Alteration Zone* is a strip of land extending 50 ft. east from the eastern edge and 150 ft. west from the western edge of the Riparian Resource Area as shown on the plat and the Riparian Resource Management Plan Map attached to these Covenants. The *Riparian Buffer Area/No Build/No Alteration Zone* shall include the prohibition of all buildings, structures, fences, utilities, parking, roads, motorized vehicle access (except for routine maintenance activities), storage, containment or watering of domestic animals, hay production, mowing, or any other development. It shall also prohibit any mining, cutting, burning, or removal of live vegetation (except as needed for wildfire prevention, noxious weed control or conservation management), filling with substances such as gravel, soil, slash or other debris, the use of pesticides, herbicides, or fertilizers, or the planting of non native vegetation such as lawn grasses. Wildlife-friendly fencing is permitted at the eastern and western boundaries of the Riparian Buffer Area to keep livestock out of the Riparian Resource Area and Buffer.

The amendments shall be subject to review and approval by OPG prior to final plat approval. (*Missoula County Subdivision Regulations Article 3.13; Missoula County Rural Initiatives recommendation*)

Weeds

17. A revegetation plan shall be approved by the Missoula County Weed District prior to final plat approval. (*Missoula County Subdivision Regulations Articles 3.1(1) and 3.1(9); Missoula County Weed District recommendation*)

Water Rights

18. The subdivider shall ensure that all lot owners have access to irrigation surface water from Six Mile Creek or have the water rights removed for Lot 3 through an appropriate legal or administrative process, which shall be indicated by a statement on the final plat subject to review and approval by OPG prior to final plat approval. (*Missoula County Subdivision Regulations Article 3.6(2); DNRC Water Resources Division recommendation*)

Plat

19. The subdivider shall amend the plat to include bearings and distances for the areas shown as “No Build Zones – Areas with Slope Greater than 25%” subject to review and approval by OPG prior to final plat approval. (*Missoula County Subdivision Regulations Article 3.1(2)*)

20. The subdivider shall amend the plat as follows, subject to review and approval by OPG prior to final plat approval:

- A. Revise Note No. 1 as follows:

Acceptance of a deed for a lot within this subdivision shall constitute the assent of the owners to any future SID/RSID, based on benefit, for the upgrading of Six Mile Road ~~and internal road~~, including but not limited to paving, curbs and gutters, non-motorized facilities, street widening and drainage facilities, and may be used in lieu of their signature on an SID/RSID petition.

- B. Remove Note No. 2 from the plat.

(*Missoula County Subdivision Regulations Articles 3.7(1)(e) and 5.6(4)(m)*)

condition of approval requires the subdivider to provide an address signage plan to be approved by the Missoula County Fire Inspector prior to building permit approval.

9. In order to assure adequacy of installation of fire related improvements and compliance with conditions of approval to mitigate the impacts of the subdivision on public health and safety, the subdivider shall contribute a payment sufficient to reimburse the cost of service of fire related reviews and inspections by a county fire inspector. This is required as a condition of approval.

Conclusion of Law:

1. Fire service is available to the subdivision. The subdivision will meet fire protection standards if the recommended conditions of approval are imposed.

Law Enforcement

Findings of Fact:

1. The subdivision is located within the Missoula County Sheriff's Department's jurisdiction.

Conclusion of Law:

1. Missoula County law enforcement services will be available to the subdivision in a manner consistent with its distance from services and ease of access.

CRITERIA 3 AND 4: EFFECTS ON THE NATURAL ENVIRONMENT AND WILDLIFE AND WILDLIFE HABITAT

Findings of Fact:

1. Six Mile Creek runs north to south through the subject property, with associated riparian vegetation on both sides of the creek to varying distances from the creek centerline.
2. Article 3.13.3 of the Missoula County Subdivision Regulations requires that a Riparian Management Plan be reviewed and approved as a condition of subdivision approval. A condition of approval requires that the applicant's Riparian Resource Management Plan (RRMP) address Article 3.13.3 subsections (1) through (5) subject to review and approval by OPG prior to final plat approval.
3. Article 3.13.3(1) requires the management plan to address access through the riparian area. Article 3.13.5 prohibits road construction through riparian resource areas unless there is no other practical route to access the subdivision. The applicant's RRMP outlines mitigation of impacts to the Six Mile Creek riparian area resulting from improvements to the existing creek crossing and construction of the onsite road. Mitigation of the road construction activities through the riparian area as required by Missoula County Subdivision Regulations Articles 3.13.5(1) and 3.13.5(2), including but not limited to erosion and sedimentation control, grading disturbed areas, amending disturbed topsoil, and re-planting, is required as a condition of approval.
4. Article 3.13.3(2) requires the management plan to address low-impact use of the area. The applicant has designated both a "Riparian Resource Area/No Build/No Alteration Zone" and a "Riparian Buffer Area/No Build/No Alteration Zone" on the preliminary plat and in the RRMP. Activities prohibited in both areas include but are not limited to construction of any kind, livestock containment, mining, cutting, infill with foreign material or other debris, and planting of non-native vegetation.
5. The applicant's RRMP permits hay production, mowing, and livestock watering within both the Riparian Resource Area and the Riparian Buffer Area. Missoula County Rural Initiatives commented that it is critical that both areas be disturbed as little as possible, and that mowing should be prohibited in these areas. A condition of approval requires that the applicant's RRMP be revised to include new definitions for low impact use of the Riparian Resource Area and Riparian Buffer Area subject to review and approval by OPG.

