

MCNETT FLATS SUBDIVISION

Major Subdivision Application

Section 7: Environmental Assessment

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1. IMPACT ON AGRICULTURE

The following narrative sections identify the proposed subdivision's potential adverse impacts to agriculture and describes proposed avoidance and mitigation efforts that will be used to reasonably minimize those impacts to agriculture.

A. Agriculture Production

The proposed subdivision is located on land which is currently and has historically been in use for agricultural production of hay and alfalfa. Approximately 17 acres of the 20.21-acre parcel is used for production of hay and alfalfa. A 17-acre area used for production of hay and alfalfa has limited the ability for a family to provide suitable income. The area used for agricultural production is shown on the agriculture map exhibit. There is no current or known prior timber production on the parcel.

The Montana State University (MSU) Extension Office provides the nominal cash rate for leased agricultural properties. According to the Extension Office's database of Montana Cash Lease Rates, the 2019 annual value of an acre of leased property in Missoula County ranges from \$10.50 for pasture land, \$15 for non-irrigated cropland, to \$36 for irrigated cropland. Using these rates, the annual irrigated leasable value of the entire 20.21-acre parcel is \$727.56. These rates provide an example of the limited value of the parcel for agriculture.

B. Proposed Mitigation

The proposed subdivision will remove the above 17 acres of agricultural land from production. No timber land will be removed from production. The proposed subdivision will represent the loss of lands of agricultural importance. The subdivision property is presently used for agriculture and is irrigated. The maximum density allowed by the proposed zoning will serve as mitigation to loss of important agricultural lands within the greater Missoula region. According to the City of Missoula Growth Policy 2035, 9,000 additional residential dwelling units will be required within the Urban Growth Area to accommodate anticipated future growth. At the maximum potential density allowed by the zoning, the proposed subdivision could accommodate 7.5% of the projected growth on 20.21 acres. The proposed subdivision would minimize loss of agricultural lands while maximizing the growth accommodated on a single parcel.

Presently, the parcels to the east, west, and north of the proposed subdivision are also used for agricultural operations. There are known plans for additional development to the north and west. The parcels to the south contain the 44 Ranch and Flynn Ranch residential developments. Proposed mitigation to limit potential adverse impacts to adjacent offsite agricultural operations and conflicts with lot owners within the proposed subdivision include the following:

Weed Management Plan: This project will be required to establish a Weed Management Plan. The Weed Management Plan will detail the current conditions of the site, the weed management goals for the subdivision, and specify the weed management techniques which

must be followed to ensure noxious weeds are actively managed on the property. The Weed Management Plan will act as mitigation to ensure that weeds on the subdivision property are not adversely impacting remaining adjacent agricultural activities.

Covenant Language: In addition, language will be included in the proposed covenant to ensure that future owners of lots within the subdivision are fully aware of any ongoing adjacent offsite agricultural operations:

Notice of Adjacent Agricultural Activities – The Mcnett Flats Subdivision is located directly adjacent to an existing agricultural operation. Agricultural practices can sometimes cause some discomfort and inconveniences for neighboring residents. Many practices are a necessary function of certain agricultural operations and are protected when they are in accordance with the law.

Agricultural activities you may experience can include, but are not limited to, the following – noise, odors, fumes, dust, fertilizers, smoke, pesticides, insects, farm personnel and truck traffic, visual impacts, nighttime lighting, operation of machinery, and the storage, warehousing, and processing of agricultural products or other inconveniences or discomforts associated with the protected agricultural operations 24 hours a day.

The proposed covenant will also include Montana Fish, Wildlife, and Parks' (FWP) recommended family pet controls.

Stormwater Management: All stormwater runoff generated by the new impervious surfaces (roads, sidewalks, parking lots, buildings, etc.) will be retained onsite through installation of stormwater sumps. The standard 8' sumps will be constructed per City of Missoula STD-302 and will retain stormwater runoff onsite through infiltration. Stormwater will be routed to the sumps through swales, lot grading, and roadside gutters. Thus preventing stormwater from flowing onto any adjacent property, and mitigating any potential adverse impacts to adjacent agricultural operations.

Fences: Existing fences protect adjacent agricultural lands along the eastern and western boundaries of the subdivision property. The parcel to the west is currently undergoing subdivision review for residential development, so the fence line along the western boundary will likely not need to be maintained to protect adjacent agricultural land. The fence along the eastern property boundary will be located within the proposed irrigation easement and is unlikely to be disturbed during construction of the subdivision. This fence will protect the agricultural property to the east.

C. Agricultural Soils

According to the Natural Resources and Conservation Service (NRCS) Soil Survey, included as an attachment to this environmental assessment, the soils across the subdivision property are classified as Desmet Loam. These soils are classified as prime farmland, if irrigated. In addition to the NRCS Soil Survey, an independent agricultural soils assessment was conducted per Section 5-020.14M of the City of Missoula subdivision regulations as part of the overall geotechnical investigation of the property. The geotechnical report containing the agricultural soils assessment is included as an attachment to this report.

The proposed subdivision will connect to the City of Missoula public sewer system. The parcel is currently within Missoula County's C-A3 and C-RR1 zoning districts; however, a new zoning designation of B2-2 is requested upon annexation. The parcel is presently served by an irrigation system, described in detail in the following section.

2. IMPACT ON AGRICULTURAL WATER USER FACILITIES

The following narrative sections identify any potential adverse impacts to agricultural water user facilities and describe proposed avoidance and mitigation efforts that will be used to reasonably minimize potentially significant impacts to agricultural water user facilities.

A. Description of Facilities

The parcel is presently and historically served by an existing agricultural irrigation system, which also serves the adjacent parcels to the north. The configuration of the existing irrigation system is depicted in Figure 1. Map of existing agricultural water user facilities and irrigation system. Figure 1.



Figure 1. Map of existing agricultural water user facilities and irrigation system.

The existing irrigation system begins at Point A (Figure 1); at this point, a privately-owned lateral irrigation ditch branches from the east-west Flynn-Lowney Ditch at a head gate near the end of Tipperary Way. This non-enclosed, non-lined ditch flows north from the Flynn-Lowney ditch, providing the house at 2315 Flynn Lane (Point B) with lawn and garden irrigation. It is active from May 1 through November 1. Ownership information for the irrigation ditch is as follows:

Owner: Hellgate Valley Irrigation Ditch Company
Contact: Maureen McKinnon-Edwards
(406) 360-4870

From Point B, the ditch flows north through the subdivision property, along the eastern boundary line (Point C). The appearance of the ditch on the subdivision property near this point is depicted in Figure 2. A pump system at Point D, approximately 1,300 feet to the north of the proposed subdivision boundary, supplies irrigation water to the center pivots visible on the parcels to the north, as well as a buried irrigation lateral pipe, depicted in blue, which carries water south to the subdivision property.

The buried lateral pipe has connection risers, spaced approximately 60 feet apart, to allow for connection of wheel lines. The subdivision property has an existing wheel line and several risers, shown in Figure 3. At Point E, an above-ground lateral pipe is connected to a riser from the buried pipe on the subdivision property. This pipe, depicted in orange, supplies irrigation water to a wheel line located on the property to the northwest (Point F). The connection between the buried pipe on the subdivision property and this above-ground lateral pipe is shown in Figure 4.



Figure 2. Existing irrigation ditch near the eastern boundary of the proposed subdivision.



Figure 3. Typical riser connection and wheel line found on the subdivision property.



Figure 4. Connection between buried irrigation pipe and above-ground lateral pipe.

There are no wells on the subdivision property. According to the Montana Department of Natural Resources and Conservation Water Rights Query System, there are no existing water rights associated with the subdivision property. Therefore, the proposed subdivision will not involve abandonment or transfer of water rights.

B. Impacts to Existing Facilities

The proposed subdivision will impact the existing agricultural water user facilities on the parcel. Owing to the proposed mixed-use of all lots, irrigation access to the ditch and buried lateral pipe will not be provided to any of the lots within the proposed subdivision. If the average lot size within the subdivision is less than one acre, the City of Missoula requires provision for notification that lots within the subdivision are classified as irrigated land and may continue to be assessed for irrigation water delivery even though the water may not be deliverable to the lots. As the average lot size within the proposed subdivision will be greater than one acre, this provision will not be necessary.