Prohibitions in both areas per the definitions in the condition of approval include but are not limited to hay production, mowing, and livestock watering.

6. Article 3.13.3(5) requires the management plan to provide a buffer to mitigate development adjacent to areas of riparian resources. The applicant's RRMP and preliminary plat provide 20 ft.-wide "Riparian Buffer Area/No Build/No Alteration Zone" areas adjacent to the east and west boundaries of Six Mile Creek riparian vegetation.
7. Five Valleys Audubon Society commented that a number of species whose populations are in decline, including the Willow Flycatcher, Red-naped Sapsucker, MacGillivray's and Yellow Warblers, and Bullock's Oriole, have been noted on the subject property or can be expected there during certain parts of the year, and that the primary reason for their decline is loss of habitat similar to that found within the riparian area present on the site.
8. Five Valleys Audubon Society commented that scientific research findings suggest that habitat loss can be mitigated through provision of adequate buffering from development activity similar to that expected with this subdivision, and that the proposed 20 ft.-wide Riparian Buffer Area should be expanded to a minimum of 150 ft. in width.
9. Missoula County Rural Initiatives commented that, because the possibility of expanding the Riparian Buffer Area on the east side of Six Mile Creek is limited due to existing development, expanding the buffer area on the west side of the creek is particularly critical.
10. Missoula County Rural Initiatives commented that, because the Riparian Resource Area narrows to approximately 55 ft. in its northern third, a substantial buffer is necessary for wildlife habitat, stream health, and water quality.
11. Missoula County Rural Initiatives recommended that the "Riparian Resource Area/No Build/No Alteration Zone" illustrated on the preliminary plat be expanded to a minimum of 100 ft. on the west side Six Mile Creek, and expanded wherever possible on the east side.
12. A condition of approval requires that the plat and Riparian Resource Management Plan and Map be amended to expand the "Riparian Buffer Area/No Build/No Alteration Zone" on the west side of Six Mile Creek to 150 ft. and to 50 ft. on the east side of Six Mile Creek along its entire length, subject to review and approval by OPG prior to final plat approval.
13. Missoula County Public Works commented that the "Riparian Resource Area/No Build/No Alteration Zone" and the "Riparian Buffer Area/No Build/No Alteration Zone" be described on the plat with bearings and distances so they may be located in the event of a proposed or encountered encroachment. This is required as a condition of approval.
14. The proposed Development Covenants contain the "Living with Wildlife" provisions routinely recommended by Montana Fish, Wildlife & Parks (MTFWP).
15. The Missoula County Weed District commented that the subdivision as proposed requires a revegetation plan. This is required as a condition of approval.
16. The Missoula County Weed District recommended amendments to the "Weed Control" language in the Development Covenants. This is required as a condition of approval.

Conclusion of Law:

1. Potential adverse impacts to the natural environment, wildlife, and wildlife habitat will be mitigated if the proposed conditions of approval are imposed and the Development Covenants are enforced.

CRITERION 5: EFFECTS ON PUBLIC HEALTH AND SAFETY

Findings of Fact:

1. The Frenchtown Rural Fire District serves the property and the Missoula Sheriff's Department provides law enforcement services.
2. The subdivision will be served by individual wells and septic systems.

APPENDIX B – EXCERPTS FROM BIG BUCK STAFF REPORT

Plat

5. The following statement shall be included on the face of the plat subject to review and approval by OPG prior to final plat approval:

“The purchaser and/or owner of the lot or parcel understands and agrees that road construction, maintenance, and snow removal shall be the obligation of the owner or property owner’s association and that Missoula County is in no way obligated to perform such maintenance or upkeep until the road is brought up to standards and accepted by Missoula County for maintenance.” *(Missoula County Subdivision Regulations Article 5.6(4)(k); Missoula County Public Works recommendation)*
6. The following statement shall be included under the “RSID/SID Waivers” section on the face of the plat subject to review and approval by OPG prior to final plat approval:

“Acceptance of a deed for a lot within this subdivision shall constitute assent of the lot owner to waive the right to protest a future RSID/SID for a public or community water system for fire protection, based on benefit. The waiver shall run with the land and shall be binding on the transferees, successors, and assigns of the owners of the land.” *(Missoula County Subdivision Regulations Article 3.7(2))*
7. The subdivider shall amend the plat to designate all areas with slopes greater than 25% as “No-Build Zone – Steep Slopes” and describe those areas with bearings and distances so that they may be located on the ground, subject to review and approval by OPG prior to final plat approval. *(Missoula County Subdivision Regulations Articles 3.1(2), 5.2(13), and 5.6(3)(k))*
8. The subdivider shall include the following definition for “No-Build Zone – Steep Slopes” on the plat and in the development covenants for Big Buck Subdivision subject to review and approval by OPG prior to final plat approval:

“Areas with slopes greater than 25% as shown on the plat shall include prohibition of all primary and accessory structures, roads, and driveways.” *(Missoula County Subdivision Regulations Articles 3.1(2) and 5.2(13))*
9. The subdivider shall amend the plat to identify the “Buffer Zone” as “No-Build Zone – Resource Protection” and shall delineate these areas on the plat with a hatching pattern distinct from the “No-Build Zone – Steep Slopes” pattern, to be included in the plat legend, subject to review and approval by OPG prior to final plat approval. *(Missoula County Subdivision Regulations Articles 3.1(8), 3.1(9), and 5.2(4))*

10. The northern boundary of the “No-Build Zone – Resource Protection” area (formerly “Buffer Zone”) shall be designated on the plat with bearings and distances and shall be located a minimum of 20 feet north of the northernmost “Top of Coulee” line depicted on the preliminary plat, subject to review and approval by OPG prior to final plat approval. (*Missoula County Subdivision Regulations Articles 3.1(4), 3.1(8), 3.1(9), and 5.6(3)(k); Montana Fish, Wildlife and Parks recommendation*)
11. The subdivider shall replace the Buffer Zone Note on the plat with the following note, to be included in the development covenants for Big Buck Subdivision subject to review and approval by OPG prior to final plat approval:

“The No-Build Zone – Resource Protection shall include the prohibition of all buildings, structures, fences (except for wildlife friendly fencing), roads, motorized vehicle access (except for routine maintenance activities), parking, storage, landscaping or other development. It shall also prohibit any mining, filling with substances such as gravel, soil, slash, or other debris, or the planting of non-native vegetation such as lawn grasses.”
(*Missoula County Subdivision Regulations Articles 5.6(3)(g) and 5.6(3)(k)*)

Development Covenants

12. Section 2 “Wildlife” shall be revised as follows subject to review and approval by OPG prior to final plat approval:
 - A. Revise the second sentence of the first paragraph to include elk, wolf, and wild turkey as species with “occasional presence” on the subject property.
 - B. Replace the text in Subsection C with the following language:

“All garbage should be stored outdoors in bear-resistant containers or indoors in secure covered buildings that bears cannot get into. If stored indoors, garbage cans may not be set out until the morning of garbage pickup, and must be brought indoors no later than that same evening. (Consult Montana Fish, Wildlife & Parks for information on purchasing or constructing bear-resistant trash containers.)”
 - C. Revise the fourth and fifth sentences of Subsection D as follows:

“It is against state law (MCA 87-3-130) to purposely or knowingly attract any ungulates (deer, elk, antelope), bears, or mountain lions with supplemental food attractants (any food, garbage, or other attractant for game animals) or to provide supplemental feed attractants in a manner that results in ‘an artificial concentration of game animals that may potentially contribute to the transmission of disease or that constitutes a threat to public safety.’ Also, homeowners must be aware that wildlife such as wild turkey and deer might occasionally can attract mountain lions to the area.”
 - D. Revise the text in Subsection J as follows:

“All boundary fencing should be built to be wildlife friendly. Consider boundary fencing that is no higher than 3½ feet (at top rail or wire) and no lower than 18 inches (at bottom rail or wire) in order to facilitate wildlife movement and help avoid animals such as deer becoming entangled in the fence or injuring themselves when trying to jump a fence. We encourage the use of split rail fences. Contact FWP for a brochure or information on how to build fence with wildlife in mind.”

Law Enforcement

Findings of Fact:

1. The subdivision is located within the jurisdiction of the Missoula County Sheriff's Department.

Conclusion of Law:

1. Missoula County law enforcement services will be available to the subdivision in a manner consistent with its distance from services and ease of access.