Irrigation ditches provide numerous users throughout the Missoula Valley with irrigation water. It is critical, during design and construction of the proposed subdivision, to ensure that the design and construction does not interfere with the movement, availability, or maintenance of irrigation water, the existing ditch, or the adjacent agricultural water user facilities. The proposed subdivision includes the following alterations to the existing system which are intended to maintain access to the irrigation and allow maintenance for the adjacent agricultural water user facilities:

Ditch Reconstruction: Due to the fact that the irrigation ditch along the eastern property boundary supplies water to several agricultural users to the north, it is critical to maintain the means to route water through the subdivision. To mitigate this issue, this project proposes routing the irrigation ditch through a buried culvert on a similar alignment to the existing ditch

where the ditch must flow beneath the proposed roadway. The irrigation ditch flows through two existing culverts – both beneath driveways at the end of Tipperary Way. The proposed culvert, which will be approximately 105 feet long, will be constructed of 35" x 24" corrugated steel arch pipe to match the capacity of existing culverts and ensure that the full flow of the irrigation ditch can be accommodated without flooding.

Irrigation Easement: To ensure proper operation, ensure proper and sufficient access for future maintenance or replacement of the irrigation ditch, and to protect the proposed culvert from accidental damage, a 20-foot wide easement will be established along the eastern boundary of the property. The proposed culvert will be routed along the centerline of the easement.

Removal of Buried Lateral: As the lots within the proposed subdivision will not require access to the agricultural water user facilities, the buried lateral pipe discussed previously will be removed within the boundaries of the subdivision property. The pipe will be terminated in the parcel to the north of the proposed subdivision to maintain access for other users. It is important to note that the east-west above-ground lateral, which serves the wheel line on the parcel to the northwest, is connected to the buried pipe on the subdivision property. The subdivider will coordinate the relocation of this connection to a riser on the parcel to the north of the proposed subdivision.

Owner Approval: The subdivider will receive approval from the Hellgate Valley Irrigation Ditch Company prior to disturbing the existing ditch or buried pipe. Coordination with the owner and adjacent water users will ensure that construction of the proposed improvements does not alter availability of or access to agricultural irrigation water for the adjacent users.

Stormwater Management: All stormwater runoff generated by the new impervious surfaces (roads, sidewalks, parking lots, buildings, etc.) will be retained onsite through installation of stormwater sumps. The standard 8' sumps will be constructed per City of Missoula STD-302 and will retain stormwater runoff onsite through infiltration. Stormwater will be routed to the sumps through swales, lot grading, and roadside gutters, thus preventing stormwater from flowing into any adjacent agricultural water user facilities, and thus mitigating any potential adverse impacts to these facilities.

3. IMPACT ON THE NATURAL ENVIRONMENT

The following narrative sections identify any potential adverse impacts and describe proposed avoidance and mitigation efforts that will be used to reasonably minimize potentially significant impacts to the natural environment.

A. Public Lands

The proposed subdivision is not adjacent to any public land. Therefore, there are no potential adverse impacts to adjacent public land uses, land management policies of adjacent or nearby public land, or access to public lands as a result of the project.

B. Historical Features

According to the State Historic Preservation Office (SHPO), there are two listed historical features within Section 12 of Township 13 North, Range 20 West. The first is an historic agricultural structure dating from 1880-1889. This structure is privately owned; and is not adjacent to the property. The Flynn-Dougherty ditch within Section 12 is considered an historic feature and will not be affected by this project. As there will be no disturbance to any historical features, SHPO has not recommended a cultural resource inventory for the project. Should structures need to be altered, or if cultural materials are inadvertently discovered during the project, the SHPO should be contacted and the site investigated.

There are no known historic, paleontological, archaeological, or cultural sites, structures, or objects on the proposed subdivision property.

C. Water Rights

According to the Montana Department of Natural Resources and Conservation Water Rights Query System, there are no existing water rights associated with the subdivision property. Therefore, the proposed subdivision will not involve abandonment or transfer of water rights. No water rights have been severed from the subject property.

D. Groundwater

Signs of high groundwater were not encountered during the geotechnical investigation of the property. In addition, the NRCS Soils Survey specifies a depth to water table of more than 80 inches. Potential adverse impacts to groundwater will be mitigated through construction and maintenance of water, sanitary sewer, and storm drainage infrastructure which meets the Montana Department of Environmental Quality, City of Missoula, and Montana Public Works Standards. No wells or subsurface wastewater treatment systems will be constructed within the proposed subdivision, as it will be served by the City of Missoula public water and sanitary sewer systems.

Other potential sources of groundwater contamination include road rights-of-way and point sources. Road rights-of-way can potentially contaminate groundwater through spills

containing VOCs, SOCs, nitrates, or pathogens leaching into adjacent soils. Management recommendations include avoiding over-application of chemicals, following best management practices (BMPs), and taking precautions for cleanup of spills. Point sources can include industrial or commercial uses leaching VOCs into groundwater. The proposed mixed use of the subdivision will mitigate this risk, and steps will be taken to report any land use negligence within the subdivision. The proposed subdivision is not expected to pose significant risk to groundwater through either of these potential contaminant sources.

E. Surface Water

The boundary of the proposed subdivision is approximately 2,400 feet to the south of Grant Creek and approximately 7,000 feet to the north of the Clark Fork River. According to FEMA Flood Insurance Rate Map 30063C1190E, the property is not within a FEMA-designated 100-year or Shaded Zone X floodplain. The FIRM for the property has been included as an attachment to this report.

The property is within the Grant Creek drainage basin; according to the FIRM map, the property is in Zone "A", or area where no base flood elevations have been determined. However, there are no proposed building sites, and no portion of the subject property, within 20 vertical feet and 1,000 horizontal feet of Grant Creek.

A small private irrigation ditch runs along the eastern boundary of the property. This ditch is supplied by Flynn-Lowney ditch, at a head gate located at the end of Tipperary Way, approximately 1,500 feet to the south of the proposed subdivision. From the head gate, the irrigation ditch runs approximately 6,200 feet to the north, where it drains into Grant Creek. It provides lawn and garden irrigation for the house at 2315 Flynn Lane, and agricultural irrigation for the agricultural parcels adjacent to it north of the proposed subdivision. It is active from May 1 to November 1 annually.

There are no wetlands present on or adjacent to the subject property. Additionally, there are no water quality permits (i.e. 310 Permit, SPA 124 Permit, Floodplain Permit, Section 404 Permit, 318 Authorization, or Navigable Rivers Land Use License) which are applicable to this project. Note that an historic arm of Grant Creek is shown crossing the parcel on several available maps, such as the USGS topographic quadrangle. These historical maps show a former channel which has not conveyed water since the 1950s, when Grant Creek was channelized and rerouted to its present location to the north of the parcel. The historic arm of the creek will not impact the proposed development and no mitigation measures are needed for adverse impacts.

F. Vegetation & Riparian Resource Areas

There are no riparian resource areas located on the subdivision property. The subdivider will be required to submit and follow a Revegetation Plan for Disturbed Sites. This plan will establish proper revegetation efforts will be employed for all of the disturbed areas within the project site. Adherence to the requirements of the Revegetation Plan for Disturbed Sites reasonably minimizes and mitigates potentially significant adverse impacts to the natural environment.

In addition, the subdivider will be required to establish a Weed Management Plan. Through coordination with the Missoula County Weed District, the Weed Management Plan will detail the current conditions of the property, the weed management goals for the subdivision, and will specify weed management techniques that must be followed to ensure noxious weeds are managed on the property in perpetuity. Adherence to the requirements of the Weed Management Plan reasonably minimizes possible weed-related adverse impacts to the natural environment.

4. IMPACTS ON WILDLIFE AND WILDLIFE HABITAT

The following narrative sections identify any potential adverse impacts and describe proposed avoidance and mitigation efforts that will be used to reasonably minimize potentially significant impacts to wildlife and wildlife habitat.

A. Species Types

According to GIS data available from Montana Fish, Wildlife, and Parks, the proposed subdivision is within the known range distribution of grizzly bear, ruffed grouse, pheasant, white-tailed deer, Hungarian partridge, gray wolf, dusky grouse, black bear, mountain lion, spruce grouse, and sharp-tailed grouse. In addition, foxes have been observed in the vicinity and raptors frequently use the property to forage and hunt for food. However, the subject property is currently used for agriculture as irrigated pasture and likely only directly serves as habitat for white-tailed deer, small mammals, and some bird species. The property was searched for animal dens on August 20, 2020, and no large dens were found. There are existing residential, commercial, and industrial land uses within 3,500 feet of the proposed subdivision to the north, east, and south, but there are also nearby agricultural areas and open space associated with the airport, so some use by wildlife in the vicinity would be expected to continue.