CRITERIA 3 AND 4: EFFECTS ON THE NATURAL ENVIRONMENT AND WILDLIFE AND WILDLIFE HABITAT

Findings of Fact:

1. The subject property is located at the northern end of a large open grassland adjacent to Montana state-owned and privately-held land. The offsite portions of the grassland are characterized by several riparian areas associated with creeks draining the east slope of the Bitterroot Mountains. Much of the privately-held property is agricultural land.
2. The subject property slopes downward from west to east and contains a natural drainage feature in its southern one-third, labeled "Coulee" on the preliminary plat.
3. The subject property is located in elk, mule deer, and whitetail deer winter ranges.
4. Montana Fish, Wildlife & Parks (FWP) commented that elk filter onto the grassland habitat, including the subject property, from the adjacent state land. Elk can be expected to feed in the open areas on and adjacent to the subject property.
5. FWP commented that the open agricultural areas also provide habitat for grassland bird species, including red-tailed hawks and harriers. These species can be expected in the natural drainage located on the subject property.
6. Lot 3 of the proposed subdivision contains the entire onsite portion of the natural drainage feature. The preliminary plat depicts a "Buffer Zone" over the onsite portion of the drainage feature, as well as the onsite property immediately south of the drainage feature and adjacent to the open grassland.
7. The preliminary plat contains a definition of "Buffer Zone" that prohibits construction of permanent residential structures south of the northern "Top of Coulee" line depicted on the plat. The definition permits "small reasonable out-buildings, sheds, or barns."
8. FWP commented that there is no mechanism proposed for regulating the nature of construction in the "Buffer Zone," and that a "no build" provision is appropriate. A condition of approval requires that the "Buffer Zone" be labeled "No-Build Zone – Resource Protection," to be delineated with a hatching pattern distinct from the pattern used to depict the "No-Build Zone – Steep Slopes" areas and designated with bearings and distances, subject to review and approval by OPG prior to final plat approval.
9. A condition of approval requires the "Buffer Zone" note on the plat to be replaced with a definition for "No-Build Zone – Resource Protection," and that the same definition be included in the development covenants.
10. The preliminary plat depicts "Building Envelopes" on each of the lots. The envelopes represent 20 foot-wide setbacks from the property and individual-lot boundaries.
11. The Lot 3 "Building Envelope" line is offset from the east, west, and north lot boundaries a distance of 20 feet. The southern extent of the Lot 3 "Building Envelope" as proposed by the subdivider coincides with the northernmost "Top of Coulee" line on the preliminary plat.
12. FWP commented that, in order to enhance the utility of the southern one-third of the property for wildlife, the southern extent of the Lot 3 "Building Envelope" should be located a minimum of 20 feet north of the northern "Top of Coulee" line depicted on the preliminary plat.

13. A condition of approval requires the northern boundary of the “No-Build Zone – Resource Protection” area to be located a minimum of 20 feet north of the northernmost “Top of Coulee” Line and to be described on the final plat using bearings and distances.
14. The subdivider included a “Living with Wildlife” section in the development covenants. FWP recommended revising the 1st paragraph of the section, as well as Subsections C, D, and J. The recommended revisions are required as a condition of approval.
15. The Missoula County Board of County Commissioners commented that a section entitled “Land Management” and containing language and resources from the Department of Natural Resources and Conservation (DNRC) should be included in the development covenants. This is required as a condition of approval.
16. The Missoula County Weed District commented that the proposed development covenants satisfy the district requirements pertaining to noxious weed control and revegetation.

Conclusion of Law:

1. Potential adverse impacts to the natural environment, wildlife, and wildlife habitat will be mitigated if the recommended conditions of approval are adopted and the proposed development covenants are enforced.

CRITERION 5: EFFECTS ON PUBLIC HEALTH AND SAFETY

Findings of Fact:

1. The Missoula Rural Fire District serves the property and the Missoula County Sheriff’s Department provides law enforcement services.
2. The subdivision will be served by individual wells and septic systems.
3. The subject property contains slopes greater than 25%. The preliminary plat depicts these areas as “Slope 25% or More – No-Build Zones.” A condition of approval requires that the areas with slopes greater than 25% be titled “No-Build Zone – Steep Slopes,” and shown on the plat with bearings and distances. An additional condition requires a definition for the “No-Build Zone – Steep Slopes” be included on the face of the plat and in the development covenants.
4. The Missoula City-County Health Department recommended that language regarding the high radon potential in Missoula County be included in the development covenants. The proposed covenants contain the recommended language verbatim.
5. The Missoula City-County Health Department recommended revised language for the “Energy Efficiency” section included in the development covenants. A condition of approval requires inclusion of the proposed language in the development covenants.