B. Wildlife Mitigation

The proposed subdivision, at the most intensive density allowed by the proposed zoning, will represent the loss of wildlife habitat, specifically foraging land for white-tailed deer, small mammals, and raptor species. The subdivision property is presently used for agriculture, and does not contain any shorelines, marshland, sensitive areas, or critical wildlife habitat requiring protection. The maximum density allowed by the proposed zoning will serve as mitigation to loss of wildlife habitat within the greater Missoula region. According to the City of Missoula Growth Policy 2035, 9,000 additional residential dwelling units will be required within the Urban Growth Area to accommodate anticipated future growth. At the maximum potential density allowed by the zoning, the proposed subdivision could accommodate 7.5% of the projected growth on 20.21 acres. The proposed subdivision would minimize habitat loss while maximizing the growth accommodated on a single parcel.

Additionally, measures will be introduced within the proposed covenant to minimize conflicts between residents and wildlife, including the following:

- Native vegetation shall be planted for landscaping and revegetation.
- No portion of any lot shall be used or maintained as a dumping ground. Any rubbish, trash, or other waste will be stored in sanitary containers and removed on at least a weekly basis.
- Salt blocks and feeding platforms for deer or mineral blocks for horses or other livestock shall not be allowed on any subdivision lot.
- Pet food shall only be stored indoors. Pets shall not be allowed to run freely and potentially harass wildlife. The keeping of animals other than dogs and cats shall not be allowed.

No potentially significant adverse impacts to wildlife or wildlife habitat have been identified in association with the proposed subdivision. The proposed measures above will mitigate any minor impacts to wildlife.

C. Wildlife Maps

The nearest known big game winter range habitat is approximately two miles to the north of the proposed subdivision, in the north hills area north of Interstate 90. The proposed subdivision is also not located within a grizzly bear linkage corridor – according to the University of Montana Grizzly Bear Migration Corridor Conservation website, the nearest grizzly bear linkage corridor is well to the east of Missoula, near Clinton. The subdivision property does not support any waterfowl nesting areas, habitat for rare or endangered species, wetlands, or riparian resource areas.

5. IMPACTS ON PUBLIC HEALTH AND SAFETY

The following narrative sections identify any potential adverse impacts and describe proposed avoidance and mitigation efforts that will be used to reasonably minimize potentially significant impacts to public health and safety.

A. Air Stagnation Zone

The proposed subdivision is located within the Missoula Air Stagnation Zone. All new roads, parking areas, and driveways within the proposed subdivision shall be paved to minimize airborne dust. It is illegal to burn piles of leaves or grass inside the Missoula Air Stagnation Zone.

B. Airport Influence Area

The proposed subdivision is located within the Airport Influence Area. The 65-decibel noise level contour is approximately 650 feet to the north of the northern boundary of the subdivision. A portion of the northeast corner of the property is located within the Extended Approach and Departure Area for Runway 29 of Missoula International Airport. Development within the Airport Influence Area is subject to review and approval of the Missoula County Airport

Authority (MCAA). The Airport Influence Area designation is intended to regulate development surrounding the Airport that is not compatible with airport operations.

C. Avoidance and Mitigation of Hazards

There are no known health and safety hazards on or within the vicinity of the subdivision property. There are no high-pressure gas lines or high-voltage power lines on the property. The nearest Superfund sites are the Smurfit Stone Mill and Milltown Reservoir, both of which are more than five miles from the proposed subdivision and will not pose any risk to future residents of the subdivision. There are no hazardous waste sites on or adjacent to the property – all adjacent parcels are used for agricultural or residential uses. Additionally, there are no abandoned landfills, mines, waste sites, or sewage treatment plants in the vicinity of the project.

According to the Montana Bureau of Mines and Geology Publication XXX: Probabilistic Earthquake Ground Shaking Maps for the State of Montana, the 10% probability of exceedance in 50 years peak horizontal acceleration for Missoula is less than 0.1. This is the lowest category representing weak to moderate shaking. The proposed subdivision is not in an area identified as a high seismic hazard.