Conclusions of Law:

1. Emergency services are available to the subdivision.
2. The subdivision will comply with public health and safety standards contained in the Missoula County Subdivision Regulations if the recommended conditions of approval are adopted.

C.) COMPLIANCE: This subdivision complies with:

1) SURVEY REQUIREMENTS

Finding of Fact:

1. The Seal of a Professional Land Surveyor or Engineer is required on all final plats, which states that the subdivision complies with Part 4 of M.C.A. 76-3.

Conclusion of Law:

1. This proposal meets the survey requirements.

APPENDIX C – MISSOULA COUNTY FIRE REVIEW STANDARDS

MISSOULA COUNTY FIRE-RELATED SUBDIVISION IMPLEMENTATION STANDARDS APPROVED BY BCC JULY 22, 2009

INTRODUCTION:

Article 3.1(1)(b) of the Missoula County Subdivision Regulations requires that subdivision proposals comply with applicable laws, ordinances, and regulations including but not limited to the Uniform Fire Code (UFC), also known as National Fire Protection Association Code 1 (NFPA 1). Chapter 2 of UFC/NFPA 1 states that “documents or portions thereof listed in [the] chapter are referenced in [UFC/NFPA 1] and shall be considered part of the requirements of this code (Ch. 2 § 2.1). Chapter 2 § 2.2 lists the following NFPA standards as referenced in and part of UFC/NFPA 1:

- NFPA 13 *Standard for the Installation of Sprinkler Systems* (2007)
- NFPA 13D *Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes* (2007)
- NFPA 22 *Standard for Water Tanks for Private Fire Protection* (2008)
- NFPA 24 *Standard for the Installation of Private Fire Service Mains and Their Appurtenances* (2007)
- NFPA 25 *Standard for the Inspection, Testing, and Maintenance of Water-based Fire Protection Systems* (2008)
- NFPA 1963 *Standard for Fire Hose Connections* (2003)

For development in suburban and rural areas, Chapter 2 § 2.2 of UFC/NFPA 1 references the following standards:

- NFPA 1141 *Standard for Fire Protection Infrastructure for Land Development in Suburban and Rural Areas* (2008)
- NFPA 1142 *Standard on Water Supplies for Suburban and Rural Fire Fighting* (2007)
- NFPA 1144 *Standard for Reducing Structure Ignition Hazards from Wildland Fire* (2008)

Subdivision applications and plats must comply with Article 3.1(1)(b) which references the Uniform Fire Code, and therefore must comply with the requirements contained in these NFPA and other standards referenced in UFC/NFPA 1.

Article 3.1(1)(f) requires that subdivision proposals comply with any regulation applicable to the land proposed for subdivision. For subdivisions in areas of Wildland Urban Interface (WUI), the Montana Department of Natural Resources and Conservation (DNRC) recommends following the *Fire Protection Guidelines for Wildland Residential Interface Development* (1993). Subdivision applications and plats describing property within the WUI should therefore comply with the recommendations contained in the DNRC document.

SOURCE AND ADEQUACY OF WATER SUPPLY FOR FIRE PROTECTION:

Article 3.7(1) requires that a water supply for fire protection be provided for all subdivisions by one of the following means subject to approval by the appropriate fire jurisdiction:

- (a) *Municipal water system with 1,000 gpm minimum;*
- (b) *Wells with 350 gpm well and a minimum 2,000 gallon storage;*
- (c) *Storage tanks/cisterns with fire hydrants attached;*
- (d) *Ponds, rivers;*
- (e) *Residential Sprinkler Systems - In the event that residential sprinklers are recommended by the appropriate fire jurisdiction and approved by the governing body as an acceptable alternative for fire protection, the requirements of installation shall be included in an agreement with the governing body which shall be filed with the plat.*

Water supplies for fire protection provided by any of the means described in Article 3.7(1)(b-d) shall be certified by a licensed professional engineer per Article 5.6(1). Residential sprinkler systems proposed as water supplies for fire protection per Article 3.7(1)(e) shall be certified by a licensed fire protection engineer demonstrating a National Institute for Certification in Engineering Technologies (NICET) Level 3 certification per ARM 24.183.1501. Per NFPA 1142 Ch. 4 § 4.1.3, minimum water supply shall be subject to increase by the AHJ to compensate for particular conditions such as the following:

- (1) Limited fire department resources
- (2) Extended fire department response time or distance
- (3) Potential for delayed discovery of the fire
- (4) Limited access
- (5) Hazardous vegetation
- (6) Structural attachments, such as decks and porches
- (7) Unusual terrain
- (8) Special uses and unusual occupancies