D. Nuisances

The proposed subdivision is adjacent to several parcels which are currently and historically used for agricultural operations. Agricultural operations can produce nuisances to residents of the proposed subdivision, including dust and noise. Language will be included in the proposed covenant to ensure that future owners of lots within the subdivision are fully aware of any ongoing adjacent offsite agricultural operations:

Notice of Adjacent Agricultural Activities – The Mcnett Flats Subdivision is located directly adjacent to an existing agricultural operation. Agricultural practices can sometimes cause some discomfort and inconveniences for neighboring residents. Many practices are a necessary function of certain agricultural operations and are protected when they are in accordance with the law.

Agricultural activities you may experience can include, but are not limited to, the following – noise, odors, fumes, dust, fertilizers, smoke, pesticides, insects, farm personnel and truck traffic, visual impacts, nighttime lighting, operation of machinery, and the storage, warehousing, and processing of agricultural products or other inconveniences or discomforts associated with the protected agricultural operations 24 hours a day.

6. COMMUNITY IMPACT REPORT

The following narrative sections identify potential adverse impacts of the proposed subdivision and describe proposed avoidance and mitigation efforts that will be used to reasonably minimize potentially significant adverse impacts to local services.

A. Transportation Facilities

Bridges & Culverts

George Elmer Drive crosses Flynn-Lowney Ditch on a concrete box culvert approximately 1,230 feet to the south of the proposed subdivision boundary. The culvert is approximately 70 feet in length and carries the flow of the irrigation ditch beneath the roadway. The design load of this culvert is not known; however, George Elmer Drive is classified as an Urban Local Street (With Parking), and there are no load limit signs for the culvert, so it can reasonably be assumed that the culvert has sufficient design load to accommodate typical traffic generated by the subdivision.

In addition, a proposed 35"x24" corrugated steel arch pipe culvert, approximately 105 feet in length, will route the existing irrigation ditch beneath the proposed roadway. Adequate soil cover will be provided over this culvert to ensure adequate design strength for vehicle loading.

Non-motorized Transportation Facilities

The proposed subdivision will include multiple non-motorized transportation facilities. George Elmer Drive includes bike lanes on the pavement shoulders south of the Flynn Lowney Ditch crossing, which transition to six-foot-wide bike lanes inside the parking lanes north of the ditch crossing. These six-foot-wide bike lanes will be continued along the entire length of George Elmer Drive through the proposed subdivision. To the south of the proposed subdivision, the bike lanes along George Elmer Drive offer connections to the existing bike path which parallels Mullan Road to the east and west.

In addition, the proposed subdivision will include sidewalks with a minimum width of five feet on both sides of all proposed roadways. All sidewalks, street crossings, and curb ramps will comply with Americans with Disabilities Act (ADA) accessibility standards. Pedestrian accessibility between the proposed subdivision, George Elmer Drive, and Flynn Ranch to the south will be provided by connecting to existing sidewalk infrastructure where applicable.

Bus Routes

The nearest Mountain Line bus route to the proposed subdivision is Route 11, connecting downtown Missoula to Missoula International Airport. There are no public transportation routes directly serving the proposed subdivision at the time of this environmental assessment. The project is not located on an existing school bus route. There are no proposed bus stops or turnarounds within the proposed subdivision.

Roads

A table summarizing the current conditions of existing roads and design of proposed roads serving the subdivision is included as an attachment to this Environmental Assessment. There are no proposed improvements to the existing roads – George Elmer Drive, Pius Way, and Old Ranch Road – which will serve the proposed subdivision.

Year-round Access - Year-round access to all seven lots and common facilities within the proposed subdivision will be provided. All proposed streets and roads will be paved public rights-of-way, maintained by the City of Missoula, including snow removal as necessary.

Arterial Access – All seven lots within the proposed subdivision will be provided access from Urban Local Streets. Four of the lots will have frontage along George Elmer Drive, which is classified as an Urban Collector (With Parking). It is not known at the time of this writing whether access to the developments constructed on these lots will be requested from George Elmer Drive; however, these lots will also have frontage along Urban Local Streets

Private Road Access – Access to the property is provided entirely via public rights-of-way. Access across private properties not owned by the subdivider is not necessary for this project. In addition, there are no proposed private roads, short courts, Homezone or Woonerf Streets, or cul-de-sacs, circle, or loop streets.