For any of the water supply for fire protection systems described in Article 3.7(1), the subdivider shall demonstrate proof of legal and physical access to the water source, equipment connection, or external fire protection system interface per Articles 5.2(5) and 5.2(8). Legal access shall be ensured by dedicated access easements of a sufficient width to accommodate the required physical access dimensions. Physical access shall be provided to the water source, equipment connection, or external fire protection system interface via roads capable of supporting emergency vehicles in all weather conditions. Roads shall provide an unobstructed horizontal clearance of 20 feet and an unobstructed vertical clearance of 13 feet 6 inches per Article 3.2.2.2(4). Access roads shall be maintained by the subdivider/developer until such time as a homeowner's association is capable of assuming maintenance responsibilities. Access roads shall remain passable at all times. Parking or turnout areas located outside of the drive-lane shall be provided for emergency vehicles along roads providing access to the water source, equipment connection, or external fire protection system interface. Water supply access road design and construction shall be reviewed and approved by the appropriate AHJ and/or the Inspector per Article 3.2.2.2(4)(c).

The following is an analysis of how each of the options for water supply for fire protection described in Article 3.7(1) of the Subdivision Regulations is implemented per UFC/NFPA 1 and those documents referenced in Chapter 2 § 2.2:

(a) Municipal water system with 1,000 gpm minimum flow

Municipal water systems with 1,000 gpm minimum flow are acceptable per NFPA 1142, Ch. 8 § 8.3. The presence and adequacy of the municipal water system shall be confirmed by the AHJ and/or the Inspector during the Agency Sufficiency Review period and prior to preliminary plat approval.

(b) Wells with 350 gpm flow and a minimum 2,000 gallon storage

Wells with 350 gpm flow and a minimum of 2,000 gallons of storage are not considered adequate water supply for fire protection per NFPA 1142 because the minimum storage_tank size required per Ch. 4 § 4.3.2 is greater than 2,000 gallons.

(c) Storage tanks/cisterns with fire hydrants attached

Storage tank or cistern volume for residential applications shall be calculated per NFPA 1142, Ch. 4 § 4.3 and shall not be less than 3,000 gallons per Ch. 4 § 4.3.2. The minimum fire flow provided from the storage tank or cistern with a pressurized hydrant shall be calculated according to Ch. 4 § 4.6.1. The minimum flow at suction provided from the storage tank or cistern with a dry hydrant connection shall be 1,000 gpm per NFPA 1142, Ch. 8 § 8.3. Installation of dry hydrant connections to storage tanks or cisterns shall be approved by the AHJ. Minimum water supply shall be calculated on a per-structure basis according to the following equation:

$$WS_{\min} = (VS_{\text{tot}} / \text{OHC})(\text{CC})(1.5)$$

where:

WS_{\min} = Minimum Water Supply

VS_{tot} = Total Structure Volume;

OHC (Occupancy Hazard Classification) = 7

CC (Construction Classification) = 1.5

Storage tank or cistern volume for commercial applications shall be determined per Ch. 18 § 18.3 and 18.4 of UFC/NFPA 1, as well as Table 18.4.5.1.2.

NFPA 1142 outlines additional storage tank/cistern requirements including but not limited to the following:

- The storage tank/cistern shall be located within a common area or an appropriate easement.
- The maintenance and associated costs of a storage tank/cistern system shall be assumed by the subdivider/developer until such time as a homeowner's association is capable of assuming responsibilities. Full-flow testing shall be performed twice

annually and results shall be provided to the appropriate AHJ and the Missoula County Fire Inspector.

- The fire department connection to a storage tank/cistern system shall be fitted with a coupling device appropriate for the AHJ and shall be approved by the AHJ and the Missoula County Fire Inspector.
- The storage tank/cistern outlet shall be constructed of galvanized pipe and the coupling device shall be located 27 to 32 inches above ground level. The outlet shall be placed in a location approved by the AHJ, the Missoula County Fire Inspector, and Missoula County Public Works. Alternatively, the connection may be a fire hydrant approved by the AHJ, the Missoula County Fire Inspector, and Missoula County Public Works.

The preliminary design of a storage tank/cistern system, including but not limited to the items described above, shall be reviewed and approved by the AHJ and/or the Inspector during the Agency Sufficiency Review period and prior to preliminary plat approval. The AHJ and/or the Inspector shall review and approve engineered plans and confirm and provide written assurance that the approved storage tank/cistern design is installed and operational prior to final plat approval. The storage tank/cistern system requirements, including but not limited to maintenance, access, and biannual testing provisions, shall be included in the development covenants subject to review and approval by the AHJ and/or the Inspector prior to final plat approval.

(d) Ponds, rivers

Water supply requirements for streams, rivers, ponds, or other surface impoundments shall be determined per NFPA 1142 Ch 4 § 4.3, and availability shall be calculated per Ch 7 § 7.1.5. More particularly:

- For a supply flowing from a stream or river, the quantity of water considered is the minimum rate of flow (at not over 15 ft. total lift) during a drought having an average 50-year (2.0 percent chance) recurrence interval. A minimum flow rate of 250 gpm without interruption for 2 hours as determined by a registered/licensed professional engineer, hydrologist, or similarly qualified person is considered a dependable supply. The maximum rate of flow is determined by testing using the pumper(s), hose arrangement, and hydrant normally used at the site.
- The pond or otherwise-impounded surface supply shall be located within a common area or an appropriate easement dedicated in perpetuity for the purpose of providing a water supply for fire protection.
- For a pond or otherwise-impounded surface supply, quantity of water considered is the minimum rate of flow (at not over 15 ft. total lift) during a drought having an average 50-year (2.0 percent chance) recurrence interval. A minimum of 30,000 gallons of pumpable impoundment water or a minimum flow rate of 250 gpm without interruption for 2 hours (certified by a registered/licensed professional engineer, hydrologist, or similarly qualified person) is considered a dependable supply. The maximum rate of

flow is determined by testing using the pumper(s), hose arrangement, and hydrant normally used at the site.

The presence and adequacy of a stream, river, pond, or otherwise-impounded surface water supply shall be reviewed and approved by the AHJ and/or the Inspector during the Agency Sufficiency Review period and prior to preliminary plat approval. The AHJ and/or the Inspector shall review and approve engineered plans for the approved system and confirm and provide written assurance that the system is installed and operational prior to final plat approval. The subdivider/developer shall identify the approved surface water feature as the approved water supply for fire protection in the development covenants, and shall include in the covenants all access and maintenance provisions described above.

Per NFPA 1142, the following additional requirements apply to streams, rivers, ponds, or otherwise-impounded surface water supplies:

- The maintenance and associated costs of a stream, river, pond, or otherwise-impounded surface water supply shall be assumed by the subdivider/developer until such time as a homeowner's association is capable of assuming responsibilities. Full-flow testing shall be performed twice annually and results shall be provided to the appropriate AHJ and the Missoula County Fire Inspector.
- The fire department connection to a hydrant or approved drafting facility shall be fitted with a coupling device appropriate for the AHJ and shall be approved by the AHJ and the Missoula County Fire Inspector.

(e) Residential Sprinkler Systems - In the event that residential sprinklers are recommended by the appropriate fire jurisdiction and approved by the governing body as an acceptable alternative for fire protection, the requirements of installation shall be included in an agreement with the governing body which shall be filed with the plat

Review of residential sprinkler systems shall be conducted by the AHJ and/or the Inspector according to NFPA 13, 13R, and/or 13D, as well as NFPA 1142, standards.

The subdivider/developer shall indicate in the application packet that residential sprinklers are the preferred option for meeting the water supply for fire protection requirement described in Article 3.7(1) of the Missoula County Subdivision Regulations. The AHJ shall approve or deny the request to install residential sprinklers as fire protection. If deemed necessary, the AHJ and/or the Inspector shall require an additional water supply for fire protection during the Agency Sufficiency Review period and prior to preliminary plat approval. Residential sprinkler system installation, if approved by the governing body, shall be included as a condition of subdivision approval.

The subdivider/developer shall include the following statement in a Building Permit Requirements section of the development covenants subject to review and approval by the AHJ and/or the Inspector prior to final plat approval:

Installation of interior residential fire sprinklers that meet Uniform Fire Code, NFPA 1, and NFPA 13D standards is required in each new home for the

purpose of fire protection. Plans for installation of interior residential fire sprinklers shall be approved by [insert the AHJ and/or the Inspector] prior to Building Permit approval. Fire sprinkler installations shall be inspected and approved by [insert the AHJ and/or the Inspector]. Failure to install residential fire sprinklers in any new home may subject the entire subdivision to the cost of installation of a shared water source for fire fighting purposes. This requirement shall not be changed or deleted without governing body approval.

All lot owners shall provide a written, signed statement to the Office of Planning & Grants (OPG) acknowledging and agreeing to the residential sprinkler system requirements of the conditions of subdivision approval prior to building permit approval. The lot owner shall submit residential sprinkler system plans to the AHJ and/or the Inspector for review and approval prior to building permit approval. The AHJ and/or the Inspector shall inspect installation of the residential sprinkler system prior to the building inspection to cover the building framing with insulation and drywall. The AHJ and/or the Inspector shall test and inspect the approved residential sprinkler system following installation and prior to issuance of an occupancy permit.