Traffic Impact Narrative

Abelin Traffic Services (ABS) of Helena, Montana conducted a Traffic Impact Study for the proposed development in December 2019. ATS performed a trip generation analysis to determine the anticipated future traffic volumes from the proposed development using the trip generation rates contained in Trip Generation (Institute of Transportation Engineers, Tenth Edition). These rates are the national standard and are based on the most current information available to planners. A vehicle “trip” is defined as any trip that either begins or ends at the development site. ATS determined that the critical traffic impacts on the intersections and roadways would occur during the weekday morning and evening peak hours. According to the ITE trip generation rates, at full build-out the proposed development would produce 238 AM peak hour trips, 290 PM peak hour trips, and 3,590 daily trips. Please refer to the complete Traffic Impact Study for detailed trip generation information.

Major existing transportation corridors within a one-half mile radius of the proposed subdivision include George Elmer Drive and Cattle Drive. George Elmer Drive includes a bicycle route and both of these corridors include pedestrian sidewalks. Mullan Road, slightly outside of this radius, will also see significant impacts from this development. A detailed analysis of impacts to existing transportation corridors in the vicinity of the proposed subdivision is provided in Abelin Traffic Services’ Traffic Impact Study. The traffic impacts outside of the development include the following:

- The proposed subdivision will contribute to the need for the planned signalization of the intersection at George Elmer Drive and Mullan Road.
- As development pressure increases in this area, the traffic signal will likely draw traffic from Chuck Wagon Drive onto George Elmer Drive to access the traffic signal, thus increasing the Chuck Wagon Drive intersection to capacity.
- The proposed subdivision will not contribute to the future need for a right-turn lane at Chuck Wagon Drive as very little traffic from the proposed development would benefit from using this turn lane.

- As traffic volumes increase with planned residential developments in the vicinity of the proposed subdivision, it may become necessary to install a four-way stop at the intersection of George Elmer Drive and Cattle Drive.

Planned improvements to existing public and private roads to mitigate the impacts anticipated from the proposed subdivision include the approval and design of a traffic signal for the intersection of George Elmer Drive and Mullan Road; a project which is currently underway at the time of this writing to meet the current traffic demands and future traffic volume growth.

Coordination of Roads

The proposed subdivision provides for coordination of the proposed extensions of George Elmer Drive and Old Ranch Road by matching centerlines and bearings. The existing infrastructure will be blended into the proposed improvements. Similarly, the bearings and centerlines, as well as the proposed cross-section, will be coordinated between the proposed subdivision and the proposed development of the parcel immediately to the west. Woith Engineering has been in contact with both the City of Missoula and 406 Engineering to ensure the accuracy of this coordination.

Right-of-way Easements

All proposed roadways within the subdivision will be dedicated to the City of Missoula as public rights-of-way.

B. Utilities and Services

Existing utilities on the subdivision property include overhead power installations along the eastern and southern property boundaries, a buried natural gas main installation along the southern boundary, parallel to Pius Way, and a buried electrical cable in the southeast corner of the property.

An existing power pole will need to be relocated to allow construction of the new road at the eastern edge of the property. This relocation will be coordinated with the owner of the overhead power utility. In addition, measures will be taken in design of the proposed improvements to ensure the existing buried natural gas main and electrical cable will not be adversely impacted. These measures include verification of new utility crossings and verification of cut and fill depths over the existing buried utilities. Notes will be included in the final construction plans requiring contact of "Utility Notification Center" (811) at least three working days prior to the commencement of construction activities to schedule the marking of existing utility locations.

The utility service providers for the proposed subdivision are listed below:

Electricity:	Northwestern Energy
Telephone:	Numerous Cellular Providers
Natural Gas:	Northwestern Energy
Cable TV:	Spectrum

Solid Waste: Republic Services

C. Water Supply

Water supply will be provided to the subdivision through the City of Missoula public water supply system. This is an existing public water supply system. The City of Missoula will be involved throughout the design of the proposed addition to the system to ensure adherence to standards and mitigate any potentially significant adverse impacts.