DESIGN OF ROADS AND DRIVEWAYS FOR EMERGENCY ACCESS:

Approved means of access, consisting of roads, roadways, bridges, fire lanes (including driveways), parking lots, or a combination thereof, shall be provided for all buildings more than 400 square feet in ground floor area in accordance with Article 3.2.2.2 of the Missoula County Subdivision Regulations and NFPA 1141. Means of access shall extend to within 150 feet of all portions of a facility and all of the exterior walls of the first story of a building as measured by an approved route around the exterior of the building or facility per NFPA 1141 Ch. 6 § 6.1.1. Means of access shall have an unobstructed drivable width of not less than 20 feet, including security gates if installed, and an unobstructed vertical clearance of not less than 13 feet 6 inches. If security gates are installed, a lock box for fire department access may be required. Means of access shall be designed and maintained to support the imposed loads of fire apparatus and shall be surfaced so as to provide all-weather driving capabilities per Ch. 5 § 5.2.2. A road maintenance agreement shall be in place and shall be referenced in the development covenants for all private roads.

Dead-end means of access in excess of 150 feet in length shall be provided with an approved fire apparatus turning area per UFC/NFPA 1 Ch. 18 §18.2.2.5.4. Cul-de-sacs in excess of 1,200 feet in length shall be provided with approved intermediate turnarounds at a maximum of 1,200 foot intervals per NFPA 1141 Ch. 5 § 5.1.4. All fire apparatus turning facilities shall have a radius of not less than 35 feet. Fire apparatus roads up to 26 feet in width shall be posted on both sides as a fire lane and parking shall not be permitted on either side of the street or road. Fire apparatus roads of a width greater than 26 feet shall be posted on one side of the road as a fire lane and parking shall not be permitted on one side of the street or road. The maximum grade of all newly-constructed roads and driveways shall be limited to ten percent (10%).

With the exception of fire-lane posting requirements, the above-described standards for means of access shall apply to all driveways greater than 150 feet in length. All portions of the above-described standards applicable to a subdivision shall be included in the development covenants, subject to review and approval by the AHJ and/or the Inspector prior

to final plat approval. Plans for and installation of roads in accordance with but not limited by these standards shall be reviewed and approved by the AHJ and/or the Inspector prior to final plat approval. Plans for and installation of driveways in accordance with but not limited by these standards shall be reviewed and approved by the AHJ and/or the Inspector prior to building permit approval.

FUEL MITIGATION IN WILDLAND URBAN INTERFACE (WUI) AREAS:

Subdivisions located within Wildland Urban Interface (WUI) areas shall complete fuel mitigation work. Fuel mitigation requirements shall be applied to all home sites and shall meet the Montana Department of Natural Resources and Conservation (DNRC) *Fire Protection Guidelines for Wildland Residential Interface Development* (1993) and NFPA 1144, as well as Article 5.2(10) and Exhibit 8 of the Missoula County Subdivision Regulations. In addition to fuel mitigation, the AHJ and/or the Inspector may require on-site water storage for wildland fire suppression. Plans for fuel mitigation shall be reviewed and approved by the AHJ and/or the Inspector prior to final plat approval. Fuel mitigation work shall be completed subject to review and approval by the AHJ and/or the Inspector prior to building permit approval.

VISIBLE ADDRESS SIGNAGE:

All properties within a subdivision shall be properly addressed with address signs clearly visible from the street in all light conditions per NFPA 1141. Address sign numbering shall be a minimum of 4 inches in height and shall be of a contrasting color to the background. Permanent street signs of a type approved by Missoula County Public Works shall be installed and in place before commencing combustible construction. During construction, the individual number assigned to a given structure shall be displayed on the front of the residence toward the street on which the property is addressed so that it may be clearly identified by responders in the event of an emergency. Additional address identification may be required at the driveway entrance and shall be clearly visible in all light conditions. The subdivider/developer shall provide a plan for visible address signage, to be included in the development covenants, subject to review and approval by the AHJ and/or the Inspector prior to final plat approval.

SEVERABILITY:

If any section, subsection, sentence, clause, phrase or word of the preceding fire review standards is or becomes illegal or is for any reason held to be invalid, such decision shall not affect the validity of the remaining portions of the standards. The Missoula County Board of County Commissioners hereby declares that it would have implemented these fire review standards and each section, subsection, sentence, clause, phrase and words thereof, irrespective of the fact that any one or more sections, subsections, sentences, clauses, phrases or words have been declared illegal or invalid, and if for any reason the standards should be declared illegal or invalid, then the remaining fire review provisions will be in full force and effect.