D. Sewage Disposal

Sewage disposal will be provided to the subdivision through the City of Missoula public sanitary sewer system. This is an existing public water supply system. The City of Missoula will be involved throughout the design of the proposed addition to the system to ensure adherence to standards and mitigate any potentially significant adverse impacts.

E. Schools

The proposed subdivision is located within Hellgate Elementary School District and Missoula County Public Schools Big Sky High School 9-12 district. The proposed subdivision could contain up to approximately 650 apartment units with the proposed zoning - given that the average number of persons per household in Missoula County is 2.33, and an estimated 19.3 percent of the population is below eighteen years of age, it is estimated that the proposed subdivision will add 250 to 300 school-aged children to these districts. This is unlikely to have any adverse impacts on the existing facilities or ability to teach existing students.

F. Emergency Services

No potentially significant adverse impacts to emergency services have been identified due to the proposed subdivision. A Fire Suppression Plan will be provided with the subdivision application packet. The subdivision property is located within the Wildland Urban Interface, similarly to most of Missoula County.

MCNETT FLATS SUBDIVISION
ONSITE & OFFSITE ROAD DESIGN SUMMARY

Road Name	George Elmer Drive	Old Ranch Road	Pius Way	Abby Lane	Briar Way	Winchester Drive	Remington Drive
Onsite or Offsite	Offsite with extension through proposed subdivision	Offsite with extension through proposed subdivision	Offsite	Onsite	Onsite	Proposed onsite roadway with extension into proposed adjacent subdivision to the west	Proposed onsite roadway with extension into proposed adjacent subdivision to the west
Right-of-way Type	Public	Public	Public	Public	Public	Public	Public
Right-of-way Width	80'	60'	54'	64'	64'	64'	64'
Surface Type	Asphalt	Asphalt	Asphalt	Asphalt	Asphalt	Asphalt	Asphalt
Offsite Surface Width (face of curb to face of curb)	46.5' (at connection point)	32.5' (at connection point)	24.5'	Not Applicable	Not Applicable	36'	36'
Proposed Onsite Surface Width (face of curb to face of curb)	48'	36'	Not Applicable	36'	36'	36'	36'
Maximum Grade	<8%	<8%	1.78%	Per Plan	Per Plan	Per Plan	Per Plan
Road Length	3,150' offsite 341' onsite	670' offsite 338' onsite	650'	1,088'	406'	1,296' offsite 200' onsite	1,296' offsite 205' onsite
Maintenance Responsibility	City of Missoula	City of Missoula	City of Missoula	City of Missoula	City of Missoula	City of Missoula	City of Missoula
Road Maintenance Agreement	Not applicable - Existing or proposed public right-of-way maintained by the City of Missoula	Not applicable - Existing or proposed public right-of-way maintained by the City of Missoula	Not applicable - Existing or proposed public right-of-way maintained by the City of Missoula	Not applicable - Existing or proposed public right-of-way maintained by the City of Missoula	Not applicable - Existing or proposed public right-of-way maintained by the City of Missoula	Not applicable - Existing or proposed public right-of-way maintained by the City of Missoula	Not applicable - Existing or proposed public right-of-way maintained by the City of Missoula
Curbs & Gutters	Yes - Typical 'L' Type Curb COM STD-121	Yes - Typical 'L' Type Curb COM STD-121	Yes - Typical 'L' Type Curb COM STD-121	Yes - Typical 'L' Type Curb COM STD-121	Yes - Typical 'L' Type Curb COM STD-121	Yes - Typical 'L' Type Curb COM STD-121	Yes - Typical 'L' Type Curb COM STD-121
Drainage Swales	None north of Flynn Lowney Ditch. Drainage swales are present south of the Flynn Lowney Ditch crossing.	None	None	None	None	None	None
Sidewalk, Trail, & Boulevard Widths	5.5' sidewalk 9.5' boulevard	5' sidewalk 7' boulevard	5' sidewalk 7' boulevard	5' sidewalk (proposed) 7' boulevard (proposed)			
Bike Lanes	Yes - 6' existing bike lanes and 6' proposed bike lanes	None	None	None	None	None	None
Estimated Time for Completion	Six months	Six months	Six months (half-street improvements)	Six months	Six months	Six months - Completion time for offsite portion is not known	Six months - Completion time for offsite portion is not known
Road Classification	Urban Collector (with Parking)	Urban Local Street					